

**CPC****COOPERATIVE PATENT CLASSIFICATION****Y10T****TECHNICAL SUBJECTS COVERED BY FORMER US CLASSIFICATION****NOTE**

This subclass has been introduced in January 2015 in view of the CPC to accommodate for technical subjects formerly covered by USPC

**Former US Class 16 series**

|                   |   |
|-------------------|---|
| <b>Y10T 16/00</b> | <b>Miscellaneous hardware [e.g., bushing, carpet fastener, caster, door closer, panel hanger, attachable or adjunct handle, hinge, window sash balance, etc.]</b> |
| Y10T 16/05        | . Bushing   |
| Y10T 16/063       | . . Providing a restricted or insulated environment [i.e., sealable] for internal elements  |
| Y10T 16/075       | . . Bung or tap   |
| Y10T 16/082       | . . . Threaded  |
| Y10T 16/088       | . . Providing strain relief   |
| Y10T 16/10        | . Carpet fasteners  |
| Y10T 16/104       | . . Combined fasteners and stretchers   |
| Y10T 16/109       | . . Hook  |
| Y10T 16/113       | . . Moldings  |
| Y10T 16/118       | . . Rug   |
| Y10T 16/122       | . . Stair   |
| Y10T 16/124       | . . . Risers  |
| Y10T 16/125       | . . . Rods  |
| Y10T 16/126       | . . . . Catches   |
| Y10T 16/1263      | . . . . . Sliding   |
| Y10T 16/1267      | . . . . . Swinging  |
| Y10T 16/127       | . . Sliding   |
| Y10T 16/131       | . . Strips  |
| Y10T 16/134       | . . Swinging  |
| Y10T 16/14        | . Carpet stiffener or anti-slip device, per se  |
| Y10T 16/18        | . Casters   |
| Y10T 16/182       | . . Adjustable  |
| Y10T 16/184       | . . Wheels  |
| Y10T 16/1847      | . . . Antifrictionally mounted  |
| Y10T 16/1853      | . . . Multiple  |
| Y10T 16/1857      | . . . . Antifrictionally swivelled  |

|              |         |                                    |
|--------------|---------|------------------------------------|
| Y10T 16/186  | . .     | Antifrictionally swivelled         |
| Y10T 16/1867 | . . .   | Ball                               |
| Y10T 16/1873 | . . .   | Cylinder                           |
| Y10T 16/1877 | . . . . | Pivoted                            |
| Y10T 16/188  | . .     | Ball                               |
| Y10T 16/1887 | . . .   | Antifrictionally mounted           |
| Y10T 16/1889 | . . . . | Ball                               |
| Y10T 16/1891 | . . . . | Cylinder                           |
| Y10T 16/1893 | . . .   | Pivoted                            |
| Y10T 16/19   | . .     | Bracket supports                   |
| Y10T 16/191  | . .     | Detachable                         |
| Y10T 16/193  | . .     | Leg elevators                      |
| Y10T 16/1937 | . . .   | Sliding                            |
| Y10T 16/1943 | . . .   | Swinging                           |
| Y10T 16/195  | . .     | Locked                             |
| Y10T 16/196  | . . .   | Shimmy dampening                   |
| Y10T 16/197  | . .     | Lubricators                        |
| Y10T 16/199  | . .     | Pintles                            |
| Y10T 16/201  | . .     | Pintle retainers                   |
| Y10T 16/202  | . . .   | Frame                              |
| Y10T 16/203  | . .     | Frame                              |
| Y10T 16/204  | . . .   | Single leg frame or fork           |
| Y10T 16/205  | . .     | Rigid wheel supports               |
| Y10T 16/207  | . .     | Scrapers                           |
| Y10T 16/209  | . .     | Sliding                            |
| Y10T 16/21   | . . .   | for tubular leg                    |
| Y10T 16/211  | . .     | Sockets                            |
| Y10T 16/212  | . .     | Spring supported                   |
| Y10T 16/214  | . .     | Inclined axle                      |
| Y10T 16/216  | . .     | Caster guard                       |
| Y10T 16/218  | . .     | Obstruction climbing aid           |
| Y10T 16/22   | . .     | Thermally released check or closer |
| Y10T 16/27   | . .     | Checks and closers                 |
| Y10T 16/276  | . .     | Liquid                             |
| Y10T 16/2766 | . . .   | Concentric spring chamber          |
| Y10T 16/2769 | . . . . | Cam                                |
| Y10T 16/2771 | . . .   | Hinge                              |
| Y10T 16/2774 | . . . . | Floor pivot                        |
| Y10T 16/2777 | . . .   | Multiple piston                    |
| Y10T 16/2782 | . . .   | Oscillating cylinder               |

|              |  |
|--------------|--|
| Y10T 16/2788 | . . . Oscillating piston                 |
| Y10T 16/2793 | . . . Side spring chamber                |
| Y10T 16/2796 | . . . . Cam                              |
| Y10T 16/2799 | . . . Spring and flexible link           |
| Y10T 16/2804 | . . . Spring and gear                    |
| Y10T 16/281  | . . Pneumatic                            |
| Y10T 16/282  | . . . Flexible link                      |
| Y10T 16/283  | . . . Hinge                              |
| Y10T 16/285  | . . . Spring and gear                    |
| Y10T 16/286  | . . . Spring and lever                   |
| Y10T 16/287  | . . Spring and flexible link             |
| Y10T 16/293  | . . Spring and gear                      |
| Y10T 16/299  | . . Spring and lever                     |
| Y10T 16/304  | . . Hinge                                |
| Y10T 16/31   | . Gate hangers                           |
| Y10T 16/33   | . . Sliding and swinging                 |
| Y10T 16/35   | . Panel hangers, travelers and/or tracks |
| Y10T 16/353  | . . with flexible panel attaching means  |
| Y10T 16/354  | . . . Covered, hollow or slotted track   |
| Y10T 16/3543 | . . . . with antifriction means          |
| Y10T 16/3545 | . . . . . Wood track                     |
| Y10T 16/3547 | . . . . Wood track                       |
| Y10T 16/355  | . . . with antifriction means            |
| Y10T 16/356  | . . Ball                                 |
| Y10T 16/359  | . . Cylinder                             |
| Y10T 16/361  | . . Guide brackets                       |
| Y10T 16/364  | . . Guide rollers                        |
| Y10T 16/367  | . . Link and lever                       |
| Y10T 16/37   | . . Sliding shoe                         |
| Y10T 16/372  | . . . Drapery supports                   |
| Y10T 16/373  | . . Track and bracket                    |
| Y10T 16/375  | . . . Drapery supports                   |
| Y10T 16/376  | . . Covered, hollow or slotted track     |
| Y10T 16/377  | . . . Wood                               |
| Y10T 16/378  | . . . Drapery supports                   |
| Y10T 16/3785 | . . . . Wood                             |
| Y10T 16/379  | . . Tracks                               |
| Y10T 16/3797 | . . . Drapery supports                   |
| Y10T 16/3803 | . . . Laminated                          |
| Y10T 16/381  | . . Wheel mounts                         |

|              |         |   |
|--------------|---------|---|
| Y10T 16/3813 | . . .   | Antifrictionally mounted wheels   |
| Y10T 16/3816 | . . .   | Door elevating  |
| Y10T 16/3819 | . . .   | Floor   |
| Y10T 16/3822 | . . .   | Reciprocating track   |
| Y10T 16/3825 | . . .   | Traveling wheel   |
| Y10T 16/3828 | . . .   | Swinging  |
| Y10T 16/3831 | . . .   | Swiveling   |
| Y10T 16/3834 | . . .   | Vertically adjustable   |
| Y10T 16/3837 | . . .   | Wheel and guide roller  |
| Y10T 16/384  | . .     | Wheels  |
| Y10T 16/387  | . .     | Overlapping doors, common track   |
| Y10T 16/39   | . .     | Ferrules, rings, and thimbles   |
| Y10T 16/42   | . .     | Ring ferrules   |
| Y10T 16/44   | . .     | Handle, handle component, or handle adjunct   |
| Y10T 16/444  | . .     | having receptacle within  |
| Y10T 16/447  | . .     | for plow  |
| Y10T 16/451  | . .     | Length adjustable pull handle for luggage or luggage cart [e.g., wheeled suitcase handle, etc.]                   |
| Y10T 16/455  | . .     | Luggage-type [loop style] handgrip for carrying [e.g., suitcase, handbag, briefcase, shopping bag, package, etc.] |
| Y10T 16/4554 | . . .   | Extensible handle   |
| Y10T 16/4559 | . . .   | Detachable handle   |
| Y10T 16/4563 | . . .   | Welded or adhesively attached handle  |
| Y10T 16/4567 | . . .   | Swinging handle   |
| Y10T 16/4569 | . . . . | with means permanently connecting the handle to a carried article   |
| Y10T 16/4571 | . . .   | with means permanently connecting the handle to a carried article   |
| Y10T 16/4576 | . . .   | with carrier handle including a user enhanced grip attachment   |
| Y10T 16/458  | . .     | Door handle   |
| Y10T 16/459  | . . .   | Detachable handle   |
| Y10T 16/46   | . . .   | Knob type   |
| Y10T 16/462  | . .     | Drawer pull   |
| Y10T 16/4628 | . . .   | Lift  |
| Y10T 16/4636 | . . .   | Knob type   |
| Y10T 16/464  | . . . . | Swinging  |
| Y10T 16/4644 | . . .   | Loop type   |
| Y10T 16/4652 | . . .   | Ring type   |
| Y10T 16/466  | . .     | Handle having mounted grip means [e.g., bicycle handlebar grips, etc.]  |
| Y10T 16/469  | . .     | Detachable handle   |
| Y10T 16/4696 | . . .   | for battery   |
| Y10T 16/4701 | . . .   | for casket  |

|              |   |
|--------------|---|
| Y10T 16/4707 | . . . for container   |
| Y10T 16/4713 | . . . Auxiliary handle  |
| Y10T 16/4719 | . . . Extension   |
| Y10T 16/4724 | . . . Cord or rope related  |
| Y10T 16/473  | . . Extensible handle   |
| Y10T 16/476  | . . Handle with ergonomic structure [e.g., finger engagement structure such as indents, grooves, etc.] and handle user-interaction [human engineering] enhancements such as improved handle dimensions and handle positioning |
| Y10T 16/48   | . Insulated handle  |
| Y10T 16/484  | . . Handwheel   |
| Y10T 16/487  | . . Knob type   |
| Y10T 16/491  | . . Wire type   |
| Y10T 16/495  | . . Unshaped or unattached pad  |
| Y10T 16/498  | . . Bar-type handle   |
| Y10T 16/499  | . . . for lawnmower   |
| Y10T 16/50   | . . . Swinging  |
| Y10T 16/501  | . . . . Casket handle   |
| Y10T 16/502  | . . Braced handle   |
| Y10T 16/506  | . . Knob-type handle  |
| Y10T 16/508  | . . . with flexible suspending means  |
| Y10T 16/509  | . . Lift  |
| Y10T 16/513  | . . Loop-type handle  |
| Y10T 16/515  | . . . Swinging  |
| Y10T 16/516  | . . Ring-type handle  |
| Y10T 16/52   | . Hinge   |
| Y10T 16/521  | . . including frangible or fusible portion  |
| Y10T 16/522  | . . with diverse art portion or attachment  |
| Y10T 16/524  | . . Ball and socket   |
| Y10T 16/525  | . . Pliant or elastic hinge   |
| Y10T 16/5253 | . . . Metallic  |
| Y10T 16/5257 | . . . Snap or X hinge   |
| Y10T 16/526  | . . Eyeglass hinge  |
| Y10T 16/527  | . . Retractable pintle  |
| Y10T 16/5275 | . . . Latch hinge   |
| Y10T 16/528  | . . Latch hinge   |
| Y10T 16/5285 | . . . Resilient securing means  |
| Y10T 16/529  | . . including lever for shifting one member of hinge relative to another  |
| Y10T 16/531  | . . having staggered leaves   |
| Y10T 16/532  | . . including adjustment for changing relative orientation of hinged members  |
| Y10T 16/5321 | . . . having plural independent adjustments   |

|                |   |
|----------------|---|
| Y10T 16/5322   | . . . . All rectilinear   |
| Y10T 16/53225  | . . . . . including screw-operated means to move hinged members   |
| Y10T 16/5323   | . . . Pivotal adjustment  |
| Y10T 16/53235  | . . . . including screw-operated means to move hinged members   |
| Y10T 16/53238  | . . . . . About hinge axis  |
| Y10T 16/5324   | . . . including means to move hinged members  |
| Y10T 16/53247  | . . . . Along or parallel to hinge axis   |
| Y10T 16/5325   | . . . . . including threaded hinge pin  |
| Y10T 16/53253  | . . . . Screw-operated  |
| Y10T 16/53257  | . . . . . to shift plate toward or away from hinged member  |
| Y10T 16/5326   | . . . having adjustable spacer between leaf and hinged member [e.g., shim]                                  |
| Y10T 16/5327   | . . . Adjustable along or parallel to hinge axis  |
| Y10T 16/5329   | . . . having interdigitated surfaces or slot for hinge-to-member fastener                                   |
| Y10T 16/533    | . . having cover  |
| Y10T 16/5335   | . . . Leaf cover  |
| Y10T 16/534    | . . having clamp for attaching hinge to hinged member   |
| Y10T 16/5345   | . . . Circumferential clamp   |
| Y10T 16/535    | . . having means to facilitate assembly and disassembly of hinge sections to join or disjoin hinged members |
| Y10T 16/5353   | . . . Resiliently biased hinge  |
| Y10T 16/5355   | . . . . having helical spring along hinge axis  |
| Y10T 16/5357   | . . . Resiliently biased retaining means  |
| Y10T 16/5358   | . . . . having discrete latch and spring to slide or pivot latch  |
| Y10T 16/5359   | . . . . Discrete retaining means for pivotal contacting surfaces  |
| Y10T 16/536    | . . . Separation of pivotal contacting surfaces   |
| Y10T 16/53605  | . . . . having movable or removable connector   |
| Y10T 16/53607  | . . . . . Pintle removable from remainder of hinge  |
| Y10T 16/536075 | . . . . . and additional connector for pintle or separate pintle sections                                   |
| Y10T 16/53608  | . . . . . Screw-threaded connector  |
| Y10T 16/5361   | . . . . Axially shifting hinge sections   |
| Y10T 16/53613  | . . . . . At specific angular orientation of hinge sections   |
| Y10T 16/53615  | . . . . Hook and pin  |
| Y10T 16/5362   | . . . . Hook in aperture  |
| Y10T 16/53625  | . . . . Hook to hook  |
| Y10T 16/5363   | . . . and discrete movable or removable connector to fasten one hinge section to another                    |
| Y10T 16/5367   | . . . by relatively sliding connection [e.g., dovetail]   |
| Y10T 16/5369   | . . . . including receiving connector attachable to hinged member   |
| Y10T 16/537    | . . having means to reduce friction between hinge parts   |
| Y10T 16/5373   | . . . by fluid lubricant  |

|                |           |  |
|----------------|-----------|--|
| Y10T 16/5377   | . . .     | Ball or roller bearing   |
| Y10T 16/5379   | . . . .   | Circularly distributed balls or rollers  |
| Y10T 16/538    | . .       | Resiliently biased hinge   |
| Y10T 16/5381   | . . .     | including means to render spring ineffective through all or a portion of swing               |
| Y10T 16/53815  | . . . .   | comprising manipulatable element or portion  |
| Y10T 16/5382   | . . .     | Biased from either direction toward neutral position [e.g., double acting]                   |
| Y10T 16/53822  | . . . .   | Helical spring transverse to hinge axis  |
| Y10T 16/53824  | . . . .   | Plural hinge axes [e.g., multiple pintle]  |
| Y10T 16/53825  | . . . . . | and barrels for helical springs on separate axes   |
| Y10T 16/53826  | . . . .   | Resiliently biased rolling or sliding cam surface  |
| Y10T 16/53828  | . . . .   | by helical spring along hinge axis   |
| Y10T 16/5383   | . . .     | having transverse helical spring or elastic strip  |
| Y10T 16/53832  | . . . .   | Plural hinge axes [e.g., multiple pintle ]   |
| Y10T 16/53833  | . . . . . | Four or more axes  |
| Y10T 16/53834  | . . . .   | to counterbalance weight of hinged member [e.g., closure biased to open position]            |
| Y10T 16/53835  | . . . . . | including pivoted coaxial spring retaining bar   |
| Y10T 16/53836  | . . . .   | Over-center spring or linkage travel [e.g., "holdback hinge"]                                |
| Y10T 16/53838  | . . . .   | having means to hold hinged members against pivotal movement about hinge axis [i.e., catch]  |
| Y10T 16/5384   | . . .     | Over-center spring or linkage travel [e.g., "holdback hinge"]                                |
| Y10T 16/53843  | . . . .   | Plural hinge axes  |
| Y10T 16/53845  | . . . .   | Coil spring having axis along or parallel to hinge axis                                      |
| Y10T 16/53848  | . . . .   | including camming or sliding surface to deflect spring perpendicularly to the hinge axis     |
| Y10T 16/5385   | . . .     | having means to hold hinged members against pivotal movement about hinge axis [e.g., catch]  |
| Y10T 16/5386   | . . .     | having force adjustment  |
| Y10T 16/53862  | . . . .   | Rotatable spring-engaging collar   |
| Y10T 16/538627 | . . . . . | having detention aperture or protuberance  |
| Y10T 16/538633 | . . . . . | having tool-receiving aperture   |
| Y10T 16/53864  | . . .     | Plural hinge axes [e.g., multiple pintle]  |
| Y10T 16/5387   | . . .     | having axially biased camming surface  |
| Y10T 16/5388   | . . .     | Coil   |
| Y10T 16/53883  | . . . .   | Plural coils   |
| Y10T 16/53885  | . . . .   | to counterbalance weight of hinged member [e.g., horizontal closure biased to open position] |
| Y10T 16/53888  | . . . .   | On pintle  |
| Y10T 16/5389   | . . .     | torsion spring   |
| Y10T 16/539    | . .       | Gravitating hinge having vertical axis   |
| Y10T 16/5393   | . . .     | having lift rod  |

|                |             |   |
|----------------|-------------|---|
| Y10T 16/5395   | . . .       | having plural spaced hinge axes   |
| Y10T 16/5398   | . . .       | including cam surface and follower  |
| Y10T 16/53984  | . . . .     | and rolling element   |
| Y10T 16/53985  | . . . .     | Between opposing surfaces   |
| Y10T 16/53987  | . . . .     | and detent in cam surface   |
| Y10T 16/53988  | . . . .     | On axially twisted or helically fluted element  |
| Y10T 16/53992  | . . . .     | including means to hold hinged members against pivotal movement                         |
| Y10T 16/53996  | . . . .     | having aperture for slidably receiving pintle [e.g., camming knuckle]                   |
| Y10T 16/54     | . .         | including means to hold or retard hinged members against pivotal movement [e.g., catch] |
| Y10T 16/5401   | . . .       | Magnetic  |
| Y10T 16/5402   | . . .       | Resiliently biased catch  |
| Y10T 16/54021  | . . . .     | having spring force adjustment  |
| Y10T 16/54023  | . . . .     | including toggle linkage  |
| Y10T 16/54024  | . . . .     | having discrete manipulatable release means [e.g., lever]                               |
| Y10T 16/540243 | . . . . .   | including cam or eccentric  |
| Y10T 16/540247 | . . . . .   | Sliding release means or lever-actuated sliding catch                                   |
| Y10T 16/54025  | . . . .     | Sliding   |
| Y10T 16/540253 | . . . . .   | Movement along or parallel to hinge axis  |
| Y10T 16/540254 | . . . . .   | Interdigitated or plural sockets  |
| Y10T 16/540255 | . . . . . . | Opposed interdigitated sliding collars on hinge axis                                    |
| Y10T 16/540256 | . . . . . . | and catch receiving socket  |
| Y10T 16/540257 | . . . . .   | and catch receiving socket  |
| Y10T 16/54026  | . . . .     | Pivoted   |
| Y10T 16/54028  | . . . .     | Plural alternately useable detents  |
| Y10T 16/54029  | . . . .     | Spring arm  |
| Y10T 16/540295 | . . . . .   | Plural opposed arms   |
| Y10T 16/5403   | . . .       | by friction   |
| Y10T 16/54033  | . . . .     | Screw-threaded adjustment   |
| Y10T 16/54034  | . . . . .   | Along or parallel to hinge axis   |
| Y10T 16/540345 | . . . . . . | Threaded pintle   |
| Y10T 16/54035  | . . . .     | Cam or wedge actuator   |
| Y10T 16/54038  | . . . .     | On hinge pin or between surfaces surrounding hinge axis                                 |
| Y10T 16/5404   | . . .       | Pivoted   |
| Y10T 16/54044  | . . . .     | Plural alternately useable detents  |
| Y10T 16/54048  | . . . .     | and sliding   |
| Y10T 16/54052  | . . . .     | Serially connected pivoted arms between leaves [e.g., brace]                            |
| Y10T 16/54056  | . . . .     | About axis along or parallel to hinge axis  |
| Y10T 16/5406   | . . .       | by transversely moving pin in slot  |
| Y10T 16/5407   | . . .       | having discrete manipulatable release means [e.g., lever operated]                      |



- Y10T 16/5408 . . . by shifting hinged members
- Y10T 16/54085 . . . . Along hinge axis
- Y10T 16/5409 . . . Sliding
- Y10T 16/54095 . . . . Along or parallel to hinge axis
- Y10T 16/541 . . including toothed gear
- Y10T 16/542 . . comprising nested open curved portions attached to hinged members
- Y10T 16/543 . . . including hinge pin
- Y10T 16/544 . . including transversely moving pin in slot
- Y10T 16/5443 . . . Plural noncollinear pins and slots
- Y10T 16/5444 . . . . Parallel slots
- Y10T 16/5445 . . . having pin fixed to pivoted arm or plate
- Y10T 16/5448 . . . Hinge pin movable along slot
- Y10T 16/545 . . including sliding surfaces to permit relative translation of hinged members
- Y10T 16/5453 . . . and stop or abutment for pivotal movement
- Y10T 16/5457 . . . Movement transverse to hinge axis
- Y10T 16/546 . . Three-hinged members
- Y10T 16/547 . . having plural hinge axes [e.g., multiple pintle]
- Y10T 16/5472 . . . having transverse or skewed axes
- Y10T 16/5474 . . . Connected by serially arranged pivoted links between hinged members
- Y10T 16/5475 . . . . Plural sets of serially arranged pivoted links
- Y10T 16/5476 . . . Four or more axes
- Y10T 16/5478 . . . including stop or latch
- Y10T 16/548 . . including laminated leaf
- Y10T 16/549 . . Wire hinge
- Y10T 16/551 . . having stop or abutment
- Y10T 16/5513 . . . Adjustable or resilient
- Y10T 16/5515 . . . comprising relieved axially opposed relatively rotating surfaces
- Y10T 16/5518 . . . comprising platelike bearing portion curved about hinge axis
- Y10T 16/552 . . Hinge axis passes through hinged member [e.g., floor hinge]
- Y10T 16/5525 . . . Pintle or pivot concealed in hinged member
- Y10T 16/553 . . including means to retain pintle in hinge [e.g., tamper proof, nonrising pintle, etc.]
- Y10T 16/5535 . . . Threaded or slotted pintle or knuckle
- Y10T 16/554 . . including means to fasten leaf to member
- Y10T 16/5543 . . . by expandable connector
- Y10T 16/5547 . . . Self-penetrating fastener
- Y10T 16/555 . . Specified material
- Y10T 16/557 . . Specific pintle structure
- Y10T 16/558 . . Specific leaf structure
- Y10T 16/559 . . having prongs or cooperating structure on leaf

|               |  |
|---------------|--|
| Y10T 16/5595  | . . . Angular leaf sections                                  |
| Y10T 16/55963 | . . . . Parallel sections                                    |
| Y10T 16/55975 | . . . . Coplanar sections                                    |
| Y10T 16/55988 | . . . . including planar section perpendicular to hinge axis |
| Y10T 16/56    | . Closers  |
| Y10T 16/568   | . . Spring and flexible link                                 |
| Y10T 16/577   | . . Spring and gear  |
| Y10T 16/585   | . . Spring and lever   |
| Y10T 16/593   | . . Spring   |
| Y10T 16/595   | . . . Bow  |
| Y10T 16/597   | . . . Rubber   |
| Y10T 16/599   | . . . torsional  |
| Y10T 16/5995  | . . . . Coil   |
| Y10T 16/60    | . . . Volute   |
| Y10T 16/602   | . . Weight   |
| Y10T 16/61    | . Closure checks   |
| Y10T 16/615   | . . Inertia  |
| Y10T 16/62    | . . Pneumatic  |
| Y10T 16/625   | . . Spring   |
| Y10T 16/628   | . . . Rubber   |
| Y10T 16/6285  | . . . . Rubber cushioned                                     |
| Y10T 16/629   | . . . . Multiple or opposed buffer surfaces                  |
| Y10T 16/6295  | . . . . Link type  |
| Y10T 16/6298  | . Sash balances  |
| Y10T 16/63    | . . Cord and counterweight                                   |
| Y10T 16/635   | . . Sash and cord  |
| Y10T 16/64    | . . Spring   |
| Y10T 16/641   | . . . Drum and cord  |
| Y10T 16/642   | . . . Friction roller  |
| Y10T 16/643   | . . . Lever  |
| Y10T 16/644   | . . . Rack and pinion  |
| Y10T 16/645   | . . Rack and pinion  |
| Y10T 16/65    | . Sash-cord fasteners  |
| Y10T 16/655   | . . Bendable   |
| Y10T 16/66    | . . Chain  |
| Y10T 16/665   | . . Clamps   |
| Y10T 16/67    | . . Hooks  |
| Y10T 16/675   | . . Knot   |
| Y10T 16/68    | . . Slack-cord holders                                       |
| Y10T 16/685   | . . Weight   |

|             |                                       |
|-------------|---------------------------------------|
| Y10T 16/69  | . Sash-cord guides                    |
| Y10T 16/698 | . . Wheel and casing                  |
| Y10T 16/706 | . . Casings                           |
| Y10T 16/71  | . . . Sheet metal, single piece       |
| Y10T 16/714 | . . Multiple wheel                    |
| Y10T 16/722 | . . Sliding                           |
| Y10T 16/73  | . Sash weights                        |
| Y10T 16/743 | . . Composite                         |
| Y10T 16/755 | . . Sectional                         |
| Y10T 16/767 | . . Weight and wheel                  |
| Y10T 16/78  | . Window-bead fasteners               |
| Y10T 16/82  | . Counterbalance device, per se       |
| Y10T 16/84  | . . Spring                            |
| Y10T 16/86  | . Door escutcheon or similar element  |
| Y10T 16/90  | . Paper weight                        |
| Y10T 16/95  | . Miscellaneous element or attachment |

**Former US Class 24 series**

|                   |   |
|-------------------|---|
| <b>Y10T 24/00</b> | <b>Buckles, buttons, clasps, etc.</b>                   |
| Y10T 24/10        | . Miscellaneous   |
| Y10T 24/11        | . Album fasteners                                       |
| Y10T 24/12        | . Gun band type   |
| Y10T 24/13        | . Article holder attachable to apparel or body          |
| Y10T 24/1303      | . . Chatelaine safety hooks                             |
| Y10T 24/1306      | . . Flower  |
| Y10T 24/1309      | . . . Pin attached                                      |
| Y10T 24/1312      | . . Napkin  |
| Y10T 24/1315      | . . . Hook  |
| Y10T 24/1318      | . . . Neck enclosing                                    |
| Y10T 24/1321      | . . Pencil  |
| Y10T 24/1324      | . . . Clasp attached                                    |
| Y10T 24/1326      | . . . . Finger ear, belt attached pencil holder         |
| Y10T 24/1329      | . . . . Pencil holder with paper clip                   |
| Y10T 24/1332      | . . . . Combined and convertible pencil holder          |
| Y10T 24/1335      | . . . . Container type pencil holder                    |
| Y10T 24/1338      | . . . . Separate pencil holder and pocket engaging clip |
| Y10T 24/1341      | . . . . Sliding jaw pencil holding clip                 |
| Y10T 24/1344      | . . . . Wire pencil holder                              |
| Y10T 24/1347      | . . . . Flexible shank pencil holder                    |

|              |   |
|--------------|---|
| Y10T 24/135  | . . . . with movable catch [e.g., pin pivoted lever, roller, etc.]            |
| Y10T 24/1353 | . . . . Pivoted jaw pencil holder   |
| Y10T 24/1356 | . . . Pin attached  |
| Y10T 24/1359 | . . . Rule holder   |
| Y10T 24/1362 | . . Sleeve holder [e.g., for inner coat]                                      |
| Y10T 24/1365 | . . Pin attached  |
| Y10T 24/1368 | . . Arm or leg carried holder   |
| Y10T 24/1371 | . . Eyeglass holder including retaining means                                 |
| Y10T 24/1374 | . . Neck supported holder   |
| Y10T 24/1376 | . . Holder contains pocket engager [e.g., antitheft device, wallet protector] |
| Y10T 24/1379 | . . Key ring holder   |
| Y10T 24/1382 | . . Receptacle type holder  |
| Y10T 24/1385 | . . . Eyeglass or spectacle case  |
| Y10T 24/1388 | . . Open-ended holster type holder  |
| Y10T 24/1391 | . . Article held by clip with spring [e.g., leaf, coil] member                |
| Y10T 24/1394 | . . Article held by clip  |
| Y10T 24/1397 | . . Article held by flexible connector [e.g., chain]                          |
| Y10T 24/14   | . Bale and package ties, hose clamps  |
| Y10T 24/1402 | . . Packet holders  |
| Y10T 24/1404 | . . . Cord  |
| Y10T 24/1406 | . . . Adjustable bands  |
| Y10T 24/1408 | . . . Closed loops  |
| Y10T 24/141  | . . . Plastic bands   |
| Y10T 24/1412 | . . with tighteners   |
| Y10T 24/1414 | . . . Wedge   |
| Y10T 24/1416 | . . . Winder  |
| Y10T 24/1418 | . . . Self-locking [dead center or snap action]                               |
| Y10T 24/142  | . . . . Adjustable girth  |
| Y10T 24/1422 | . . . . . Rack bar  |
| Y10T 24/1424 | . . . Lever   |
| Y10T 24/1427 | . . . Worm and tooth  |
| Y10T 24/1429 | . . . . Pivotal worm band clamp   |
| Y10T 24/1431 | . . . . Radial worm band clamp  |
| Y10T 24/1433 | . . . Integral thread   |
| Y10T 24/1435 | . . . External thread   |
| Y10T 24/1437 | . . . . Both ends threaded  |
| Y10T 24/1439 | . . . Radial screw  |
| Y10T 24/1441 | . . . Tangential screw  |
| Y10T 24/1443 | . . . . Adjustable girth  |
| Y10T 24/1445 | . . . . . Step adjustment   |

|              |           |  |
|--------------|-----------|--|
| Y10T 24/1447 | . . . . . | Plural separable parts                         |
| Y10T 24/1449 | . . . .   | Wire   |
| Y10T 24/1451 | . . . .   | Plural separable parts                         |
| Y10T 24/1453 | . . . .   | Pivotal strap parts                            |
| Y10T 24/1455 | . . . .   | Plural wrap                                    |
| Y10T 24/1457 | . .       | Metal bands                                    |
| Y10T 24/1459 | . . .     | Separate connections                           |
| Y10T 24/1461 | . . . .   | One piece                                      |
| Y10T 24/1463 | . . . . . | Sheet metal                                    |
| Y10T 24/1465 | . . . . . | Buckle band connection                         |
| Y10T 24/1467 | . . . . . | Swedged sheet metal band connection            |
| Y10T 24/1469 | . . . . . | End-to-end integral with band connecting means |
| Y10T 24/1471 | . . . .   | Pivoted parts                                  |
| Y10T 24/1473 | . . . .   | Wedging parts                                  |
| Y10T 24/1476 | . . . .   | Wire   |
| Y10T 24/1478 | . . .     | Circumferentially swagged band clamp           |
| Y10T 24/148  | . . .     | End-to-end integral band end connection        |
| Y10T 24/1482 | . . .     | Ratchet and tool tightened band clamp          |
| Y10T 24/1484 | . . .     | Spring closed band clamp                       |
| Y10T 24/1486 | . . .     | Screw locked band clamp                        |
| Y10T 24/1488 | . . .     | Swedged to lock band ends                      |
| Y10T 24/149  | . .       | Wire   |
| Y10T 24/1492 | . . .     | Separate connections                           |
| Y10T 24/1494 | . . . .   | Wire   |
| Y10T 24/1496 | . .       | Wooden bands                                   |
| Y10T 24/1498 | . .       | Plastic band                                   |
| Y10T 24/15   | . .       | Bag fasteners                                  |
| Y10T 24/152  | . .       | Swedged bag tie                                |
| Y10T 24/153  | . .       | Plastic band bag tie                           |
| Y10T 24/155  | . .       | Resilient slot bag tie                         |
| Y10T 24/157  | . .       | Twist-to-close bag tie                         |
| Y10T 24/158  | . .       | Slides to lock bag end within housing          |
| Y10T 24/16   | . .       | Belt fasteners                                 |
| Y10T 24/1604 | . .       | Tighteners                                     |
| Y10T 24/1608 | . .       | Hinged   |
| Y10T 24/1612 | . . .     | Ring connected belt ends                       |
| Y10T 24/1616 | . . .     | Bent over flanged ends                         |
| Y10T 24/162  | . . .     | Pintle pin connected belt ends                 |
| Y10T 24/1624 | . . .     | V and round belts                              |
| Y10T 24/1628 | . . .     | Overlapped belt ends                           |

|              |  |
|--------------|--|
| Y10T 24/1632 | . . . Sheet metal knuckles, common pintle                      |
| Y10T 24/1636 | . . . Wire knuckles, common pintle                             |
| Y10T 24/164  | . . . Knuckle integral with belt material                      |
| Y10T 24/1644 | . . . Multiple pintles interconnected V-belt type              |
| Y10T 24/1648 | . . Lacing   |
| Y10T 24/1652 | . . One piece  |
| Y10T 24/1656 | . . . Deflecting prong   |
| Y10T 24/166  | . . Screw clamp  |
| Y10T 24/1664 | . . Splices  |
| Y10T 24/1668 | . . Wire   |
| Y10T 24/1672 | . . Butt connected belt ends                                   |
| Y10T 24/1676 | . . V, round, trapezoidal belts                                |
| Y10T 24/168  | . . Flanged belt ends, connector hold ends                     |
| Y10T 24/1684 | . . Lapped ends of endless belts                               |
| Y10T 24/1688 | . . Hinged ends of endless belts                               |
| Y10T 24/1692 | . . Wire strands reinforce belts                               |
| Y10T 24/1696 | . . Hook and loop type fastener and zipper belt end connection |
| Y10T 24/17   | . Buttoners  |
| Y10T 24/18   | . Cuff holder  |
| Y10T 24/181  | . . Adjustable   |
| Y10T 24/183  | . . Sleeve clasp and button for cuff                           |
| Y10T 24/184  | . . Sleeve clasp and clasp for cuff                            |
| Y10T 24/185  | . . Sleeve clasp and hook for cuff                             |
| Y10T 24/186  | . . Sleeve clasp and pin for cuff                              |
| Y10T 24/188  | . . Sleeve pin and button for cuff                             |
| Y10T 24/189  | . . Pin fastener   |
| Y10T 24/19   | . Necktie fastener   |
| Y10T 24/1903 | . . Bands  |
| Y10T 24/1907 | . . . End-securing pin   |
| Y10T 24/191  | . . . Gripping   |
| Y10T 24/1914 | . . . Depressors   |
| Y10T 24/1917 | . . . . Button engaging  |
| Y10T 24/1921 | . . . . Pin or spur  |
| Y10T 24/1924 | . . Button engaging  |
| Y10T 24/1928 | . . . Adjustable   |
| Y10T 24/1931 | . . . Cord loop  |
| Y10T 24/1934 | . . . Pivoted or sliding jaw                                   |
| Y10T 24/1938 | . . . Pin attached   |
| Y10T 24/1941 | . . Collar button combined                                     |
| Y10T 24/1945 | . . . Clasp attached   |

|              |   |
|--------------|---|
| Y10T 24/1948 | . . . Pin attached  |
| Y10T 24/1952 | . . . Separable fastener  |
| Y10T 24/1955 | . . Tie, attached hook  |
| Y10T 24/1959 | . . Magnetic, adhesive, or snap type fastener connects tie to shirt |
| Y10T 24/1962 | . . Tie engaging loop with shirt engaging fastener                  |
| Y10T 24/1966 | . . Tie knot engaging and collar attaching                          |
| Y10T 24/1969 | . . Tie clip and shirt clasp attaching                              |
| Y10T 24/1972 | . . Tie clip and fastening pin                                      |
| Y10T 24/1976 | . . Tie pin with shirt fastener                                     |
| Y10T 24/1979 | . . Tie stiffener with shirt fastener                               |
| Y10T 24/1983 | . . with pivotal jaws having spring means                           |
| Y10T 24/1986 | . . Slider  |
| Y10T 24/199  | . . Ornamental  |
| Y10T 24/1993 | . . . Key shaped  |
| Y10T 24/1997 | . . Resilient clasp   |
| Y10T 24/20   | . Paper fastener  |
| Y10T 24/201  | . . with screw threaded or notch engaging securing means            |
| Y10T 24/202  | . . Resiliently biased  |
| Y10T 24/203  | . . . including means to open or close fastener                     |
| Y10T 24/204  | . . . . Pivotaly mounted on pintle                                  |
| Y10T 24/205  | . . . One piece   |
| Y10T 24/206  | . . . . Mounted on support means                                    |
| Y10T 24/207  | . . Adhesive  |
| Y10T 24/208  | . . Corner fastened   |
| Y10T 24/209  | . . Paper-penetrating   |
| Y10T 24/21   | . Strap tighteners  |
| Y10T 24/2102 | . . Cam lever and loop  |
| Y10T 24/2104 | . . . Step adjusted   |
| Y10T 24/2106 | . . . . Ski boot and garment fasteners                              |
| Y10T 24/2108 | . . . . Split ring tightener  |
| Y10T 24/2109 | . . . . Chain and rope tighteners                                   |
| Y10T 24/2111 | . . . . Tire chain tighteners                                       |
| Y10T 24/2113 | . . . . Strap tighteners  |
| Y10T 24/2115 | . . . . Jewelry   |
| Y10T 24/2117 | . . . Strap tighteners  |
| Y10T 24/2119 | . . . Tie chain tighteners  |
| Y10T 24/2121 | . . . Cargo tie down  |
| Y10T 24/2123 | . . . Cover fasteners   |
| Y10T 24/2125 | . . . Chain tighteners  |
| Y10T 24/2126 | . . . Strap tightener machine                                       |

|              |  |
|--------------|--|
| Y10T 24/2128 | . . . toggle actuated sliding jaw                      |
| Y10T 24/213  | . . . Jewelry  |
| Y10T 24/2132 | . . . Split ring with tightener                        |
| Y10T 24/2134 | . . . Concrete form panels                             |
| Y10T 24/2136 | . . . Seat belt buckles                                |
| Y10T 24/2138 | . . . Chain, cable, wire tighteners, and anchors       |
| Y10T 24/214  | . . . Envelope fasteners                               |
| Y10T 24/2142 | . . . Ski boot and garment fasteners                   |
| Y10T 24/2143 | . . Strap-attached folding lever                       |
| Y10T 24/2145 | . . . toggle latch                                     |
| Y10T 24/2147 | . . . Strap tightener                                  |
| Y10T 24/2149 | . . . Tire antiskid strap tightener                    |
| Y10T 24/2151 | . . . Seat belts                                       |
| Y10T 24/2153 | . . . Split ring fasteners                             |
| Y10T 24/2155 | . . . Jewelry-watch straps                             |
| Y10T 24/2157 | . . . Tie downs [covers, articles]                     |
| Y10T 24/2158 | . . . Cable, wire, rope tightener                      |
| Y10T 24/216  | . . . Ski boot and garment fasteners                   |
| Y10T 24/2162 | . . . Dress hem raisers                                |
| Y10T 24/2164 | . . Midline  |
| Y10T 24/2166 | . . Jewelry  |
| Y10T 24/2168 | . . Seat belt  |
| Y10T 24/217  | . . Accordion straps                                   |
| Y10T 24/2172 | . . Parallel poles clamp                               |
| Y10T 24/2174 | . . form panels for walls                              |
| Y10T 24/2175 | . . Cargo tie down                                     |
| Y10T 24/2177 | . . Chain tighteners                                   |
| Y10T 24/2179 | . . Split band with tightener                          |
| Y10T 24/2181 | . . Tire chain tighteners                              |
| Y10T 24/2183 | . . Ski, boot, and shoe fasteners                      |
| Y10T 24/2185 | . . Fixed jaw with sliding or pivoted jaw              |
| Y10T 24/2187 | . . Rack and pinion and circular tighteners            |
| Y10T 24/2189 | . . Circular flange container clamp                    |
| Y10T 24/2191 | . . Strap stretching tools, tighteners, and sealers    |
| Y10T 24/2192 | . . Buckle type  |
| Y10T 24/2194 | . . Integral piece                                     |
| Y10T 24/2196 | . . toggle   |
| Y10T 24/2198 | . . Stocking top                                       |
| Y10T 24/22   | . Trouser guards, clips, straps [e.g., above shoetops] |
| Y10T 24/23   | . Bedclothes holders                                   |



- Y10T 24/24 . T-head nongripping, fabric engaging type
- Y10T 24/25 . Zipper or required component thereof
- Y10T 24/2502 . . Plural zippers
- Y10T 24/2504 . . . Zipper chain
- Y10T 24/2505 . . . having surface sealing structure
- Y10T 24/2507 . . having slider or interconnected sliders with access opening for diverse-art member
- Y10T 24/2509 . . Plural independently movable sliders
- Y10T 24/2511 . . with distinct, stationary means for anchoring slider
- Y10T 24/2513 . . . and for aligning surfaces or obstructing slider movement
- Y10T 24/2514 . . with distinct member for sealing surfaces
- Y10T 24/2516 . . with distinct separable-fastener
- Y10T 24/2518 . . having coiled or bent continuous wire interlocking surface
- Y10T 24/252 . . . with stringer tape interwoven or knitted therewith
- Y10T 24/2521 . . . with stringer tape having specific weave or knit pattern
- Y10T 24/2523 . . . with core encircled by coils or bends
- Y10T 24/2525 . . . with mounting portion having structural formations complementary to stitching
- Y10T 24/2527 . . . Attached by stitching
- Y10T 24/2529 . . . . String or stringer tape having distinctive property [e.g., heat sensitive]
- Y10T 24/253 . . . with stringer tape having distinctive property [e.g., heat sensitive]
- Y10T 24/2532 . . having interlocking surface with continuous cross section
- Y10T 24/2534 . . . Opposed interlocking surface having dissimilar cross section
- Y10T 24/2536 . . having interlocking surface formed from single member with varying cross section
- Y10T 24/2538 . . . Opposed surface having dissimilar cross section
- Y10T 24/2539 . . Interlocking surface constructed from plural elements in series
- Y10T 24/2541 . . . having either noninterlocking element in, interrupted, or unequal length series
- Y10T 24/2543 . . . with element structural feature unrelated to interlocking or securing portion
- Y10T 24/2545 . . . Dissimilar opposed elements
- Y10T 24/2546 . . . Wire element
- Y10T 24/2548 . . . Preattached to mounting cord
- Y10T 24/255 . . . having interlocking portion with specific shape
- Y10T 24/2552 . . . . including symmetrical formations on opposite walls for engaging mating elements
- Y10T 24/2554 . . . . including complementary formations on opposite walls for engaging mating elements
- Y10T 24/2555 . . . . . Mating elements having reversed orientation of formations
- Y10T 24/2557 . . . having mounting portion with specific shape or structure
- Y10T 24/2559 . . . . including embracing jaws

- Y10T 24/2561 . . Slider having specific configuration, construction, adaptation, or material
- Y10T 24/2563 . . . including relatively movable spaced wings [i.e., restraining walls]
- Y10T 24/2564 . . . including converging channel and relatively movable separator island
- Y10T 24/2566 . . . including position locking-means attached thereto
- Y10T 24/2568 . . . . Protrusion on pull tab directly engaging interlocking surfaces
- Y10T 24/257 . . . . having surface engaging element shifted by reorientation of pull tab
- Y10T 24/2571 . . . . . Resilient or spring biased element
- Y10T 24/2573 . . . . . Selectively shifted by either of two pull tabs
- Y10T 24/2575 . . . . . with relatively movable link
- Y10T 24/2577 . . . . . Biased by distinct spring
- Y10T 24/2579 . . . . . having aperture cooperating with guide post
- Y10T 24/258 . . . including means preventing bunching of structure-to-be-secured or stringer
- Y10T 24/2582 . . . having specific contour or arrangement of converging channel, separator island, or wing
- Y10T 24/2584 . . . . Spaced segments of each wall of channel supported by different wings
- Y10T 24/2586 . . . including pull tab attaching means
- Y10T 24/2588 . . . including means for attaching components of slider together
- Y10T 24/2589 . . . with ornamental slider
- Y10T 24/2591 . . with means for concealing surfaces
- Y10T 24/2593 . . including complementary, aligning means attached to ends of interlocking surfaces
- Y10T 24/2595 . . . having specific mounting connection or reinforcing structure at connection
- Y10T 24/2596 . . including means attaching interlocking surfaces together
- Y10T 24/2598 . . including means for obstructing movement of slider
- Y10T 24/26 . . Slit closing means including guides on opposite edges of slit and slidable bridging component
- Y10T 24/262 . . with hand-actuated lever for shifting bridging component
- Y10T 24/264 . . including structure linking and allowing variations in separation between opposite-guide-contacting portions of component
- Y10T 24/266 . . having bridging components attached in series along carrying element
- Y10T 24/268 . . having separate, independently movable, bridging components
- Y10T 24/27 . . including readily dissociable fastener having numerous, protruding, unitary filaments randomly interlocking with, and simultaneously moving towards, mating structure [e.g., hook-loop type fastener]
- Y10T 24/2708 . . Combined with diverse fastener
- Y10T 24/2717 . . with distinct structure for sealing securement joint
- Y10T 24/2725 . . with feature facilitating, enhancing, or causing attachment of filament mounting surface to support therefor
- Y10T 24/2733 . . having filaments formed from continuous element interwoven or knitted into distinct, mounting surface fabric
- Y10T 24/2742 . . having filaments of varied shape or size on same mounting surface

- Y10T 24/275 . . with feature facilitating or causing attachment of filaments to mounting surface
- Y10T 24/2758 . . . Thermal or adhesive
- Y10T 24/2767 . . having several, repeating, interlocking formations along length of filaments
- Y10T 24/2775 . . having opposed structure formed from distinct filaments of diverse shape to those mating therewith
- Y10T 24/2783 . . having filaments constructed from coated, laminated, or composite material
- Y10T 24/2792 . . having mounting surface and filaments constructed from common piece of material
- Y10T 24/28 . Freight container to freight container fastener
- Y10T 24/29 . Drum or can spacer fastener
- Y10T 24/30 . Trim molding fastener
- Y10T 24/301 . . having externally threaded attaching means
- Y10T 24/302 . . . and laterally extending biasing appendage
- Y10T 24/303 . . having laterally extending biasing appendage
- Y10T 24/304 . . Resilient metal type
- Y10T 24/306 . . . Strip formed
- Y10T 24/307 . . . Sheet metal formed
- Y10T 24/308 . . . Wire formed
- Y10T 24/309 . . Plastic type
- Y10T 24/31 . Plural fasteners having intermediate flaccid connector
- Y10T 24/312 . . Chain connector
- Y10T 24/314 . . Elastic connector
- Y10T 24/316 . . . Strap connector
- Y10T 24/318 . . Strap connector
- Y10T 24/32 . having magnetic fastener
- Y10T 24/33 . having adhesive fastener
- Y10T 24/34 . Combined diverse multipart fasteners
- Y10T 24/3401 . . Buckle
- Y10T 24/3403 . . . and buckles
- Y10T 24/3404 . . . . having separate material adjustment means
- Y10T 24/3405 . . . . having separate disconnect means
- Y10T 24/3407 . . . . . Pivotal lever type
- Y10T 24/3408 . . . . having disconnect structure
- Y10T 24/3409 . . . . . Resilient cooperating means
- Y10T 24/3411 . . . . and pin
- Y10T 24/3412 . . . . Crossed belt accommodating
- Y10T 24/3413 . . . and clasp
- Y10T 24/3415 . . . and pin
- Y10T 24/3416 . . . and hook
- Y10T 24/3417 . . . . having disconnect means

|              |           |  |
|--------------|-----------|--|
| Y10T 24/3419 | . . . .   | having penetrating prong                                 |
| Y10T 24/342  | . . . .   | Buckle having plural receiving slots                     |
| Y10T 24/3421 | . . .     | including a button fastening element                     |
| Y10T 24/3423 | . . .     | and separable fastening means for attached fastener      |
| Y10T 24/3424 | . . . .   | Snap fastener  |
| Y10T 24/3425 | . . .     | having roller means                                      |
| Y10T 24/3427 | . .       | Clasp  |
| Y10T 24/3428 | . . .     | having pivoted members                                   |
| Y10T 24/3429 | . . . .   | Cam type member  |
| Y10T 24/3431 | . . . .   | Plural clasps  |
| Y10T 24/3432 | . . . . . | and toggle operator                                      |
| Y10T 24/3433 | . . . . . | Spring biased  |
| Y10T 24/3435 | . . . . . | Coil   |
| Y10T 24/3436 | . . . . . | and cam  |
| Y10T 24/3437 | . . . .   | Coil spring biased                                       |
| Y10T 24/3439 | . . .     | Plural clasps  |
| Y10T 24/344  | . . . .   | Resilient type clasp                                     |
| Y10T 24/3441 | . . . . . | and cam  |
| Y10T 24/3443 | . . . . . | Spring biased jaw  |
| Y10T 24/3444 | . . . . . | Circular work engageable                                 |
| Y10T 24/3445 | . . . . . | and pin attachment                                       |
| Y10T 24/3447 | . . . . . | and disconnect means                                     |
| Y10T 24/3448 | . . .     | including a button fastening element                     |
| Y10T 24/3449 | . . .     | and hook   |
| Y10T 24/3451 | . . . .   | having intermediate connector allowing movement          |
| Y10T 24/3452 | . . . . . | and adjustment means                                     |
| Y10T 24/3453 | . . . .   | having gripping configuration on clasp jaw               |
| Y10T 24/3455 | . . . . . | Penetrating type   |
| Y10T 24/3456 | . . . .   | having cam   |
| Y10T 24/3457 | . . . .   | having separable jaws                                    |
| Y10T 24/3459 | . . .     | and penetrating prong                                    |
| Y10T 24/346  | . . .     | and pin  |
| Y10T 24/3461 | . . . .   | having separate pin loss prevention means                |
| Y10T 24/3463 | . . . . . | Pin coextensive, coplanar, and contiguous with clasp jaw |
| Y10T 24/3464 | . . . .   | Pin coextensive, coplanar, and contiguous with clasp jaw |
| Y10T 24/3465 | . . . .   | Pin forms part of clasp jaw                              |
| Y10T 24/3467 | . .       | Pin  |
| Y10T 24/3468 | . . .     | and pin  |
| Y10T 24/3469 | . . . .   | and disconnect means                                     |
| Y10T 24/3471 | . . . . . | Hook and eye type  |

|              |   |
|--------------|---|
| Y10T 24/3472 | . . . . and hook  |
| Y10T 24/3473 | . . . . . having connector allowing movement                      |
| Y10T 24/3475 | . . . . . having intermediate connector allowing movement         |
| Y10T 24/3476 | . . . . and hook  |
| Y10T 24/3477 | . . . . . having intermediate connector allowing movement         |
| Y10T 24/3479 | . . . . . and adjustment means                                    |
| Y10T 24/348  | . . . . . Hook having locking means                               |
| Y10T 24/3481 | . . . . including a button fastening element                      |
| Y10T 24/3483 | . . . . and penetrating prong                                     |
| Y10T 24/3484 | . . . Hook  |
| Y10T 24/3485 | . . . . and hook  |
| Y10T 24/3487 | . . . . . having biasing spring                                   |
| Y10T 24/3488 | . . . . . Separately connected                                    |
| Y10T 24/3489 | . . . . . having securing means                                   |
| Y10T 24/3491 | . . . . . Sliding   |
| Y10T 24/3492 | . . . . . Snap type   |
| Y10T 24/3493 | . . . . . Pivoted   |
| Y10T 24/3495 | . . . . having penetrating prong                                  |
| Y10T 24/3496 | . . . . including a button fastening element                      |
| Y10T 24/3497 | . . . Button fastening element including another fastener element |
| Y10T 24/3499 | . . . Penetrating prong   |
| Y10T 24/35   | . . Interchangeable button loop and pin                           |
| Y10T 24/36   | . . Button with fastener  |
| Y10T 24/3602 | . . . Loss-preventing devices                                     |
| Y10T 24/3604 | . . . Adjustable  |
| Y10T 24/3606 | . . . Cloth shanks and covers                                     |
| Y10T 24/3609 | . . . Multiple attachment   |
| Y10T 24/3611 | . . . Deflecting prong or rivet                                   |
| Y10T 24/3613 | . . . . Anvil or plate  |
| Y10T 24/3615 | . . . . Integral  |
| Y10T 24/3617 | . . . Hinged leaf   |
| Y10T 24/3619 | . . . . Axially rotating  |
| Y10T 24/3621 | . . . . Double  |
| Y10T 24/3623 | . . . . Sliding   |
| Y10T 24/3626 | . . . Sliding bar   |
| Y10T 24/3628 | . . . Integral or rigid stud                                      |
| Y10T 24/363  | . . . . Bent sheet metal [integral]                               |
| Y10T 24/3632 | . . . Link  |
| Y10T 24/3634 | . . . . Integral rubber button, extendable shank                  |
| Y10T 24/3636 | . . . . Extendably connected                                      |

|              |           |   |
|--------------|-----------|---|
| Y10T 24/3638 | . . .     | Pivoted leaf  |
| Y10T 24/364  | . . .     | Releasably locked   |
| Y10T 24/3643 | . . .     | French cuff   |
| Y10T 24/3645 | . . .     | Tufting   |
| Y10T 24/3647 | . . .     | Integral piece  |
| Y10T 24/3649 | . .       | Pin attached  |
| Y10T 24/3651 | . .       | Separable   |
| Y10T 24/3653 | . . .     | Screw   |
| Y10T 24/3655 | . . .     | Spring  |
| Y10T 24/3657 | . . . .   | Resilient head  |
| Y10T 24/366  | . . . .   | Resilient socket  |
| Y10T 24/3662 | . . . .   | Rotating head   |
| Y10T 24/3664 | . . . .   | with operating devices  |
| Y10T 24/3666 | . .       | Separate thread bar   |
| Y10T 24/3668 | . .       | Spiral fastener   |
| Y10T 24/367  | . .       | Covers  |
| Y10T 24/3672 | . . .     | Metal or plastic caps   |
| Y10T 24/3674 | . .       | Pads  |
| Y10T 24/3677 | . .       | Flexible button   |
| Y10T 24/3679 | . .       | Swivel button   |
| Y10T 24/3681 | . .       | Tufting type  |
| Y10T 24/3683 | . .       | Button with cavity for friction grip fastener                                 |
| Y10T 24/3685 | . .       | Button with shank for friction grip fastener                                  |
| Y10T 24/3687 | . .       | Heat or adhesive secured type   |
| Y10T 24/3689 | . .       | Thread or wire through apertured button                                       |
| Y10T 24/3691 | . .       | Eye shank type button   |
| Y10T 24/3694 | . .       | Ornamental type   |
| Y10T 24/3696 | . .       | for cuff or collar  |
| Y10T 24/3698 | . .       | Fabric embracing  |
| Y10T 24/37   | . .       | Drawstring, laced-fastener, or separate essential cooperating device therefor |
| Y10T 24/3703 | . .       | Includes separate device for holding drawn portion of lacing                  |
| Y10T 24/3705 | . . .     | Device engages tie in lacing  |
| Y10T 24/3708 | . . . .   | and fully covers tie  |
| Y10T 24/3711 | . . .     | Device engages element or formation on lacing                                 |
| Y10T 24/3713 | . . .     | having relatively movable holding components or surfaces                      |
| Y10T 24/3716 | . . . .   | with pivotal connection therebetween  |
| Y10T 24/3718 | . . . .   | with integral resilient linking structure therebetween                        |
| Y10T 24/3721 | . . . . . | formed from wire  |
| Y10T 24/3724 | . . .     | having lacing wound thereabout or wedged therein                              |
| Y10T 24/3726 | . .       | with holding means fixedly mounted on lacing                                  |

|              |  |
|--------------|--|
| Y10T 24/3729 | . . . and forming lacing tips  |
| Y10T 24/3732 | . . Includes lacing holding structure within directing means therefor            |
| Y10T 24/3734 | . . having diverse shaped directing means for lacing                             |
| Y10T 24/3737 | . . having lacing directing means in particular pattern                          |
| Y10T 24/3739 | . . Includes lacing guiding roller within directing means                        |
| Y10T 24/3742 | . . having eyelet type directing means   |
| Y10T 24/3745 | . . . with permanently deformed mounting structure                               |
| Y10T 24/3747 | . . . . Mounting structure formed from different material than directing passage |
| Y10T 24/375  | . . having hook shaped directing means   |
| Y10T 24/3753 | . . . and movable component or surface for closing throat                        |
| Y10T 24/3755 | . . . Mounted by structure allowing bodily movement thereof                      |
| Y10T 24/3758 | . . . formed from wire   |
| Y10T 24/3761 | . . . with mounting structure formed from different material                     |
| Y10T 24/3763 | . . . with permanently deformed mounting structure                               |
| Y10T 24/3766 | . . . . Expanding stud   |
| Y10T 24/3768 | . . having loop or sleeve shaped directing means                                 |
| Y10T 24/3771 | . . . Entirely formed from flaccid material                                      |
| Y10T 24/3774 | . . . Mounted by structure allowing bodily movement thereof                      |
| Y10T 24/3776 | . . . formed from wire   |
| Y10T 24/3779 | . . . with permanently deformed mounting structure                               |
| Y10T 24/3782 | . . . . Loop or sleeve closed when mounted                                       |
| Y10T 24/3784 | . . . . Expanding stud   |
| Y10T 24/3787 | . . having elastic segment in lacing   |
| Y10T 24/3789 | . . having means covering tip of lacing  |
| Y10T 24/3792 | . . . Tasseled   |
| Y10T 24/3795 | . . . with plural components   |
| Y10T 24/3797 | . . . with permanently deformed mounting structure                               |
| Y10T 24/38   | . Strap cable or pipe button   |
| Y10T 24/39   | . Cord and rope holders  |
| Y10T 24/3902 | . . Chain  |
| Y10T 24/3904 | . . . Bead chain fasteners   |
| Y10T 24/3907 | . . Sheathed strand  |
| Y10T 24/3909 | . . Plural-strand cord or rope   |
| Y10T 24/3911 | . . Friction disk  |
| Y10T 24/3913 | . . Knot engaging  |
| Y10T 24/3916 | . . One-piece  |
| Y10T 24/3918 | . . . Wedge slot   |
| Y10T 24/392  | . . . Wire   |
| Y10T 24/3922 | . . . . Cord runs through center of coil   |

|              |         |  |
|--------------|---------|--|
| Y10T 24/3924 | . . .   | Sheet material                                       |
| Y10T 24/3927 | . . .   | Slack adjuster                                       |
| Y10T 24/3929 | . . .   | Rubber   |
| Y10T 24/3931 | . . .   | Wire   |
| Y10T 24/3933 | . . .   | Swagged, deformable                                  |
| Y10T 24/3936 | . .     | Pivoted part   |
| Y10T 24/3938 | . . .   | Lever tension  |
| Y10T 24/394  | . . .   | Cam lever  |
| Y10T 24/3942 | . . . . | Laterally shifted rope                               |
| Y10T 24/3944 | . . . . | Cam engaging or disengaging                          |
| Y10T 24/3947 | . . . . | Fixed and movable jaws, movable jaw pulled           |
| Y10T 24/3949 | . . . . | Link-connected parallel jaws                         |
| Y10T 24/3951 | . . . . | Dual cam   |
| Y10T 24/3953 | . . .   | Pivotal means with plate aperture                    |
| Y10T 24/3956 | . . .   | Jaws locked together by cam, wedge, lever, or screw  |
| Y10T 24/3958 | . .     | Screw clamp  |
| Y10T 24/396  | . . .   | Screw clamp with snubber                             |
| Y10T 24/3962 | . . .   | Tangential bolt                                      |
| Y10T 24/3964 | . . .   | J-shaped bolt  |
| Y10T 24/3967 | . . .   | Bolt perpendicular to cable axis                     |
| Y10T 24/3969 | . .     | Sliding part or wedge                                |
| Y10T 24/3971 | . . .   | Rope looped about movable member                     |
| Y10T 24/3973 | . . .   | Rope clamped between cone and socket                 |
| Y10T 24/3976 | . . .   | Sliding ball   |
| Y10T 24/3978 | . . .   | Screw actuated                                       |
| Y10T 24/398  | . .     | Bendable, ductible                                   |
| Y10T 24/3982 | . .     | Safety release                                       |
| Y10T 24/3984 | . .     | Alignable aperture and spring pressed moving element |
| Y10T 24/3987 | . .     | Loop, adjustable                                     |
| Y10T 24/3989 | . .     | Snubbers, cleats by dielectric loss                  |
| Y10T 24/3991 | . .     | Loop engaging  |
| Y10T 24/3993 | . .     | Ball or roller                                       |
| Y10T 24/3996 | . .     | Sliding wedge  |
| Y10T 24/3998 | . .     | Helical preform                                      |
| Y10T 24/40   | . .     | Buckles  |
| Y10T 24/4002 | . .     | Harness  |
| Y10T 24/4005 | . . .   | Combined buckles and snap hooks                      |
| Y10T 24/4007 | . . .   | Lock   |
| Y10T 24/4009 | . . . . | Key  |
| Y10T 24/4012 | . . .   | Clamping   |



|              |   |
|--------------|---|
| Y10T 24/4014 | . . . . One-piece                                     |
| Y10T 24/4016 | . . . . Pivoted part or lever                         |
| Y10T 24/4019 | . . . . Sliding part or wedge                         |
| Y10T 24/4021 | . . . Cross bails                                     |
| Y10T 24/4023 | . . . . Pivoted stud plate                            |
| Y10T 24/4026 | . . . . Rigid stud                                    |
| Y10T 24/4028 | . . . Penetrating tongue                              |
| Y10T 24/403  | . . . . Guarded                                       |
| Y10T 24/4033 | . . . . One-piece                                     |
| Y10T 24/4035 | . . . . Multiple                                      |
| Y10T 24/4037 | . . . . Pivoted                                       |
| Y10T 24/404  | . . . . . Lever actuated                              |
| Y10T 24/4042 | . . . . . Stud  |
| Y10T 24/4044 | . . . . Sliding part or wedge                         |
| Y10T 24/4047 | . . . Strap loops and attaching devices               |
| Y10T 24/4049 | . . . Loop shields                                    |
| Y10T 24/4051 | . . Garment shielded                                  |
| Y10T 24/4053 | . . Combined pressure bar and guard                   |
| Y10T 24/4056 | . . . Hook attached                                   |
| Y10T 24/4058 | . . Penetrating prong                                 |
| Y10T 24/406  | . . . One-piece                                       |
| Y10T 24/4063 | . . . . Hook attached                                 |
| Y10T 24/4065 | . . . Pivoted   |
| Y10T 24/4067 | . . . . Hook attached                                 |
| Y10T 24/407  | . . . Slide   |
| Y10T 24/4072 | . . Pivoted lever                                     |
| Y10T 24/4074 | . . . Hook attached                                   |
| Y10T 24/4077 | . . . Looped strap                                    |
| Y10T 24/4079 | . . Sliding part of wedge                             |
| Y10T 24/4081 | . . . Hook attached                                   |
| Y10T 24/4084 | . . . Looped strap                                    |
| Y10T 24/4086 | . . Looped strap                                      |
| Y10T 24/4088 | . . One-piece   |
| Y10T 24/4091 | . . . Hook attached                                   |
| Y10T 24/4093 | . . . Looped strap                                    |
| Y10T 24/4095 | . . Fabric covered                                    |
| Y10T 24/4098 | . . Ornamental and/or object supported                |
| Y10T 24/41   | . Pierced earring fastener                            |
| Y10T 24/42   | . Independent, headed, aperture pass-through fastener |

- Y10T 24/43 . Fastener with revolving component wrapping structure-to-be-secured about fastener
- Y10T 24/44 . Clasp, clip, support-clamp, or required component thereof
- Y10T 24/44009 . . Gripping member adapted for tool actuation or release
- Y10T 24/44017 . . with specific mounting means for attaching to rigid or semirigid supporting structure or structure-to-be-secured
- Y10T 24/44026 . . . for cooperating with aperture in supporting structure or structure-to-be-secured
- Y10T 24/44034 . . Dissociable gripping members
- Y10T 24/44043 . . . Channel and inserted bar
- Y10T 24/44051 . . . . having operator or locking means
- Y10T 24/4406 . . . . Resilient channel or bar
- Y10T 24/44068 . . having gripping member actuated by fluid force
- Y10T 24/44077 . . having inserted and receiving interlocking members connected by bendable, nonbiasing strap
- Y10T 24/44085 . . . Discrete flaccid strap
- Y10T 24/44094 . . . . with distinct means for preventing separation of members
- Y10T 24/44103 . . . . . Slidably mounted
- Y10T 24/44111 . . . . with separate flaccid flap or pocket for protecting structure-to-be-secured
- Y10T 24/4412 . . . . with separate, cavity-blocking gate on receiving member
- Y10T 24/44128 . . . . Resilient inserted or receiving member
- Y10T 24/44137 . . . . . Inserted or receiving member substantially covered or coated for protection or to promote gripping
- Y10T 24/44145 . . . . . Resilient inserted member
- Y10T 24/44154 . . . . . . having engaging face formed from nonmetallic material
- Y10T 24/44162 . . . . . . . having head and neck type engaging face
- Y10T 24/44171 . . . . . . . . having internal supporting or reinforcing element
- Y10T 24/44179 . . . . . . . . . Circular head or neck
- Y10T 24/44188 . . . . having wedge shaped, inserted and receiving members
- Y10T 24/44197 . . . . with specific means for attaching to flaccid strap or supporting strap
- Y10T 24/44205 . . . . . On the inserted member
- Y10T 24/44214 . . . . having necked button sliding along length of closed, variable width loop
- Y10T 24/44222 . . having flaccid gripping member
- Y10T 24/44231 . . . formed from elastic material
- Y10T 24/44239 . . Encircling gripping member including semirigid band and operator for tightening
- Y10T 24/44248 . . Encircling gripping member including semirigid band and means for adjusting girth
- Y10T 24/44256 . . with specifically shaped, nongripping, rigid structure for connecting independently operable clasps, clips, or support-clamps
- Y10T 24/44265 . . Gripping member face integral with or rigidly affixed to screw-driving portion

- Y10T 24/44274 . . . having either discrete flaccid or thin, nonbiasing, integral, connecting hinge
- Y10T 24/44282 . . . having equally spaced or continual gripping faces revolving about central axis
- Y10T 24/44291 . . . including pivoted gripping member
- Y10T 24/44299 . . . . Pivoted member also slides
- Y10T 24/44308 . . . . Tapered face
- Y10T 24/44316 . . . . Pivoting gripping member either supports or coacts with sliding engaging face
- Y10T 24/44325 . . . . having three or more pivotally connected gripping members
- Y10T 24/44333 . . . . having toggle operator for moving
- Y10T 24/44342 . . . . having rigid linking arm pivotally connected to each gripping member
- Y10T 24/4435 . . . . . with extended lever portion
- Y10T 24/44359 . . . . . . having lever end modified for attachment to support
- Y10T 24/44368 . . . . Pivoted gripping member applies camming force
- Y10T 24/44376 . . . . Spring or resiliently biased about pivot
- Y10T 24/44385 . . . . . Distinct spring
- Y10T 24/44393 . . . . . . Attached solely by spring
- Y10T 24/44402 . . . . . . with operator for moving pivoted member
- Y10T 24/4441 . . . . . . . Camming or wedging element
- Y10T 24/44419 . . . . . . . . Pivoted or rotated element
- Y10T 24/44427 . . . . . . with position locking-means for gripping members
- Y10T 24/44436 . . . . . . . including pivoted arm
- Y10T 24/44444 . . . . . . having specific surface material or irregularity on or along engaging face
- Y10T 24/44453 . . . . . . having specific handle structure
- Y10T 24/44462 . . . . . . Coil spring
- Y10T 24/4447 . . . . . . . having coil portion coaxial or parallel with pivotal axis
- Y10T 24/44479 . . . . . . Flat or leaf spring
- Y10T 24/44487 . . . . Closed by gravity or weight of structure-to-be-secured
- Y10T 24/44496 . . . . with operator means for moving pivoted member
- Y10T 24/44504 . . . . . Threaded cylindrical rod and mating cavity
- Y10T 24/44513 . . . . . Camming or wedging element
- Y10T 24/44521 . . . . . . Pivoted or rotated element
- Y10T 24/4453 . . . . with position locking-means for gripping members
- Y10T 24/44538 . . . . . Integral locking-means
- Y10T 24/44547 . . . . having inserted and receiving interlocking engaging faces
- Y10T 24/44556 . . . . . Resilient gripping member
- Y10T 24/44564 . . . . having specific surface material or irregularity on or along engaging face
- Y10T 24/44573 . . . including track or way guided and retained gripping member
- Y10T 24/44581 . . . . Biased by distinct spring
- Y10T 24/4459 . . . . with operator for moving guided member

|               |  |
|---------------|--|
| Y10T 24/44598 | . . . . Threaded cylindrical rod and mating cavity   |
| Y10T 24/44607 | . . . Track or way oblique to path of gripping member  |
| Y10T 24/44615 | . . . with position locking-means for gripping members   |
| Y10T 24/44624 | . . . . Integral locking-means   |
| Y10T 24/44632 | . . . with specific mounting means for attaching to flaccid supporting structure or structure-to-be-secured  |
| Y10T 24/44641 | . . having gripping member formed from, biased by, or mounted on resilient member  |
| Y10T 24/4465  | . . . Integrally combined, independently operable, diverse clasps, clips, or support-clamps  |
| Y10T 24/44658 | . . . with specific means for mounting to flaccid supporting structure or structure-to-be-secured  |
| Y10T 24/44667 | . . . . Mounting means made entirely from integral wire portion of resilient gripping member   |
| Y10T 24/44675 | . . . . . Wire coiled about flaccid supporting structure   |
| Y10T 24/44684 | . . . with operator for moving biased engaging face  |
| Y10T 24/44692 | . . . . Camming or wedging element   |
| Y10T 24/44701 | . . . . . Encircling sleeve type element   |
| Y10T 24/44709 | . . . . . Pivoted or rotated element   |
| Y10T 24/44718 | . . . . . Element pivots or rotates in plane parallel to plane bisecting opposed engaging faces  |
| Y10T 24/44726 | . . . . . Elongated element with pivot between cam and handle portions   |
| Y10T 24/44735 | . . . . . for moving engaging face of U-shaped gripping member   |
| Y10T 24/44744 | . . . with position locking-means for engaging faces   |
| Y10T 24/44752 | . . . . Integral locking-means   |
| Y10T 24/44761 | . . . . Pivoted lock member  |
| Y10T 24/44769 | . . . Opposed engaging faces on gripping member formed from single piece of resilient material   |
| Y10T 24/44778 | . . . . Piece totally forms clasp, clip, or support-clamp and has shaped, wirelike, or bandlike configuration with uniform cross section throughout its length |
| Y10T 24/44786 | . . . . . Opposed faces located in and bias towards common plane in nonuse position  |
| Y10T 24/44795 | . . . . . Resilient gripping member having tightly twisted portion   |
| Y10T 24/44803 | . . . . . Resilient gripping member having coiled portion  |
| Y10T 24/44812 | . . . . . Convolutions of coil form faces  |
| Y10T 24/44821 | . . . . . Relatively movable segments of resilient gripping member contact and cross in nonuse position  |
| Y10T 24/44829 | . . . . . Segments form opposed engaging faces   |
| Y10T 24/44838 | . . . . . having specific handle structure   |
| Y10T 24/44846 | . . . . . having specific handle structure   |
| Y10T 24/44855 | . . . . . Terminal end of resilient member having engagement or disengagement enhancing structural modifications   |

|               |           |  |
|---------------|-----------|--|
| Y10T 24/44863 | . . . . . | having specific surface irregularity on or along engaging face   |
| Y10T 24/44872 | . . . . . | having specific handle structure   |
| Y10T 24/4488  | . . . . . | Movably attached to gripping member  |
| Y10T 24/44889 | . . . . . | Interlocking faces   |
| Y10T 24/44897 | . . . . . | with reinforcing member  |
| Y10T 24/44906 | . . . . . | having specific surface irregularity on or along engaging face   |
| Y10T 24/44915 | . . . . . | Corrugated or toothed face   |
| Y10T 24/44923 | . . . . . | Clasp, clip, or support-clamp cut or shaped from a single sheet of resilient, uniformly thick, planar material |
| Y10T 24/44932 | . . . . . | having specific surface material or irregularity on or along engaging face                                     |
| Y10T 24/4494  | . . . . . | having specific handle structure   |
| Y10T 24/44949 | . . . . . | including resilient biasing wire   |
| Y10T 24/44957 | . . . . . | Coiled wire  |
| Y10T 24/44966 | . . . . . | having gripping member shifted by operator   |
| Y10T 24/44974 | . . . . . | Threaded cylindrical rod and mating cavity   |
| Y10T 24/44983 | . . . . . | formed from single rigid piece of material   |
| Y10T 24/44991 | . . . . . | having specific surface irregularity on or along engaging face   |
| Y10T 24/45    | . . . . . | Separable-fastener or required component thereof [e.g., projection and cavity to complete interlock]           |
| Y10T 24/45005 | . . . . . | with third detached member completing interlock [e.g., hook type]  |
| Y10T 24/4501  | . . . . . | Quick connect or release [e.g., spring and detent]   |
| Y10T 24/45016 | . . . . . | for jewelry  |
| Y10T 24/45021 | . . . . . | including eyelet [e.g., shoes]   |
| Y10T 24/45026 | . . . . . | for key holder   |
| Y10T 24/45031 | . . . . . | for tire chain, strap, etc. [e.g., rotatable or sliding spring gate]   |
| Y10T 24/45037 | . . . . . | for apparel and related accessories  |
| Y10T 24/45042 | . . . . . | Button, button related   |
| Y10T 24/45047 | . . . . . | Snap [e.g., key hole type]   |
| Y10T 24/45052 | . . . . . | Post and receiver [e.g., pin and slot]   |
| Y10T 24/45058 | . . . . . | Hook [e.g., within cavity]   |
| Y10T 24/45063 | . . . . . | Belt, strap, etc. [e.g., buckle or snap fastener]  |
| Y10T 24/45068 | . . . . . | Glove  |
| Y10T 24/45073 | . . . . . | Purse, wallet, etc.  |
| Y10T 24/45079 | . . . . . | Belt, strap, harness, etc.   |
| Y10T 24/45084 | . . . . . | for safety belt buckle, strap, harness, etc.   |
| Y10T 24/45089 | . . . . . | Sliding or rotating element  |
| Y10T 24/45094 | . . . . . | Element having key slot  |
| Y10T 24/45099 | . . . . . | Resilient element [e.g., snap type]  |
| Y10T 24/45105 | . . . . . | for upholstery, panel, trim strip, etc. [e.g., spring biased]  |
| Y10T 24/4511  | . . . . . | Link with pivoted gate   |

|               |  |
|---------------|--|
| Y10T 24/45115 | . . . Hook   |
| Y10T 24/4512  | . . . . Snap with spring bias [e.g., gate]   |
| Y10T 24/45126 | . . . . for connecting chains [e.g., opposed pivoted hook]   |
| Y10T 24/45131 | . . . . for heavy load bearing device [e.g., chain, rope, cable, etc.]   |
| Y10T 24/45136 | . . . . . Haim, harness, whiffletree, rein, etc.   |
| Y10T 24/45141 | . . . for chain, rope, cable, etc.   |
| Y10T 24/45147 | . . . . Coupler with sliding socket to complete interlock  |
| Y10T 24/45152 | . . Each mating member having similarly shaped, sized, and operated interlocking or intermeshable face                             |
| Y10T 24/45157 | . . . Zipper-type [e.g., slider]   |
| Y10T 24/45162 | . . . . for garment [e.g., with ribs and grooves interlocking elements]  |
| Y10T 24/45168 | . . . . for container [e.g., bag]  |
| Y10T 24/45173 | . . . Resilient element  |
| Y10T 24/45178 | . . . . Snap [e.g., identical elements]  |
| Y10T 24/45183 | . . . Clasp [e.g., spring type]  |
| Y10T 24/45188 | . . . . for jewelry [e.g., buckle type]  |
| Y10T 24/45194 | . . . . for belt or strap  |
| Y10T 24/45199 | . . . Hook   |
| Y10T 24/45204 | . . . . for belt, strap, etc. [e.g., with pivoted gate locking member]   |
| Y10T 24/45209 | . . . . for apparel  |
| Y10T 24/45215 | . . . Slot and tab or tongue   |
| Y10T 24/4522  | . . . Sliding or rotating element  |
| Y10T 24/45225 | . . including member having distinct formations and mating member selectively interlocking therewith                               |
| Y10T 24/4523  | . . . Hook   |
| Y10T 24/45236 | . . . . Multiple catch [e.g., with pivoted gate]   |
| Y10T 24/45241 | . . . Slot and tab or tongue   |
| Y10T 24/45246 | . . . . having teeth or serrations [e.g., sliding with respect to each other]  |
| Y10T 24/45251 | . . . Resilient element [e.g., with spring]  |
| Y10T 24/45257 | . . . . Snap with cavity   |
| Y10T 24/45262 | . . . Pin, post and receiver   |
| Y10T 24/45267 | . . . Notched clasp [e.g., with receiving slot]  |
| Y10T 24/45272 | . . . Projection passes through cavity then moves toward noninserted portion of its member to complete interlock [e.g., snap hook] |
| Y10T 24/45277 | . . . . Entire projection member forms loop or ring when interlocked   |
| Y10T 24/45283 | . . . . . Includes slidable gate closing entrance throat   |
| Y10T 24/45288 | . . . . Hook type projection member  |
| Y10T 24/45293 | . . . . . Plural hooks entering opposite sides of same cavity  |
| Y10T 24/45298 | . . . . . . Hooks formed solely from wire  |
| Y10T 24/45304 | . . . . . Noninserted portion of projection member includes movably connected gate for closing access throat                       |

|               |           |  |
|---------------|-----------|--|
| Y10T 24/45309 | . . . . . | Threaded gate  |
| Y10T 24/45314 | . . . . . | Revolvably mounted disc shaped gate  |
| Y10T 24/45319 | . . . . . | Pivotally connected gate   |
| Y10T 24/45325 | . . . . . | Gate swings transversely to plane of hook  |
| Y10T 24/4533  | . . . . . | Gate also slides relative to pivot   |
| Y10T 24/45335 | . . . . . | having means biasing gate about pivot  |
| Y10T 24/4534  | . . . . . | and position locking-means for gate  |
| Y10T 24/45346 | . . . . . | Includes distinct biasing spring   |
| Y10T 24/45351 | . . . . . | Coil type spring   |
| Y10T 24/45356 | . . . . . | Coiled about pivotal axis of gate  |
| Y10T 24/45361 | . . . . . | having position locking-means for gate   |
| Y10T 24/45366 | . . . . . | Locking-means pivotally connected  |
| Y10T 24/45372 | . . . . . | Locking-means slidably mounted   |
| Y10T 24/45377 | . . . . . | Gate closes when structure-to-be-secured is tensioned  |
| Y10T 24/45382 | . . . . . | Track or way guided gate   |
| Y10T 24/45387 | . . . . . | having means biasing gate  |
| Y10T 24/45393 | . . . . . | Guide of gate encircles shank  |
| Y10T 24/45398 | . . . . . | Cavity in shank forms track or way   |
| Y10T 24/45403 | . . . . . | with position locking-means for gate   |
| Y10T 24/45408 | . . . . . | Resilient, self-biased gate  |
| Y10T 24/45414 | . . . . . | with position locking-means for gate   |
| Y10T 24/45419 | . . . . . | Gate and hook formed from plastic  |
| Y10T 24/45424 | . . . . . | Gate and hook formed solely from wire  |
| Y10T 24/45429 | . . . . . | Gate and hook formed from single piece of sheet metal  |
| Y10T 24/45435 | . . . . . | Projection pivotally attached to shank or mounting structure   |
| Y10T 24/4544  | . . . . . | Projection slidably mounted to shank or mounting structure   |
| Y10T 24/45445 | . . . . . | Projection self-biased towards shank or mounting structure   |
| Y10T 24/4545  | . . . . . | and formed solely from wire  |
| Y10T 24/45455 | . . . . . | Cooperating with relatively stationary wire gate   |
| Y10T 24/45461 | . . . . . | Interlocking portion actuated or released responsive to preselected condition [e.g., heat, pressure] |
| Y10T 24/45466 | . . . . . | having electric or fluid powered, actuation or release, of interlock                                 |
| Y10T 24/45471 | . . . . . | Projection having movable connection between components thereof or variable configuration            |
| Y10T 24/45476 | . . . . . | with additional, similar projection for engaging different cavity                                    |
| Y10T 24/45482 | . . . . . | and operator therefor  |
| Y10T 24/45487 | . . . . . | including camming or wedging element on projection member  |
| Y10T 24/45492 | . . . . . | Pivotally attached element   |
| Y10T 24/45497 | . . . . . | including pivotal connection between projection components   |
| Y10T 24/45503 | . . . . . | Component slides relative to connection  |

|               |           |  |
|---------------|-----------|--|
| Y10T 24/45508 | . . . . . | and spring or resilient extension biasing about pivot  |
| Y10T 24/45513 | . . . . . | including slidably guided connection between nonself-biasing projection components                                   |
| Y10T 24/45518 | . . . . . | and distinct spring biasing component  |
| Y10T 24/45524 | . . . . . | including resiliently biased projection component or surface segment   |
| Y10T 24/45529 | . . . . . | Requiring manual force applied against bias to interlock or disengage  |
| Y10T 24/45534 | . . . . . | having connected leading edge and separated trailing arms  |
| Y10T 24/45539 | . . . . . | Cooperating with cavity having side walls and axially biased component capping end                                   |
| Y10T 24/45545 | . . . . . | forming total external surface of projection   |
| Y10T 24/4555  | . . . . . | and encircling hollow central area   |
| Y10T 24/45555 | . . . . . | having separate mounting means inserted into area  |
| Y10T 24/4556  | . . . . . | Plastic deformation of means or surface required for mounting  |
| Y10T 24/45565 | . . . . . | having separate mounting means encompassing cross section of projection  |
| Y10T 24/45571 | . . . . . | having dome-shaped head and expansion slit along side  |
| Y10T 24/45576 | . . . . . | and connected surface at tip of head   |
| Y10T 24/45581 | . . . . . | having inserted end formed by oppositely biased surface segments   |
| Y10T 24/45586 | . . . . . | Constructed from wire  |
| Y10T 24/45592 | . . . . . | having both resiliently biased and rigid components forming external surface of projection                           |
| Y10T 24/45597 | . . . . . | Projection member including noninserted spring for engaging and pushing against receiving member                     |
| Y10T 24/45602 | . . . . . | Receiving member includes either movable connection between interlocking components or variable configuration cavity |
| Y10T 24/45607 | . . . . . | with additional cavity for engaging different projection   |
| Y10T 24/45613 | . . . . . | having common means actuating or releasing interlocking components or surfaces                                       |
| Y10T 24/45618 | . . . . . | and interlocking with independently associated or dissociated projection members                                     |
| Y10T 24/45623 | . . . . . | and operator therefor  |
| Y10T 24/45628 | . . . . . | for plural, oppositely shifting, similar interlocking components or segments   |
| Y10T 24/45634 | . . . . . | Operator includes camming or wedging element   |
| Y10T 24/45639 | . . . . . | including pivotally connected element on receiving member  |
| Y10T 24/45644 | . . . . . | for shifting pivotally connected interlocking component  |
| Y10T 24/45649 | . . . . . | Element and component pivot about same axis  |
| Y10T 24/45654 | . . . . . | for shifting slidably connected and guided, nonself-biasing interlocking component                                   |
| Y10T 24/4566  | . . . . . | including slidably connected and guided element on receiving member  |



|               |           |  |
|---------------|-----------|--|
| Y10T 24/45665 | . . . . . | for shifting pivotally connected interlocking component  |
| Y10T 24/4567  | . . . . . | for shifting slidably connected and guided, nonself-biasing, interlocking component                        |
| Y10T 24/45675 | . . . . . | having pivotally connected interlocking component  |
| Y10T 24/45681 | . . . . . | Blocking removal of formation on projection from complementary formation on side wall of cavity            |
| Y10T 24/45686 | . . . . . | and position locking-means therefor  |
| Y10T 24/45691 | . . . . . | and relatively movable handle therefor   |
| Y10T 24/45696 | . . . . . | Requiring manual force thereon to interlock or disengage   |
| Y10T 24/45702 | . . . . . | Plural, oppositely shifting, similar interlocking components   |
| Y10T 24/45707 | . . . . . | having aperture therein alignable with parallel access opening   |
| Y10T 24/45712 | . . . . . | having interlocking portion thereof housed continuously within cavity                                      |
| Y10T 24/45717 | . . . . . | having cavity with side walls and axially biased component capping end                                     |
| Y10T 24/45723 | . . . . . | having slidably connected, nonself-biasing interlocking component  |
| Y10T 24/45728 | . . . . . | Blocking removal of formation on projection from complementary formation on side wall of cavity            |
| Y10T 24/45733 | . . . . . | and position locking-means therefor  |
| Y10T 24/45738 | . . . . . | and relatively movable handle therefor   |
| Y10T 24/45743 | . . . . . | Requiring manual force thereon to interlock or disengage   |
| Y10T 24/45749 | . . . . . | Plural, oppositely shifting, similar interlocking components   |
| Y10T 24/45754 | . . . . . | having closed aperture therethrough alignable with parallel access opening                                 |
| Y10T 24/45759 | . . . . . | having flaccid component defining access opening of cavity   |
| Y10T 24/45764 | . . . . . | Component formed solely by flaccid cord  |
| Y10T 24/4577  | . . . . . | with nonflaccid component  |
| Y10T 24/45775 | . . . . . | having resiliently biased interlocking component or segment  |
| Y10T 24/4578  | . . . . . | Cavity or projection rotates about axis of cavity to dissociate  |
| Y10T 24/45785 | . . . . . | Requiring manual force applied against bias to interlock or disengage                                      |
| Y10T 24/45791 | . . . . . | and partially blocking separate, nonresilient access opening of cavity                                     |
| Y10T 24/45796 | . . . . . | and closed elongated access opening for guiding transverse projection travel after insertion               |
| Y10T 24/45801 | . . . . . | Nonresilient walls define opening  |
| Y10T 24/45806 | . . . . . | formed from wire   |
| Y10T 24/45812 | . . . . . | and access opening with gapped perimeter for allowing movement of noninserted projection support therepast |
| Y10T 24/45817 | . . . . . | Cavity constructed solely from wire  |
| Y10T 24/45822 | . . . . . | Partially blocking separate, nonresilient, access opening of cavity  |
| Y10T 24/45827 | . . . . . | and bodily shifted into or out of interlock location by manual force thereon                               |

|               |           |   |
|---------------|-----------|---|
| Y10T 24/45832 | . . . . . | formed from wire  |
| Y10T 24/45838 | . . . . . | having curved or bent engaging section conforming to contour of projection                                    |
| Y10T 24/45843 | . . . . . | Similar, distinct sections  |
| Y10T 24/45848 | . . . . . | having distinct sections engaging projection at spaced points   |
| Y10T 24/45853 | . . . . . | including separate, nonprojection-engaging spring for biasing   |
| Y10T 24/45859 | . . . . . | Biased component or segment entirely formed from wire   |
| Y10T 24/45864 | . . . . . | having portion of cavity deformed during mounting   |
| Y10T 24/45869 | . . . . . | and cooperating with separate mounting component  |
| Y10T 24/45874 | . . . . . | having axially extending expansion slit along side of cavity  |
| Y10T 24/4588  | . . . . . | Means for mounting projection or cavity portion   |
| Y10T 24/45885 | . . . . . | Allows bodily movement facilitating interlock   |
| Y10T 24/4589  | . . . . . | About pivotal connection  |
| Y10T 24/45895 | . . . . . | Includes resilient component separate from portion  |
| Y10T 24/45901 | . . . . . | Allows relocation of portion  |
| Y10T 24/45906 | . . . . . | having component of means permanently deformed during mounting operation                                      |
| Y10T 24/45911 | . . . . . | and formed from or fixedly attached to projection or cavity portion   |
| Y10T 24/45916 | . . . . . | Cooperates with detached component of means   |
| Y10T 24/45921 | . . . . . | having shape facilitating impaling of mounting surface  |
| Y10T 24/45927 | . . . . . | and inserted into or through cavity or projection   |
| Y10T 24/45932 | . . . . . | and encircling cavity or projection   |
| Y10T 24/45937 | . . . . . | Consisting of thermally fusible substance   |
| Y10T 24/45942 | . . . . . | having threaded formation   |
| Y10T 24/45948 | . . . . . | having specific structure for cooperating with stitching  |
| Y10T 24/45953 | . . . . . | having shape facilitating impaling of mounting surface  |
| Y10T 24/45958 | . . . . . | Plural distinct cavities or projections   |
| Y10T 24/45963 | . . . . . | Hook type   |
| Y10T 24/45969 | . . . . . | Hook-shaped projection member passing through cavity  |
| Y10T 24/45974 | . . . . . | formed from single piece of sheet metal   |
| Y10T 24/45979 | . . . . . | formed solely from wire   |
| Y10T 24/45984 | . . . . . | Cavity having specific shape  |
| Y10T 24/4599  | . . . . . | including closed elongated access opening for guiding transverse projection travel after insertion            |
| Y10T 24/45995 | . . . . . | having access opening with gapped perimeter for allowing movement of noninserted projection support therepast |
| Y10T 24/46    | . . . . . | Pin or separate essential cooperating device therefor   |
| Y10T 24/4602  | . . . . . | with separately operable, manually releasable, nonpenetrating means for mounting [e.g., drapery hook]         |
| Y10T 24/4604  | . . . . . | having distinct guiding, holding, or protecting means for penetrated portion                                  |
| Y10T 24/4605  | . . . . . | Means detachable from or flaccidly connected to pin [e.g., hatpin type]                                       |

|              |           |  |
|--------------|-----------|--|
| Y10T 24/4607 | . . . .   | for pin having plural penetrating portions   |
| Y10T 24/4609 | . . . .   | including relatively movable guiding, holding, or protecting components or surfaces                                |
| Y10T 24/4611 | . . . . . | having operator for moving holding component or surface  |
| Y10T 24/4613 | . . . . . | Moves pivoting holding component   |
| Y10T 24/4614 | . . . . . | Moves slidably guided, nonself-biasing, holding component  |
| Y10T 24/4616 | . . . . . | having pierceable [e.g., cork] or naturally resilient [e.g., rubber] surfaces                                      |
| Y10T 24/4618 | . . . . . | with pivotal connection therebetween   |
| Y10T 24/462  | . . . . . | with slidable connection between nonself-biasing components  |
| Y10T 24/4621 | . . . . . | having resiliently biased component or surface   |
| Y10T 24/4623 | . . . . . | Coiled about longitudinal axis of held portion   |
| Y10T 24/4625 | . . . . . | and aperture therein alignable with another spaced aperture of means   |
| Y10T 24/4627 | . . . . . | and nonresilient structure for guiding portion thereto   |
| Y10T 24/4629 | . . . .   | including structure for cooperating with formation [e.g., cavity] formed on penetrating portion                    |
| Y10T 24/463  | . . .     | for pin having plural penetrating portions   |
| Y10T 24/4632 | . . . .   | Each independently movable towards and into cooperation with means   |
| Y10T 24/4634 | . . .     | including relatively movable guiding, holding, or protecting components or surfaces                                |
| Y10T 24/4636 | . . . .   | with connection allowing component to revolve about axis of held penetrating portion                               |
| Y10T 24/4638 | . . . .   | with pivotal connection therebetween   |
| Y10T 24/4639 | . . . . . | having position locking means therefor   |
| Y10T 24/4641 | . . . . . | Spring or resiliently biased   |
| Y10T 24/4643 | . . . . . | with slidable connection between nonself-biasing components  |
| Y10T 24/4645 | . . . . . | Component slides parallel to axis of held penetrating portion  |
| Y10T 24/4646 | . . . . . | Means engages formation formed on penetrating portion  |
| Y10T 24/4648 | . . . . . | having nonresilient and resilient components   |
| Y10T 24/465  | . . . . . | Means formed from single resilient wire  |
| Y10T 24/4652 | . . . . . | Means formed from resilient sheet metal  |
| Y10T 24/4654 | . . .     | with independent, spaced, intermediate connections, or formations [e.g., coils], about which portion or means move |
| Y10T 24/4655 | . . . .   | Includes slidable connection   |
| Y10T 24/4657 | . . .     | with pivotal connection between penetrating portion and means  |
| Y10T 24/4659 | . . . .   | Connection also permits sliding movement   |
| Y10T 24/4661 | . . . .   | Resiliently biased about connection  |
| Y10T 24/4663 | . . .     | with slidable connection intermediate penetrating portion and means  |
| Y10T 24/4664 | . . .     | having resilient bridging structure between portion and means  |

|              |  |
|--------------|--|
| Y10T 24/4666 | . . . . Means includes structure for cooperating with formation [e.g., cavity] formed on portion         |
| Y10T 24/4668 | . . . . and penetrating portion formed from wire   |
| Y10T 24/467  | . . . . . Bridging structure includes elongated nonwire element  |
| Y10T 24/4671 | . . . . . Wire also forms coiled bridging structure about which portion moves                            |
| Y10T 24/4673 | . . . . . including distinct device for cooperating with coil  |
| Y10T 24/4675 | . . . . . having means also formed from same wire  |
| Y10T 24/4677 | . . with cavity for guiding structure-to-be-secured towards penetrating portion [e.g., stocking support] |
| Y10T 24/4679 | . . having penetrating portion retractable or of changeable length                                       |
| Y10T 24/468  | . . having interconnected distinct penetrating portions  |
| Y10T 24/4682 | . . . Connection allows movement therebetween  |
| Y10T 24/4684 | . . . . Slidable connection  |
| Y10T 24/4686 | . . . . Resilient connection   |
| Y10T 24/4688 | . . . formed from common wire  |
| Y10T 24/4689 | . . . . and pointing in same direction   |
| Y10T 24/4691 | . . Penetrating portion includes relatively movable structure for resisting extraction                   |
| Y10T 24/4693 | . . having specific wire penetrating portion   |
| Y10T 24/4695 | . . . Wire curved or bent  |
| Y10T 24/4696 | . . having distinct head structure   |
| Y10T 24/4698 | . . . Movably connected to penetrating portion   |
| Y10T 24/47   | . Strap-end-attaching devices  |
| Y10T 24/4709 | . . Bendable sheet material  |
| Y10T 24/4718 | . . Watch pintle connected   |
| Y10T 24/4727 | . . Webbing to tube [lawn chair]   |
| Y10T 24/4736 | . . Buckle connected   |
| Y10T 24/4745 | . . End clasp  |
| Y10T 24/4755 | . . Hook   |
| Y10T 24/4764 | . . Ring-loop  |
| Y10T 24/4773 | . . Cargo tiedown  |
| Y10T 24/4782 | . . Watch strap  |
| Y10T 24/4791 | . . Enlarged end epoxy   |
| Y10T 24/48   | . Pivoted edge stays   |
| Y10T 24/49   | . Fastener destructively secured by reshaping distortion force [e.g., ductile fastener]                  |
| Y10T 24/492  | . . Distorted structure having shape facilitating impaling   |
| Y10T 24/493  | . . . and distinct fastener structure cooperating with impaled structure                                 |
| Y10T 24/495  | . . . . Detached cooperating structure   |
| Y10T 24/497  | . . . including plural impaling elements   |

- Y10T 24/498 . . . . Elements form single aperture [e.g., split shank type]
- Y10T 24/50 . Readily interlocking, two-part fastener requiring either destructive or tool disengagement
- Y10T 24/505 . . including additional fastener structure linking parts
- Y10T 24/51 . Hanger on portable article support for manual attachment thereof to overhead support [e.g., drapery hook]

### **Former US Class 29 Series**

- |                   |   |
|-------------------|---|
| <b>Y10T 29/00</b> | <b>Metal working</b>                                  |
| Y10T 29/10        | . Battery-grid making                                 |
| Y10T 29/11        | . Bias [i.e. , helically] cutting of tubular stock    |
| Y10T 29/1106      | . . including orbital cutter                          |
| Y10T 29/1113      | . . . within stock support                            |
| Y10T 29/1119      | . . . with orbiting strip accumulator                 |
| Y10T 29/1125      | . . including means to inflate stock                  |
| Y10T 29/1131      | . . with means to feed stock along support or mandrel |
| Y10T 29/1138      | . . . Single means produces compound motion           |
| Y10T 29/1144      | . . . . Endless belt drive means                      |
| Y10T 29/115       | . . . Axially   |
| Y10T 29/1156      | . . . Rotatably                                       |
| Y10T 29/1163      | . . with means to rotate and store stock supply       |
| Y10T 29/1169      | . . . Axis of rotation parallel to support or mandrel |
| Y10T 29/1175      | . . with means for arcuate shift of mandrel           |
| Y10T 29/1181      | . . including means to handle produced strip or web   |
| Y10T 29/1188      | . . . with common adjustment for cutter               |
| Y10T 29/1194      | . . Method  |
| Y10T 29/12        | . Buckle making                                       |
| Y10T 29/13        | . Button-fastener making                              |
| Y10T 29/14        | . Shredding metal or metal wool article making        |
| Y10T 29/142       | . . Metal wool making                                 |
| Y10T 29/143       | . . . Shaving or longitudinal cutting                 |
| Y10T 29/145       | . . . . Soap-pad making                               |
| Y10T 29/147       | . . Metal wool bundling                               |
| Y10T 29/148       | . . . Soap-pad making                                 |
| Y10T 29/15        | . Cord heddle making                                  |
| Y10T 29/16        | . Cotter-pin making                                   |
| Y10T 29/17        | . Crankshaft making apparatus                         |
| Y10T 29/18        | . Expanded metal making                               |
| Y10T 29/185       | . . by use of reciprocating perforator                |
| Y10T 29/19        | . Eyebolt or hook making                              |

|             |   |
|-------------|---|
| Y10T 29/20  | . Fence barb making   |
| Y10T 29/203 | . . by use of reciprocating cutter or die                             |
| Y10T 29/207 | . . by use of rotary cutter or die                                    |
| Y10T 29/21  | . Finger-ring forming or sizing                                       |
| Y10T 29/22  | . Fishhook making   |
| Y10T 29/23  | . Gem and jewel setting   |
| Y10T 29/24  | . Hinge making or assembling  |
| Y10T 29/25  | . Lacing-stud making  |
| Y10T 29/26  | . Paper-fastener making   |
| Y10T 29/27  | . Plow or cultivator iron making                                      |
| Y10T 29/28  | . Puddlers balls making   |
| Y10T 29/29  | . Railway-chair making  |
| Y10T 29/30  | . Foil or other thin sheet-metal making or treating                   |
| Y10T 29/301 | . . Method  |
| Y10T 29/302 | . . . Clad or other composite foil or thin metal making               |
| Y10T 29/303 | . . . with assembling or disassembling of a pack                      |
| Y10T 29/304 | . . . . Using transitory solid cover material                         |
| Y10T 29/305 | . . . . including bond prevention treatment                           |
| Y10T 29/306 | . . . . Disassembling of a pack                                       |
| Y10T 29/307 | . . . by shaving or longitudinal cutting                              |
| Y10T 29/308 | . . . Using transitory material                                       |
| Y10T 29/309 | . . Means for opening or separating a pack                            |
| Y10T 29/31  | . Spectacle-frame making  |
| Y10T 29/32  | . Spiral cutting of flat stock  |
| Y10T 29/33  | . Stereotype-plate finishing  |
| Y10T 29/34  | . Means for forming clench-tongue [eg, for tieband]                   |
| Y10T 29/35  | . Tire upsetting, with cutting, punching, etc.                        |
| Y10T 29/36  | . toothed-cylinder making apparatus [e.g. , texture working cylinder] |
| Y10T 29/37  | . Impeller making apparatus   |
| Y10T 29/38  | . Type finishing and grooving   |
| Y10T 29/39  | . Venetian blind assembling   |
| Y10T 29/40  | . Umbrella-frame making   |
| Y10T 29/41  | . Barrier layer or semiconductor device making                        |
| Y10T 29/413 | . . Barrier layer device making                                       |
| Y10T 29/417 | . . . Electrolytic device making [e.g., capacitor]                    |
| Y10T 29/42  | . Piezoelectric device making   |
| Y10T 29/43  | . Electric condenser making   |
| Y10T 29/435 | . . Solid dielectric type   |
| Y10T 29/44  | . Filing  |
| Y10T 29/442 | . . of key article  |

|               |  |
|---------------|--|
| Y10T 29/444   | . . Continuous band type                                 |
| Y10T 29/446   | . . Reciprocating type                                   |
| Y10T 29/448   | . . File-blank stripper                                  |
| Y10T 29/45    | . Scale remover or preventor                             |
| Y10T 29/4506  | . . for hollow workpiece                                 |
| Y10T 29/4511  | . . . Interior surface                                   |
| Y10T 29/4517  | . . Rolling deformation or deflection                    |
| Y10T 29/4522  | . . . for wire or rod                                    |
| Y10T 29/4528  | . . with rotary head                                     |
| Y10T 29/4533  | . . Fluid impingement                                    |
| Y10T 29/4539  | . . . with heater  |
| Y10T 29/4544  | . . . Liquid jet   |
| Y10T 29/455   | . . . Airblast   |
| Y10T 29/4556  | . . Chainer  |
| Y10T 29/4561  | . . Scraper or scalper                                   |
| Y10T 29/4567  | . . Brush type   |
| Y10T 29/4572  | . . Mechanically powered operator                        |
| Y10T 29/4578  | . . . Tack or needle type                                |
| Y10T 29/4583  | . . . Hammer   |
| Y10T 29/4589  | . . . Blade or chisel                                    |
| Y10T 29/4594  | . . Hand tool  |
| Y10T 29/46    | . Burning in, wearing in, or oil burnishing              |
| Y10T 29/47    | . Burnishing   |
| Y10T 29/471   | . . of water laid fibrous article [e.g., paper]          |
| Y10T 29/473   | . . . Heated burnishing member                           |
| Y10T 29/474   | . . . . Burnishing tool reciprocates across work surface |
| Y10T 29/476   | . . Continuous feed                                      |
| Y10T 29/477   | . . of gear article                                      |
| Y10T 29/479   | . . by shot peening or blasting                          |
| Y10T 29/48    | . Upholstered article making                             |
| Y10T 29/481   | . . Method   |
| Y10T 29/482   | . . Tufting  |
| Y10T 29/483   | . . . with means to clench fastener                      |
| Y10T 29/484   | . . . with means to insert guide pin or fastener         |
| Y10T 29/486   | . . Cover stretching                                     |
| Y10T 29/487   | . . Edge-roll forming                                    |
| Y10T 29/488   | . . form or holder                                       |
| Y10T 29/489   | . . . with follower                                      |
| Y10T 29/49    | . Method of mechanical manufacture                       |
| Y10T 29/49002 | . . Electrical device making                             |

|               |               |   |
|---------------|---------------|---|
| Y10T 29/49004 | . . .         | including measuring or testing of device or component part              |
| Y10T 29/49005 | . . .         | Acoustic transducer   |
| Y10T 29/49007 | . . .         | Indicating transducer   |
| Y10T 29/49009 | . . .         | Dynamoelectric machine  |
| Y10T 29/49011 | . . . .       | Commutator or slip ring assembly  |
| Y10T 29/49012 | . . . .       | Rotor   |
| Y10T 29/49014 | . . .         | Superconductor  |
| Y10T 29/49016 | . . .         | Antenna or wave energy "plumbing" making                                |
| Y10T 29/49018 | . . . .       | with other electrical component   |
| Y10T 29/4902  | . . .         | Electromagnet, transformer or inductor                                  |
| Y10T 29/49021 | . . . .       | Magnetic recording reproducing transducer [e.g., tape head, core, etc.] |
| Y10T 29/49023 | . . . . .     | including disassembly step  |
| Y10T 29/49025 | . . . . .     | Making disc drive   |
| Y10T 29/49027 | . . . . .     | Mounting preformed head/core onto other structure                       |
| Y10T 29/49028 | . . . . .     | Mounting multitrack head  |
| Y10T 29/4903  | . . . . .     | with bonding  |
| Y10T 29/49032 | . . . . .     | Fabricating head structure or component thereof                         |
| Y10T 29/49034 | . . . . .     | Treating to affect magnetic properties                                  |
| Y10T 29/49036 | . . . . .     | including measuring or testing  |
| Y10T 29/49037 | . . . . . .   | Using reference point/surface to facilitate measuring                   |
| Y10T 29/49039 | . . . . . .   | with dual gap materials   |
| Y10T 29/49041 | . . . . . .   | with significant slider/housing shaping or treating                     |
| Y10T 29/49043 | . . . . . .   | Depositing magnetic layer or coating                                    |
| Y10T 29/49044 | . . . . . . . | Plural magnetic deposition layers                                       |
| Y10T 29/49046 | . . . . . . . | with etching or machining of magnetic material                          |
| Y10T 29/49048 | . . . . . . . | Machining magnetic material [e.g., grinding, etching, polishing]        |
| Y10T 29/4905  | . . . . . . . | Employing workholding means   |
| Y10T 29/49052 | . . . . . . . | by etching  |
| Y10T 29/49053 | . . . . . . . | Multitrack heads having integral holding means                          |
| Y10T 29/49055 | . . . . . . . | with bond/laminating preformed parts, at least two magnetic             |
| Y10T 29/49057 | . . . . . . . | Using glass bonding material  |
| Y10T 29/49059 | . . . . . . . | with work positioning means   |
| Y10T 29/4906  | . . . . . . . | Providing winding   |
| Y10T 29/49062 | . . . . . . . | Multilayered winding  |
| Y10T 29/49064 | . . . . . . . | by coating  |
| Y10T 29/49066 | . . . . . . . | Preformed winding   |
| Y10T 29/49067 | . . . . . . . | Specified diverse magnetic materials                                    |
| Y10T 29/49069 | . . . . .     | Data storage inductor or core   |
| Y10T 29/49071 | . . . . .     | by winding or coiling   |



|               |           |   |
|---------------|-----------|---|
| Y10T 29/49073 | . . . .   | by assembling coil and core                                       |
| Y10T 29/49075 | . . . .   | including permanent magnet or core                                |
| Y10T 29/49076 | . . . . . | From comminuted material  |
| Y10T 29/49078 | . . . . . | Laminated   |
| Y10T 29/4908  | . . . . . | Acoustic transducer   |
| Y10T 29/49082 | . . . .   | Resistor making   |
| Y10T 29/49083 | . . . .   | Heater type   |
| Y10T 29/49085 | . . . .   | Thermally variable  |
| Y10T 29/49087 | . . . .   | with envelope or housing  |
| Y10T 29/49089 | . . . . . | Filling with powdered insulation                                  |
| Y10T 29/49091 | . . . . . | with direct compression of powdered insulation                    |
| Y10T 29/49092 | . . . . . | Powdering the insulation  |
| Y10T 29/49094 | . . . . . | by oxidation  |
| Y10T 29/49096 | . . . . . | with winding  |
| Y10T 29/49098 | . . . . . | Applying terminal   |
| Y10T 29/49099 | . . . .   | Coating resistive material on a base                              |
| Y10T 29/49101 | . . . .   | Applying terminal   |
| Y10T 29/49103 | . . . .   | Strain gauge making   |
| Y10T 29/49105 | . . . .   | Switch making   |
| Y10T 29/49107 | . . . .   | Fuse making   |
| Y10T 29/49108 | . . . .   | Electric battery cell making                                      |
| Y10T 29/4911  | . . . .   | including sealing   |
| Y10T 29/49112 | . . . .   | including laminating of indefinite length material                |
| Y10T 29/49114 | . . . .   | including adhesively bonding                                      |
| Y10T 29/49115 | . . . .   | including coating or impregnating                                 |
| Y10T 29/49117 | . . . .   | Conductor or circuit manufacturing                                |
| Y10T 29/49119 | . . . .   | Brush   |
| Y10T 29/49121 | . . . .   | Beam lead frame or beam lead device                               |
| Y10T 29/49123 | . . . .   | Co-axial cable  |
| Y10T 29/49124 | . . . .   | On flat or curved insulated base, e.g., printed circuit, etc.     |
| Y10T 29/49126 | . . . . . | Assembling bases  |
| Y10T 29/49128 | . . . . . | Assembling formed circuit to base                                 |
| Y10T 29/4913  | . . . . . | Assembling to base an electrical component, e.g., capacitor, etc. |
| Y10T 29/49131 | . . . . . | by utilizing optical sighting device                              |
| Y10T 29/49133 | . . . . . | with component orienting  |
| Y10T 29/49135 | . . . . . | and shaping, e.g., cutting or bending, etc.                       |
| Y10T 29/49137 | . . . . . | Different components  |
| Y10T 29/49139 | . . . . . | by inserting component lead or terminal into base aperture        |
| Y10T 29/4914  | . . . . . | with deforming of lead or terminal                                |
| Y10T 29/49142 | . . . . . | including metal fusion  |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49144 | . . . . . | by metal fusion   |
| Y10T 29/49146 | . . . . . | with encapsulating, e.g., potting, etc.                                     |
| Y10T 29/49147 | . . . . . | Assembling terminal to base   |
| Y10T 29/49149 | . . . . . | by metal fusion bonding   |
| Y10T 29/49151 | . . . . . | by deforming or shaping   |
| Y10T 29/49153 | . . . . . | with shaping or forcing terminal into base aperture                         |
| Y10T 29/49155 | . . . . . | Manufacturing circuit on or in base   |
| Y10T 29/49156 | . . . . . | with selective destruction of conductive paths                              |
| Y10T 29/49158 | . . . . . | with molding of insulated base  |
| Y10T 29/4916  | . . . . . | Simultaneous circuit manufacturing  |
| Y10T 29/49162 | . . . . . | by using wire as conductive path  |
| Y10T 29/49163 | . . . . . | with sintering of base  |
| Y10T 29/49165 | . . . . . | by forming conductive walled aperture in base                               |
| Y10T 29/49167 | . . . . . | with deforming of conductive path   |
| Y10T 29/49169 | . . . . . | Assembling electrical component directly to terminal or elongated conductor |
| Y10T 29/49171 | . . . . . | with encapsulating  |
| Y10T 29/49172 | . . . . . | by molding of insulating material   |
| Y10T 29/49174 | . . . . . | Assembling terminal to elongated conductor                                  |
| Y10T 29/49176 | . . . . . | with molding of electrically insulating material                            |
| Y10T 29/49178 | . . . . . | by shrinking of cover   |
| Y10T 29/49179 | . . . . . | by metal fusion bonding   |
| Y10T 29/49181 | . . . . . | by deforming  |
| Y10T 29/49183 | . . . . . | of ferrule about conductor and terminal                                     |
| Y10T 29/49185 | . . . . . | of terminal   |
| Y10T 29/49187 | . . . . . | with forming eyelet from elongated conductor                                |
| Y10T 29/49188 | . . . . . | with penetrating portion  |
| Y10T 29/4919  | . . . . . | Through insulation  |
| Y10T 29/49192 | . . . . . | with insulation removal   |
| Y10T 29/49194 | . . . . . | Assembling elongated conductors, e.g., splicing, etc.                       |
| Y10T 29/49195 | . . . . . | with end-to-end orienting   |
| Y10T 29/49197 | . . . . . | including fluid evacuating or pressurizing                                  |
| Y10T 29/49199 | . . . . . | including deforming of joining bridge                                       |
| Y10T 29/49201 | . . . . . | with overlapping orienting  |
| Y10T 29/49202 | . . . . . | including oppositely facing end orienting                                   |
| Y10T 29/49204 | . . . . . | Contact or terminal manufacturing   |
| Y10T 29/49206 | . . . . . | by powder metallurgy  |
| Y10T 29/49208 | . . . . . | by assembling plural parts  |
| Y10T 29/4921  | . . . . . | with bonding  |
| Y10T 29/49211 | . . . . . | of fused material   |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49213 | . . . . . | Metal   |
| Y10T 29/49215 | . . . . . | by impregnating a porous mass                             |
| Y10T 29/49217 | . . . . . | by elastic joining  |
| Y10T 29/49218 | . . . . . | with deforming  |
| Y10T 29/4922  | . . . . . | with molding of insulation                                |
| Y10T 29/49222 | . . . . . | forming array of contacts or terminals                    |
| Y10T 29/49224 | . . . . . | with coating  |
| Y10T 29/49226 | . . .     | Electret making   |
| Y10T 29/49227 | . . .     | Insulator making  |
| Y10T 29/49229 | . .       | Prime mover or fluid pump making                          |
| Y10T 29/49231 | . . .     | I.C. [internal combustion] engine making                  |
| Y10T 29/49233 | . . . .   | Repairing, converting, servicing or salvaging             |
| Y10T 29/49234 | . . . .   | Rotary or radial engine making                            |
| Y10T 29/49236 | . . .     | Fluid pump or compressor making                           |
| Y10T 29/49238 | . . . .   | Repairing, converting, servicing or salvaging             |
| Y10T 29/4924  | . . . .   | Scroll or peristaltic type                                |
| Y10T 29/49242 | . . . .   | Screw or gear type, e.g., Moineau type                    |
| Y10T 29/49243 | . . . .   | Centrifugal type  |
| Y10T 29/49245 | . . . .   | Vane type or other rotary, e.g., fan                      |
| Y10T 29/49247 | . . .     | Valve lifter making                                       |
| Y10T 29/49249 | . . .     | Piston making   |
| Y10T 29/4925  | . . . .   | Repairing, converting, servicing or salvaging             |
| Y10T 29/49252 | . . . .   | Multi-element piston making                               |
| Y10T 29/49254 | . . . . . | Utilizing a high energy beam, e.g., laser, electron beam  |
| Y10T 29/49256 | . . . . . | with assembly or composite article making                 |
| Y10T 29/49258 | . . . . . | with thermal barrier or heat flow provision               |
| Y10T 29/49259 | . . . . . | with fiber reinforced structure                           |
| Y10T 29/49261 | . . . . . | by composite casting or molding                           |
| Y10T 29/49263 | . . . . . | by coating or cladding                                    |
| Y10T 29/49265 | . . . .   | Ring groove forming or finishing                          |
| Y10T 29/49266 | . . . .   | Gudgeon pin, wrist pin, piston pin, or boss therefor      |
| Y10T 29/49268 | . . . .   | with other attaching provision for connecting rod         |
| Y10T 29/4927  | . . .     | Cylinder, cylinder head or engine valve sleeve making     |
| Y10T 29/49272 | . . . .   | with liner, coating, or sleeve                            |
| Y10T 29/49274 | . . .     | Piston ring or piston packing making                      |
| Y10T 29/49275 | . . . .   | including forging or hammering                            |
| Y10T 29/49277 | . . . .   | including casting or molding                              |
| Y10T 29/49279 | . . . .   | including rolling or die forming, e.g., drawing, punching |
| Y10T 29/49281 | . . . .   | including coating or plating                              |
| Y10T 29/49282 | . . . .   | including grinding or honing                              |

|               |           |  |
|---------------|-----------|--|
| Y10T 29/49284 | . . . .   | including machining or angular cutting   |
| Y10T 29/49286 | . . .     | Crankshaft making  |
| Y10T 29/49288 | . . .     | Connecting rod making  |
| Y10T 29/4929  | . . . .   | including metallurgical bonding  |
| Y10T 29/49291 | . . . .   | including metal forging or die shaping   |
| Y10T 29/49293 | . . .     | Camshaft making  |
| Y10T 29/49295 | . . .     | Push rod or rocker arm making  |
| Y10T 29/49297 | . . .     | Seal or packing making   |
| Y10T 29/49298 | . . .     | Poppet or I.C. engine valve or valve seat making   |
| Y10T 29/493   | . . . .   | Valve guide making   |
| Y10T 29/49302 | . . . .   | Repairing, converting, servicing or salvaging  |
| Y10T 29/49304 | . . . .   | Valve tappet making  |
| Y10T 29/49306 | . . . .   | Valve seat making  |
| Y10T 29/49307 | . . . .   | Composite or hollow valve stem or head making  |
| Y10T 29/49309 | . . . . . | including forging  |
| Y10T 29/49311 | . . . . . | including extruding  |
| Y10T 29/49313 | . . . . . | including casting  |
| Y10T 29/49314 | . . . .   | with assembly or composite article making  |
| Y10T 29/49316 | . .       | Impeller making  |
| Y10T 29/49318 | . . .     | Repairing or disassembling   |
| Y10T 29/4932  | . . .     | Turbomachine making  |
| Y10T 29/49321 | . . . .   | Assembling individual fluid flow interacting members, e.g., blades, vanes, buckets, on rotary support member |
| Y10T 29/49323 | . . . .   | Assembling fluid flow directing devices, e.g., stators, diaphragms, nozzles                                  |
| Y10T 29/49325 | . . . .   | Shaping integrally bladed rotor  |
| Y10T 29/49327 | . . .     | Axial blower or fan  |
| Y10T 29/49329 | . . .     | Centrifugal blower or fan  |
| Y10T 29/4933  | . . .     | Fluid coupling device  |
| Y10T 29/49332 | . . .     | Propeller making   |
| Y10T 29/49334 | . . . .   | Utilizing hollow tube blank  |
| Y10T 29/49336 | . . .     | Blade making   |
| Y10T 29/49337 | . . . .   | Composite blade  |
| Y10T 29/49339 | . . . .   | Hollow blade   |
| Y10T 29/49341 | . . . . . | with cooling passage   |
| Y10T 29/49343 | . . . . . | Passage contains tubular insert  |
| Y10T 29/49345 | . .       | Catalytic device making  |
| Y10T 29/49346 | . .       | Rocket or jet device making  |
| Y10T 29/49348 | . .       | Burner, torch or metallurgical lance making  |
| Y10T 29/4935  | . .       | Heat exchanger or boiler making  |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49352 | . . .     | Repairing, converting, servicing or salvaging                 |
| Y10T 29/49353 | . . .     | Heat pipe device making                                       |
| Y10T 29/49355 | . . .     | Solar energy device making                                    |
| Y10T 29/49357 | . . .     | Regenerator or recuperator making                             |
| Y10T 29/49359 | . . .     | Cooling apparatus making, e.g., air conditioner, refrigerator |
| Y10T 29/49361 | . . .     | Tube inside tube  |
| Y10T 29/49362 | . . .     | Tube wound about tube   |
| Y10T 29/49364 | . . .     | Tube joined to flat sheet longitudinally, i.e., tube sheet    |
| Y10T 29/49366 | . . .     | Sheet joined to sheet   |
| Y10T 29/49368 | . . . .   | with inserted tubes   |
| Y10T 29/49369 | . . . .   | Utilizing bond inhibiting material                            |
| Y10T 29/49371 | . . . . . | with subsequent fluid expansion                               |
| Y10T 29/49373 | . . .     | Tube joint and tube plate structure                           |
| Y10T 29/49375 | . . . .   | including conduit expansion or inflation                      |
| Y10T 29/49377 | . . .     | Tube with heat transfer means                                 |
| Y10T 29/49378 | . . . .   | Finned tube   |
| Y10T 29/4938  | . . . . . | Common fin traverses plurality of tubes                       |
| Y10T 29/49382 | . . . . . | Helically finned  |
| Y10T 29/49384 | . . . . . | Internally finned   |
| Y10T 29/49385 | . . . . . | Made from unitary workpiece, i.e., no assembly                |
| Y10T 29/49387 | . . .     | Boiler making   |
| Y10T 29/49389 | . . .     | Header or manifold making                                     |
| Y10T 29/49391 | . . .     | Tube making or reforming                                      |
| Y10T 29/49393 | . . .     | with metallurgical bonding                                    |
| Y10T 29/49394 | . .       | Accumulator making  |
| Y10T 29/49396 | . .       | Condenser, evaporator or vaporizer making                     |
| Y10T 29/49398 | . .       | Muffler, manifold or exhaust pipe making                      |
| Y10T 29/494   | . .       | Fluidic or fluid actuated device making                       |
| Y10T 29/49401 | . .       | Fluid pattern dispersing device making, e.g., ink jet         |
| Y10T 29/49403 | . .       | Tapping device making   |
| Y10T 29/49405 | . .       | Valve or choke making   |
| Y10T 29/49407 | . . .     | Repairing, converting, servicing or salvaging                 |
| Y10T 29/49409 | . . .     | Valve seat forming  |
| Y10T 29/4941  | . . .     | Valve stem or tire valve making                               |
| Y10T 29/49412 | . . .     | with assembly, disassembly or composite article making        |
| Y10T 29/49414 | . . . .   | Joining plural semi-circular components                       |
| Y10T 29/49416 | . . . .   | with material shaping or cutting                              |
| Y10T 29/49417 | . . . . . | including molding or casting                                  |
| Y10T 29/49419 | . . . . . | including machining or drilling                               |
| Y10T 29/49421 | . . . . . | including metallurgical bonding                               |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49423 | . . . . . | including metal deforming                         |
| Y10T 29/49425 | . . . . . | including metallurgical bonding                   |
| Y10T 29/49426 | . . . . . | including metal shaping and diverse operation     |
| Y10T 29/49428 | . . . . . | Gas and water specific plumbing component making  |
| Y10T 29/4943  | . . . . . | Plumbing fixture making                           |
| Y10T 29/49432 | . . . . . | Nozzle making                                     |
| Y10T 29/49433 | . . . . . | Sprayer   |
| Y10T 29/49435 | . . . . . | Flexible conduit or fitting therefor              |
| Y10T 29/49437 | . . . . . | Flue connector device making                      |
| Y10T 29/49439 | . . . . . | Trap making                                       |
| Y10T 29/4944  | . . . . . | Return connector device making                    |
| Y10T 29/49442 | . . . . . | T-shaped fitting making                           |
| Y10T 29/49444 | . . . . . | Elbow or L-shaped fitting making                  |
| Y10T 29/49446 | . . . . . | Ferrule making or reforming                       |
| Y10T 29/49448 | . . . . . | Agricultural device making                        |
| Y10T 29/49449 | . . . . . | Traction apparatus, e.g., for tractor             |
| Y10T 29/49451 | . . . . . | Harvester guard                                   |
| Y10T 29/49453 | . . . . . | Pulley making                                     |
| Y10T 29/49455 | . . . . . | Assembly  |
| Y10T 29/49456 | . . . . . | with shaping                                      |
| Y10T 29/49458 | . . . . . | Disc splitting to form pulley rim groove          |
| Y10T 29/4946  | . . . . . | Groove forming in sheet metal pulley rim          |
| Y10T 29/49462 | . . . . . | Gear making                                       |
| Y10T 29/49464 | . . . . . | Assembling of gear into force transmitting device |
| Y10T 29/49465 | . . . . . | Gear mounting                                     |
| Y10T 29/49467 | . . . . . | Gear shaping                                      |
| Y10T 29/49469 | . . . . . | Worm gear   |
| Y10T 29/49471 | . . . . . | Roll forming                                      |
| Y10T 29/49472 | . . . . . | Punching or stamping                              |
| Y10T 29/49474 | . . . . . | Die-press shaping                                 |
| Y10T 29/49476 | . . . . . | Gear tooth cutting                                |
| Y10T 29/49478 | . . . . . | Gear blank making                                 |
| Y10T 29/4948  | . . . . . | with specific gear material                       |
| Y10T 29/49481 | . . . . . | Wheel making                                      |
| Y10T 29/49483 | . . . . . | Railway or trolley wheel making                   |
| Y10T 29/49485 | . . . . . | Multiple part or composite                        |
| Y10T 29/49487 | . . . . . | with axle or hub                                  |
| Y10T 29/49488 | . . . . . | Steering wheel                                    |
| Y10T 29/4949  | . . . . . | Material winding, e.g., reel, spool               |
| Y10T 29/49492 | . . . . . | Land wheel  |

|               |           |  |
|---------------|-----------|--|
| Y10T 29/49494 | . . . .   | Assembling tire to wheel body  |
| Y10T 29/49496 | . . . .   | Disc type wheel  |
| Y10T 29/49497 | . . . . . | Assembling wheel disc to rim and hub                                   |
| Y10T 29/49499 | . . . . . | Assembling wheel disc to rim   |
| Y10T 29/49501 | . . . . . | with disc shaping  |
| Y10T 29/49503 | . . . . . | Integral rim and disc making   |
| Y10T 29/49504 | . . . . . | Disc shaping   |
| Y10T 29/49506 | . . . . . | Tensioned spoke type wheel making                                      |
| Y10T 29/49508 | . . . . . | Tensioning all spokes simultaneously                                   |
| Y10T 29/4951  | . . . . . | Tensioning spokes in series  |
| Y10T 29/49512 | . . . . . | Tensioning spokes individually   |
| Y10T 29/49513 | . . . . . | Compression, e.g., nontension, spoke type wheel making                 |
| Y10T 29/49515 | . . . . . | Joining spokes to rim and hub  |
| Y10T 29/49517 | . . . . . | Joining spokes to rim  |
| Y10T 29/49519 | . . . . . | Joining spokes to hub  |
| Y10T 29/4952  | . . . . . | Making plural spokes from a single blank                               |
| Y10T 29/49522 | . . . . . | Individual spoke making  |
| Y10T 29/49524 | . . . . . | Rim making   |
| Y10T 29/49526 | . . . . . | with assembling  |
| Y10T 29/49528 | . . . . . | Demountable rim making   |
| Y10T 29/49529 | . . . . . | Die-press shaping  |
| Y10T 29/49531 | . . . . . | Roller forming   |
| Y10T 29/49533 | . . . . . | Hub making   |
| Y10T 29/49535 | . . . . . | with assembling  |
| Y10T 29/49536 | . . . . . | Hub shaping  |
| Y10T 29/49538 | . . . . . | Tire making  |
| Y10T 29/4954  | . . . . . | Wheel trim making, e.g., wheel cover, hubcap                           |
| Y10T 29/49542 | . . . . . | with means for retaining trim member on wheel                          |
| Y10T 29/49544 | . . . .   | Roller making  |
| Y10T 29/49545 | . . . .   | Repairing or servicing   |
| Y10T 29/49547 | . . . .   | Assembling preformed components  |
| Y10T 29/49549 | . . . . . | Work contacting surface element assembled to core                      |
| Y10T 29/49551 | . . . . . | Work contacting surface wound about core                               |
| Y10T 29/49552 | . . . . . | with prestressing of component by heat differential, e.g., shrink, fit |
| Y10T 29/49554 | . . . . . | Work contacting surface having annular axial sections                  |
| Y10T 29/49556 | . . . . . | Work contacting surface element assembled to end support members       |
| Y10T 29/49558 | . . . . . | Includes securing removable cover on roller                            |
| Y10T 29/4956  | . . . . . | Fabricating and shaping roller work contacting surface element         |
| Y10T 29/49561 | . . . . . | toothed roller   |
| Y10T 29/49563 | . . . . . | with coating or casting about a core                                   |

|               |  |
|---------------|--|
| Y10T 29/49565 | . . . One-piece roller making  |
| Y10T 29/49567 | . . Dental appliance making  |
| Y10T 29/49568 | . . . Orthodontic device making  |
| Y10T 29/4957  | . . Sound device making  |
| Y10T 29/49572 | . . . Hearing aid component making   |
| Y10T 29/49574 | . . . Musical instrument or tuning fork making   |
| Y10T 29/49575 | . . . including diaphragm or support therefor  |
| Y10T 29/49577 | . . . Phonograph component making  |
| Y10T 29/49579 | . . Watch or clock making  |
| Y10T 29/49581 | . . . having arbor, pinion, or balance   |
| Y10T 29/49583 | . . . having indicia, face, or dial  |
| Y10T 29/49584 | . . . having case, cover, or back  |
| Y10T 29/49586 | . . . having crown, stem, or pendent   |
| Y10T 29/49588 | . . Jewelry or locket making   |
| Y10T 29/4959  | . . . Human adornment device making  |
| Y10T 29/49591 | . . . . Bracelet making  |
| Y10T 29/49593 | . . . . Finger ring making   |
| Y10T 29/49595 | . . . Latch, clasp, or fastener component making                                       |
| Y10T 29/49597 | . . . Ornamental stock making  |
| Y10T 29/49599 | . . Knob or knob shank making  |
| Y10T 29/496   | . . Multiperforated metal article making   |
| Y10T 29/49602 | . . . Coil wound wall screen   |
| Y10T 29/49604 | . . . Filter   |
| Y10T 29/49606 | . . Turnbuckle making  |
| Y10T 29/49607 | . . Spring-head clip making  |
| Y10T 29/49609 | . . Spring making  |
| Y10T 29/49611 | . . . for vehicle or clutch  |
| Y10T 29/49613 | . . . for human comfort  |
| Y10T 29/49615 | . . . Resilient shock or vibration absorber utility                                    |
| Y10T 29/49616 | . . Structural member making   |
| Y10T 29/49618 | . . . Restoring existing member, e.g., reinforcing, repairing                          |
| Y10T 29/4962  | . . . Grille making  |
| Y10T 29/49622 | . . . Vehicular structural member making   |
| Y10T 29/49623 | . . . Static structure, e.g., a building component                                     |
| Y10T 29/49625 | . . . . Openwork, e.g., a truss, joist, frame, lattice-type or box beam                |
| Y10T 29/49627 | . . . . . Frame component  |
| Y10T 29/49629 | . . . . Panel  |
| Y10T 29/49631 | . . . . Columnar member  |
| Y10T 29/49632 | . . . . Metal reinforcement member for nonmetallic, e.g., concrete, structural element |



|               |           |   |
|---------------|-----------|---|
| Y10T 29/49634 | . . . .   | Beam or girder  |
| Y10T 29/49636 | . .       | Process for making bearing or component thereof   |
| Y10T 29/49638 | . . .     | Repairing   |
| Y10T 29/49639 | . . .     | Fluid bearing   |
| Y10T 29/49641 | . . .     | Linear bearing  |
| Y10T 29/49643 | . . .     | Rotary bearing  |
| Y10T 29/49645 | . . . .   | Thrust bearing  |
| Y10T 29/49647 | . . . .   | Plain bearing   |
| Y10T 29/49648 | . . . . . | Self-adjusting or self-aligning, including ball and socket type, bearing and component making |
| Y10T 29/4965  | . . . . . | Deforming socket to secure ball   |
| Y10T 29/49652 | . . . . . | Die-press shaping   |
| Y10T 29/49654 | . . . . . | having liner  |
| Y10T 29/49655 | . . . . . | having liner  |
| Y10T 29/49657 | . . . . . | Socket making   |
| Y10T 29/49659 | . . . . . | by molding or casting   |
| Y10T 29/49661 | . . . . . | Nonmetallic socket  |
| Y10T 29/49663 | . . . . . | by assembling   |
| Y10T 29/49664 | . . . . . | Ball making   |
| Y10T 29/49666 | . . . . . | with metallurgical bonding  |
| Y10T 29/49668 | . . . . . | Sleeve or bushing making  |
| Y10T 29/4967  | . . . . . | Nonmetallic   |
| Y10T 29/49671 | . . . . . | Strip or blank material shaping   |
| Y10T 29/49673 | . . . . . | Die-press shaping   |
| Y10T 29/49675 | . . . . . | having inner lining layer   |
| Y10T 29/49677 | . . . . . | having liner  |
| Y10T 29/49679 | . . . .   | Anti-friction bearing or component thereof  |
| Y10T 29/4968  | . . . . . | Assembling of race, cage, and rolling anti-friction members                                   |
| Y10T 29/49682 | . . . . . | Assembling of race and rolling anti-friction members  |
| Y10T 29/49684 | . . . . . | with race making  |
| Y10T 29/49686 | . . . . . | Assembling of cage and rolling anti-friction members  |
| Y10T 29/49687 | . . . . . | with cage making  |
| Y10T 29/49689 | . . . . . | Race making   |
| Y10T 29/49691 | . . . . . | Cage making   |
| Y10T 29/49693 | . . . . . | Roller making   |
| Y10T 29/49694 | . . . . . | Ball making   |
| Y10T 29/49696 | . . .     | Mounting  |
| Y10T 29/49698 | . . .     | Demounting  |
| Y10T 29/497   | . . .     | Pre-usage process, e.g., preloading, aligning   |
| Y10T 29/49702 | . . .     | Lubricating   |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49703 | . . .     | Sealing   |
| Y10T 29/49705 | . . .     | Coating or casting  |
| Y10T 29/49707 | . . .     | Bearing surface treatment   |
| Y10T 29/49709 | . . .     | Specific metallic composition   |
| Y10T 29/4971  | . . .     | Nonmetallic bearing element   |
| Y10T 29/49712 | . .       | Ball making   |
| Y10T 29/49714 | . . .     | Hollow ball   |
| Y10T 29/49716 | . .       | Converting  |
| Y10T 29/49718 | . .       | Repairing   |
| Y10T 29/49719 | . . .     | Seal or element thereof   |
| Y10T 29/49721 | . . .     | with disassembling  |
| Y10T 29/49723 | . . . .   | including reconditioning of part  |
| Y10T 29/49725 | . . . . . | by shaping  |
| Y10T 29/49726 | . . . . . | Removing material   |
| Y10T 29/49728 | . . . . . | and by a metallurgical operation, e.g., welding, diffusion bonding, casting |
| Y10T 29/4973  | . . . .   | Replacing of defective part   |
| Y10T 29/49732 | . . .     | by attaching repair preform, e.g., remaking, restoring, or patching         |
| Y10T 29/49734 | . . . .   | and removing damaged material   |
| Y10T 29/49735 | . . . . . | Mechanically attaching preform with separate fastener                       |
| Y10T 29/49737 | . . . . . | Metallurgically attaching preform   |
| Y10T 29/49739 | . . . .   | Mechanically attaching preform by separate fastener                         |
| Y10T 29/49741 | . . . . . | Screw threaded fastener   |
| Y10T 29/49742 | . . . .   | Metallurgically attaching preform   |
| Y10T 29/49744 | . . . .   | Screw threaded preform  |
| Y10T 29/49746 | . . .     | by applying fluent material, e.g., coating, casting                         |
| Y10T 29/49748 | . . .     | by shaping, e.g., bending, extruding, turning, etc.                         |
| Y10T 29/4975  | . . . .   | including heating   |
| Y10T 29/49751 | . .       | Scrap recovering or utilizing   |
| Y10T 29/49753 | . . .     | Metalworking to consolidate scrap   |
| Y10T 29/49755 | . . .     | Separating one material from another  |
| Y10T 29/49757 | . . . .   | by burning or heating   |
| Y10T 29/49758 | . .       | During simulated operation or operating conditions                          |
| Y10T 29/4976  | . . .     | Temperature   |
| Y10T 29/49762 | . .       | Center locating and shaping   |
| Y10T 29/49764 | . .       | with testing or indicating  |
| Y10T 29/49766 | . . .     | torquing threaded assemblage or determining torque herein                   |
| Y10T 29/49767 | . . . .   | Determining relative number of threaded member rotations                    |
| Y10T 29/49769 | . . .     | Using optical instrument [excludes mere human eyeballing]                   |
| Y10T 29/49771 | . . .     | Quantitative measuring or gauging   |

|               |   |
|---------------|---|
| Y10T 29/49773 | . . . . by radioactive tracing  |
| Y10T 29/49774 | . . . . by vibratory or oscillatory movement  |
| Y10T 29/49776 | . . . . Pressure, force, or weight determining                                      |
| Y10T 29/49778 | . . . with aligning, guiding, or instruction  |
| Y10T 29/4978  | . . . . Assisting assembly or disassembly   |
| Y10T 29/49782 | . . of a slide fastener   |
| Y10T 29/49783 | . . . of slider   |
| Y10T 29/49785 | . . . of interlocking element   |
| Y10T 29/49787 | . . Obtaining plural composite product pieces from preassembled workpieces          |
| Y10T 29/49789 | . . Obtaining plural product pieces from unitary workpiece                          |
| Y10T 29/4979  | . . . Breaking through weakened portion   |
| Y10T 29/49792 | . . . Dividing through modified portion   |
| Y10T 29/49794 | . . . Dividing on common outline  |
| Y10T 29/49796 | . . . Coacting pieces   |
| Y10T 29/49798 | . . . Dividing sequentially from leading end, e.g., by cutting or breaking          |
| Y10T 29/49799 | . . Providing transitory integral holding or handling portion                       |
| Y10T 29/49801 | . . Shaping fiber or fibered material   |
| Y10T 29/49803 | . . Magnetically shaping  |
| Y10T 29/49805 | . . Shaping by direct application of fluent pressure                                |
| Y10T 29/49806 | . . . Explosively shaping   |
| Y10T 29/49808 | . . Shaping container end to encapsulate material                                   |
| Y10T 29/4981  | . . Utilizing transitory attached element or associated separate material           |
| Y10T 29/49812 | . . . Temporary protective coating, impregnation, or cast layer                     |
| Y10T 29/49813 | . . Shaping mating parts for reassembly in different positions                      |
| Y10T 29/49815 | . . Disassembling   |
| Y10T 29/49817 | . . . with other than ancillary treating or assembling                              |
| Y10T 29/49819 | . . . with conveying of work or disassembled work part                              |
| Y10T 29/49821 | . . . by altering or destroying work part or connector                              |
| Y10T 29/49822 | . . . by applying force   |
| Y10T 29/49824 | . . . . to elastically deform work part or connector                                |
| Y10T 29/49826 | . . Assembling or joining   |
| Y10T 29/49828 | . . . Progressively advancing of work assembly station or assembled portion of work |
| Y10T 29/49829 | . . . . Advancing work to successive stations [i.e., assembly line]                 |
| Y10T 29/49831 | . . . . Advancing station   |
| Y10T 29/49833 | . . . Punching, piercing or reaming part by surface of second part                  |
| Y10T 29/49835 | . . . . with shaping  |
| Y10T 29/49837 | . . . . . of first part   |
| Y10T 29/49838 | . . . by stringing  |
| Y10T 29/4984  | . . . Retaining clearance for motion between assembled parts                        |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49842 | . . . .   | Between tube-forming helical coils  |
| Y10T 29/49844 | . . . .   | Through resilient media   |
| Y10T 29/49845 | . . . .   | by deforming interlock  |
| Y10T 29/49847 | . . . . . | by folding part into plural ears  |
| Y10T 29/49849 | . . . . . | by wrapping around  |
| Y10T 29/49851 | . . . . . | of link closure   |
| Y10T 29/49853 | . . . . . | of sphere, i.e., ball, in socket  |
| Y10T 29/49854 | . . . . . | Ball point pen making   |
| Y10T 29/49856 | . . . . . | Allowing assembled sphere to move in single plane only                                  |
| Y10T 29/49858 | . . . . . | of flange into tubular socket   |
| Y10T 29/4986  | . . . . . | Outwardly deforming internally fitted rod   |
| Y10T 29/49861 | . . .     | Sizing mating parts during final positional association                                 |
| Y10T 29/49863 | . . .     | with prestressing of part   |
| Y10T 29/49865 | . . . .   | by temperature differential [e.g., shrink fit]  |
| Y10T 29/49867 | . . . .   | of skin on frame member   |
| Y10T 29/49869 | . . . . . | by flexing  |
| Y10T 29/4987  | . . . .   | Elastic joining of parts  |
| Y10T 29/49872 | . . . . . | Confining elastic part in socket  |
| Y10T 29/49874 | . . . .   | Prestressing rod, filament or strand  |
| Y10T 29/49876 | . . . .   | by snap fit   |
| Y10T 29/49877 | . . .     | of flexible wall, expansible chamber devices [e.g., bellows]                            |
| Y10T 29/49879 | . . .     | Spaced wall tube or receptacle  |
| Y10T 29/49881 | . . .     | of separate helix [e.g., screw thread]  |
| Y10T 29/49883 | . . .     | Ribbing   |
| Y10T 29/49885 | . . .     | with coating before or during assembling  |
| Y10T 29/49886 | . . . .   | to roughen surface  |
| Y10T 29/49888 | . . .     | Subsequently coating  |
| Y10T 29/4989  | . . .     | with spreading of cable strands   |
| Y10T 29/49892 | . . .     | Joining plate edge perpendicularly to frame   |
| Y10T 29/49893 | . . .     | Peripheral joining of opposed mirror image parts to form a hollow body                  |
| Y10T 29/49895 | . . .     | Associating parts by use of aligning means [e.g., use of a drift pin or a "fixture"]    |
| Y10T 29/49897 | . . . .   | Registering mating opposed tool parts [e.g., registering a punch and a cooperating die] |
| Y10T 29/49899 | . . . .   | by multiple cooperating aligning means  |
| Y10T 29/49901 | . . . .   | Sequentially associating parts on stationary aligning means                             |
| Y10T 29/49902 | . . . .   | by manipulating aligning means  |
| Y10T 29/49904 | . . .     | Assembling a subassembly, then assembling with a second subassembly                     |
| Y10T 29/49906 | . . .     | Metal deforming with nonmetallic bonding  |
| Y10T 29/49908 | . . .     | Joining by deforming  |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/49909 | . . . .   | Securing cup or tube between axially extending concentric annuli                                      |
| Y10T 29/49911 | . . . . . | by expanding inner annulus  |
| Y10T 29/49913 | . . . . . | by constricting outer annulus   |
| Y10T 29/49915 | . . . .   | Overedge assembling of seated part  |
| Y10T 29/49917 | . . . . . | by necking in cup or tube wall  |
| Y10T 29/49918 | . . . . . | . . . . . At cup or tube end  |
| Y10T 29/4992  | . . . . . | by flaring inserted cup or tube end   |
| Y10T 29/49922 | . . . . . | by bending over projecting prongs   |
| Y10T 29/49924 | . . . .   | of parallel side-by-side elongated members  |
| Y10T 29/49925 | . . . .   | Inward deformation of aperture or hollow body wall  |
| Y10T 29/49927 | . . . . . | Hollow body is axially joined cup or tube   |
| Y10T 29/49929 | . . . . . | . . . . . Joined to rod   |
| Y10T 29/49931 | . . . . . | . . . . . Joined to overlapping ends of plural rods   |
| Y10T 29/49933 | . . . . . | . . . . . After thinning  |
| Y10T 29/49934 | . . . . . | by axially applying force   |
| Y10T 29/49936 | . . . .   | Surface interlocking  |
| Y10T 29/49938 | . . . .   | Radially expanding part in cavity, aperture, or hollow body   |
| Y10T 29/4994  | . . . . . | Radially expanding internal tube  |
| Y10T 29/49941 | . . . . . | Peripheral edge joining of abutting plates  |
| Y10T 29/49943 | . . . . . | Riveting  |
| Y10T 29/49945 | . . . .   | by driven force fit   |
| Y10T 29/49947 | . . . .   | by applying separate fastener   |
| Y10T 29/49948 | . . . . . | Multipart cooperating fastener [e.g., bolt and nut]   |
| Y10T 29/4995  | . . . . . | Nonthreaded   |
| Y10T 29/49952 | . . . . . | At least one part is nonmetallic  |
| Y10T 29/49954 | . . . . . | Fastener deformed after application   |
| Y10T 29/49956 | . . . . . | Riveting  |
| Y10T 29/49957 | . . . . . | . . . . . At least one part nonmetallic   |
| Y10T 29/49959 | . . . . . | Nonresilient fastener   |
| Y10T 29/49961 | . . . . . | At least one part nonmetallic   |
| Y10T 29/49963 | . . . . . | Threaded fastener   |
| Y10T 29/49964 | . . . . . | At least one part nonmetallic   |
| Y10T 29/49966 | . . . . . | with supplemental joining   |
| Y10T 29/49968 | . . . . . | Metal fusion joining  |
| Y10T 29/4997  | . . . . . | At least one part nonmetallic   |
| Y10T 29/49972 | . . . .   | with separating, localizing, or eliminating of as-cast defects from a metal casting [e.g., anti-pipe] |
| Y10T 29/49973 | . . . .   | Compressing ingot while still partially molten  |
| Y10T 29/49975 | . . . .   | Removing defects  |
| Y10T 29/49977 | . . . . . | From center of ingot to leave hollow blank  |

|               |  |
|---------------|--|
| Y10T 29/49979 | . . . . After deforming  |
| Y10T 29/4998  | . . Combined manufacture including applying or shaping of fluent material                |
| Y10T 29/49982 | . . . Coating  |
| Y10T 29/49984 | . . . . and casting  |
| Y10T 29/49986 | . . . . Subsequent to metal working  |
| Y10T 29/49988 | . . . Metal casting  |
| Y10T 29/49989 | . . . . Followed by cutting or removing material   |
| Y10T 29/49991 | . . . . Combined with rolling  |
| Y10T 29/49993 | . . . Filling of opening   |
| Y10T 29/49995 | . . Shaping one-piece blank by removing material   |
| Y10T 29/49996 | . . . Successive distinct removal operations   |
| Y10T 29/49998 | . . Work holding   |
| Y10T 29/50    | . Convertible metal working machine  |
| Y10T 29/505   | . . Vise type  |
| Y10T 29/51    | . Plural diverse manufacturing apparatus including means for metal shaping or assembling |
| Y10T 29/5101  | . . Slide fastener or slide fastener element   |
| Y10T 29/5102  | . . Binding or covering and cutting  |
| Y10T 29/5103  | . . . Cutting covering material only   |
| Y10T 29/5104  | . . Type of machine  |
| Y10T 29/5105  | . . . Drill press  |
| Y10T 29/5107  | . . . . Drilling and other   |
| Y10T 29/5108  | . . . . Portable   |
| Y10T 29/5109  | . . . Lathe  |
| Y10T 29/511   | . . . . Grinding attachment  |
| Y10T 29/5111  | . . . . Pulley or wheel  |
| Y10T 29/5112  | . . . . Convertible  |
| Y10T 29/5113  | . . . . Commutator   |
| Y10T 29/5114  | . . . . Lathe and tool   |
| Y10T 29/5115  | . . . Planer   |
| Y10T 29/5116  | . . forging and bending, cutting or punching   |
| Y10T 29/5117  | . . . Fastener [zipper]  |
| Y10T 29/5118  | . . . Riveting   |
| Y10T 29/512   | . . . Ball making  |
| Y10T 29/5121  | . . . Wire working   |
| Y10T 29/5122  | . . with means to feed work during tool contact  |
| Y10T 29/5123  | . . . including nonrotary flying tool  |
| Y10T 29/5124  | . . with means to feed work intermittently from one tool station to another              |
| Y10T 29/5125  | . . . Stock turret   |
| Y10T 29/5126  | . . . . Swiss type   |

|              |           |   |
|--------------|-----------|---|
| Y10T 29/5127 | . . .     | Blank turret  |
| Y10T 29/5128 | . . . .   | Rotary work - vertical axis   |
| Y10T 29/5129 | . . . .   | Rotary work - horizontal axis   |
| Y10T 29/513  | . . . .   | Stationary work   |
| Y10T 29/5132 | . . . .   | Belt drive  |
| Y10T 29/5133 | . . . .   | Crankshaft  |
| Y10T 29/5134 | . . . .   | Collapsible tube  |
| Y10T 29/5135 | . . .     | Endless belt  |
| Y10T 29/5136 | . .       | Separate tool stations for selective or successive operation on work                                    |
| Y10T 29/5137 | . . .     | including assembling or disassembling station   |
| Y10T 29/5138 | . . . .   | and means to machine work part to fit cooperating work part   |
| Y10T 29/5139 | . . . .   | and means to sever work prior to disassembling  |
| Y10T 29/514  | . . . . . | comprising means to strip insulation from wire  |
| Y10T 29/5141 | . . . .   | and means to stake electric wire to commutator or armature in assembling of electric motor or generator |
| Y10T 29/5142 | . . . .   | and means to sever work from supply   |
| Y10T 29/5143 | . . . .   | and means to machine product  |
| Y10T 29/5145 | . . . . . | to sever product to length  |
| Y10T 29/5146 | . .       | Common reciprocating support for spaced tools   |
| Y10T 29/5147 | . .       | including composite tool  |
| Y10T 29/5148 | . . .     | including severing means  |
| Y10T 29/5149 | . . . .   | to sever electric terminal from supply strip  |
| Y10T 29/515  | . . . .   | to trim electric component  |
| Y10T 29/5151 | . . . . . | Means comprising hand-manipulatable implement   |
| Y10T 29/5152 | . .       | with turret mechanism   |
| Y10T 29/5153 | . . .     | Multiple turret   |
| Y10T 29/5154 | . . .     | tool turret   |
| Y10T 29/5155 | . . . .   | Rotary tool holder  |
| Y10T 29/5157 | . . . .   | Sliding tool holder   |
| Y10T 29/5158 | . . . .   | Fluid operated  |
| Y10T 29/5159 | . . . .   | Cam operated  |
| Y10T 29/516  | . . . . . | Longitudinal turret axis  |
| Y10T 29/5161 | . . . . . | Transverse turret axis  |
| Y10T 29/5162 | . . . .   | Lever operated  |
| Y10T 29/5163 | . . . .   | Rack-and-pinion operated  |
| Y10T 29/5164 | . . . .   | Screw operated  |
| Y10T 29/5165 | . . .     | including rotating and/or locking means   |
| Y10T 29/5166 | . . . .   | Frictional and positive   |
| Y10T 29/5167 | . . . .   | Lock means for tool or work turrets   |
| Y10T 29/5168 | . .       | Multiple-tool holder  |

|               |  |
|---------------|--|
| Y10T 29/517   | . . . Laterally movable stock holder   |
| Y10T 29/5171  | . . . Axial tool and transversely movable slide rest   |
| Y10T 29/5172  | . . . . Rotary tool spindle  |
| Y10T 29/5173  | . . . Longitudinally and transversely movable  |
| Y10T 29/5174  | . . . . Rotary tool spindle  |
| Y10T 29/5175  | . . . Oscillating tool   |
| Y10T 29/5176  | . . including machining means  |
| Y10T 29/5177  | . . . and work-holder for assembly   |
| Y10T 29/5178  | . . Attachment   |
| Y10T 29/5179  | . . Speed controller   |
| Y10T 29/518   | . . Carriage stop mechanism  |
| Y10T 29/5182  | . . Flash remover  |
| Y10T 29/5183  | . . Welding strip ends   |
| Y10T 29/5184  | . . Casting and working  |
| Y10T 29/5185  | . . Tube making  |
| Y10T 29/5186  | . . Covering   |
| Y10T 29/5187  | . . Wire working   |
| Y10T 29/5188  | . . Radiator making  |
| Y10T 29/5189  | . . Printing plate   |
| Y10T 29/519   | . . Turret   |
| Y10T 29/5191  | . . Assembly   |
| Y10T 29/5192  | . . Armature   |
| Y10T 29/5193  | . . Electrical connector or terminal   |
| Y10T 29/5195  | . . Tire valve or spark plug   |
| Y10T 29/5196  | . . Multiple station with conveyor   |
| Y10T 29/5197  | . . Multiple stations working strip material   |
| Y10T 29/5198  | . . Continuous strip   |
| Y10T 29/5199  | . . Work on tubes  |
| Y10T 29/52    | . Plural diverse manufacturing apparatus   |
| Y10T 29/53    | . Means to assemble or disassemble   |
| Y10T 29/53004 | . . with means to regulate operation by use of templet, tape, card or other replaceable information supply |
| Y10T 29/53009 | . . . with comparator  |
| Y10T 29/53013 | . . . . Computer input   |
| Y10T 29/53017 | . . . Web or strand-carried information supply   |
| Y10T 29/53022 | . . with means to test work or product   |
| Y10T 29/53026 | . . with randomly actuated stopping or disabling means   |
| Y10T 29/5303  | . . . Responsive to condition of work or product   |
| Y10T 29/53035 | . . . Responsive to operative [e.g., safety device, etc.]  |



|               |  |
|---------------|--|
| Y10T 29/53039 | . . with control means energized in response to activator stimulated by condition sensor |
| Y10T 29/53043 | . . . including means to divert defective work part                                      |
| Y10T 29/53048 | . . . Multiple station assembly or disassembly apparatus                                 |
| Y10T 29/53052 | . . . . including position sensor  |
| Y10T 29/53057 | . . . Responsive to timer  |
| Y10T 29/53061 | . . . Responsive to work or work-related machine element                                 |
| Y10T 29/53065 | . . . . with means to fasten by deformation  |
| Y10T 29/5307  | . . . . . Self-piercing work part  |
| Y10T 29/53074 | . . . . with means to fasten by elastic joining  |
| Y10T 29/53078 | . . . . with means to fasten by frictional fitting                                       |
| Y10T 29/53083 | . . . . including means to apply magnetic force directly to position or hold work        |
| Y10T 29/53087 | . . with signal, scale, illuminator, or optical viewer                                   |
| Y10T 29/53091 | . . . for work-holder for assembly or disassembly  |
| Y10T 29/53096 | . . including means to provide a controlled environment                                  |
| Y10T 29/531   | . . Nuclear device   |
| Y10T 29/53104 | . . Roller or ball bearing   |
| Y10T 29/53109 | . . . including deforming means  |
| Y10T 29/53113 | . . Heat exchanger   |
| Y10T 29/53117 | . . . including means to manipulate heat exchanger tube bundle                           |
| Y10T 29/53122 | . . . including deforming means  |
| Y10T 29/53126 | . . Means to place sheath on running-length core   |
| Y10T 29/5313  | . . Means to assemble electrical device  |
| Y10T 29/53135 | . . . Storage cell or battery  |
| Y10T 29/53139 | . . . . including deforming means  |
| Y10T 29/53143 | . . . Motor or generator   |
| Y10T 29/53148 | . . . . Means to assemble commutator   |
| Y10T 29/53152 | . . . . Means to position insulation   |
| Y10T 29/53157 | . . . . Means to stake wire to commutator or armature                                    |
| Y10T 29/53161 | . . . . including deforming means  |
| Y10T 29/53165 | . . . Magnetic memory device   |
| Y10T 29/5317  | . . . Laminated device   |
| Y10T 29/53174 | . . . Means to fasten electrical component to wiring board, base, or substrate           |
| Y10T 29/53178 | . . . . Chip component   |
| Y10T 29/53183 | . . . . Multilead component  |
| Y10T 29/53187 | . . . Multiple station assembly apparatus  |
| Y10T 29/53191 | . . . Means to apply vacuum directly to position or hold work part                       |
| Y10T 29/53196 | . . . Means to apply magnetic force directly to position or hold work part               |
| Y10T 29/532   | . . . Conductor  |

|               |           |  |
|---------------|-----------|--|
| Y10T 29/53204 | . . . .   | Electrode  |
| Y10T 29/53209 | . . . .   | Terminal or connector  |
| Y10T 29/53213 | . . . . . | Assembled to wire-type conductor   |
| Y10T 29/53217 | . . . . . | Means to simultaneously assemble multiple, independent conductors to terminal                  |
| Y10T 29/53222 | . . . . . | Means comprising hand-manipulatable implement  |
| Y10T 29/53226 | . . . . . | Fastening by deformation   |
| Y10T 29/5323  | . . . . . | Fastening by elastic joining   |
| Y10T 29/53235 | . . . . . | Means to fasten by deformation   |
| Y10T 29/53239 | . . . . . | Means to fasten by elastic joining   |
| Y10T 29/53243 | . . . .   | Multiple, independent conductors   |
| Y10T 29/53248 | . . . .   | Switch or fuse   |
| Y10T 29/53252 | . . .     | Means to simultaneously fasten three or more parts   |
| Y10T 29/53257 | . . .     | Means comprising hand-manipulatable implement  |
| Y10T 29/53261 | . . .     | Means to align and advance work part   |
| Y10T 29/53265 | . . .     | with work-holder for assembly  |
| Y10T 29/5327  | . . .     | Means to fasten by deforming   |
| Y10T 29/53274 | . .       | Means to disassemble electrical device   |
| Y10T 29/53278 | . . .     | Storage cell or battery  |
| Y10T 29/53283 | . . .     | Means comprising hand-manipulatable implement  |
| Y10T 29/53287 | . .       | Means to place traveler on ring or ring on bobbin of a textile machine                         |
| Y10T 29/53291 | . .       | Slide fastener   |
| Y10T 29/53296 | . . .     | Means to assemble stop onto stringer   |
| Y10T 29/533   | . . .     | Means to assemble slider onto stringer   |
| Y10T 29/53304 | . . .     | Means to assemble teeth onto stringer  |
| Y10T 29/53309 | . . .     | Disassembly means  |
| Y10T 29/53313 | . .       | Means to interrelatedly feed plural work parts from plural sources without manual intervention |
| Y10T 29/53317 | . . .     | Box or pallet assembly means   |
| Y10T 29/53322 | . . .     | Means to assemble container  |
| Y10T 29/53326 | . . . .   | Handle to container  |
| Y10T 29/5333  | . . . .   | Label to container   |
| Y10T 29/53335 | . . . .   | Pressurized dispensing container   |
| Y10T 29/53339 | . . . .   | Hypodermic syringe   |
| Y10T 29/53343 | . . . .   | including fluid component  |
| Y10T 29/53348 | . . .     | Running-length work  |
| Y10T 29/53352 | . . . .   | Means including orbiting running-length work supply  |
| Y10T 29/53357 | . . . .   | Pipe section   |
| Y10T 29/53361 | . . . .   | Assembled to article   |
| Y10T 29/53365 | . . .     | Multiple station assembly apparatus  |

|               |   |
|---------------|---|
| Y10T 29/5337  | . . . including assembly pallet   |
| Y10T 29/53374 | . . . including turret-type conveyor  |
| Y10T 29/53378 | . . . including converging conveyors  |
| Y10T 29/53383 | . . . and means to fasten work parts together                                   |
| Y10T 29/53387 | . . . . by deforming  |
| Y10T 29/53391 | . . . . by elastic joining  |
| Y10T 29/53396 | . . . . by friction fit   |
| Y10T 29/534   | . . Multiple station assembly or disassembly apparatus                          |
| Y10T 29/53404 | . . . including turret-type conveyor  |
| Y10T 29/53409 | . . . including converging conveyors  |
| Y10T 29/53413 | . . . . and primary central conveyor  |
| Y10T 29/53417 | . . . Means to fasten work parts together                                       |
| Y10T 29/53422 | . . . . by deforming  |
| Y10T 29/53426 | . . . . by elastic joining  |
| Y10T 29/5343  | . . Means to drive self-piercing work part                                      |
| Y10T 29/53435 | . . including assembly pallet   |
| Y10T 29/53439 | . . including provision to utilize thermal expansion of work                    |
| Y10T 29/53443 | . . Means to assemble or disassemble container and fluid component              |
| Y10T 29/53448 | . . Vehicle wheel   |
| Y10T 29/53452 | . . . Railway wheel   |
| Y10T 29/53457 | . . Tumbler lock  |
| Y10T 29/53461 | . . toy doll  |
| Y10T 29/53465 | . . Film or tape cartridge  |
| Y10T 29/5347  | . . Crystal to watch or clock   |
| Y10T 29/53474 | . . Means to insert or extract pen point  |
| Y10T 29/53478 | . . with magazine supply  |
| Y10T 29/53483 | . . . and magnetic work-holder or positioner                                    |
| Y10T 29/53487 | . . . Assembling means comprising hand-manipulatable implement                  |
| Y10T 29/53491 | . . . . One work part comprising living tissue                                  |
| Y10T 29/53496 | . . . . comprising driver for snap-off-mandrel fastener; e.g., Pop [TM] riveter |
| Y10T 29/535   | . . . . One work part comprising nut or screw                                   |
| Y10T 29/53504 | . . . . One work part comprising paper clip                                     |
| Y10T 29/53509 | . . . . Means to assemble tire stud into tire tread                             |
| Y10T 29/53513 | . . . . Means to fasten by deforming  |
| Y10T 29/53517 | . . . . . Fastening sinker to fishing line                                      |
| Y10T 29/53522 | . . . Means to fasten by deforming  |
| Y10T 29/53526 | . . Running-length work   |
| Y10T 29/5353  | . . . Assembled on core   |
| Y10T 29/53535 | . . including means to vibrate work   |
| Y10T 29/53539 | . . including work conveyor   |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/53543 | . . .     | including transporting track  |
| Y10T 29/53548 | . . . .   | and work carrying vehicle   |
| Y10T 29/53552 | . .       | Valve applying or removing  |
| Y10T 29/53557 | . . .     | Engine valve unit puller or applier                                   |
| Y10T 29/53561 | . . .     | Engine valve spring compressor [only]                                 |
| Y10T 29/53565 | . . . .   | Plural spring engagement  |
| Y10T 29/5357  | . . . .   | Screw operated  |
| Y10T 29/53574 | . . . . . | Parallel or tong type, side entrance                                  |
| Y10T 29/53578 | . . . .   | Lever operated  |
| Y10T 29/53583 | . . . . . | Single jaw or valve engagement  |
| Y10T 29/53587 | . . . . . | Plier type  |
| Y10T 29/53591 | . . .     | to or from wheel rim of resilient tire or tube                        |
| Y10T 29/53596 | . . .     | Removal tool  |
| Y10T 29/536   | . .       | Piston ring inserter or remover                                       |
| Y10T 29/53604 | . . .     | Plier-type operation  |
| Y10T 29/53609 | . . . .   | with ring encirclement  |
| Y10T 29/53613 | . .       | Spring applier or remover   |
| Y10T 29/53617 | . . .     | Transmission spring   |
| Y10T 29/53622 | . . .     | Helical spring  |
| Y10T 29/53626 | . . .     | Flat spiral spring [e.g., watch or clock type]                        |
| Y10T 29/5363  | . . .     | Circular spring   |
| Y10T 29/53635 | . . .     | Leaf spring   |
| Y10T 29/53639 | . .       | Means to stake watch or clock   |
| Y10T 29/53643 | . . .     | Plier type  |
| Y10T 29/53648 | . .       | Brake lining to brake shoe  |
| Y10T 29/53652 | . .       | Tube and coextensive core   |
| Y10T 29/53657 | . .       | to apply or remove a resilient article [e.g., tube, sleeve, etc.]     |
| Y10T 29/53661 | . . .     | Nipple to nursing bottle  |
| Y10T 29/53665 | . . .     | Well protector to sucker rod  |
| Y10T 29/5367  | . .       | Coupling to conduit   |
| Y10T 29/53674 | . .       | Loose-leaf sheet binder   |
| Y10T 29/53678 | . .       | Compressing parts together face to face                               |
| Y10T 29/53683 | . .       | Spreading parts apart or separating them from face to face engagement |
| Y10T 29/53687 | . .       | by rotation of work part  |
| Y10T 29/53691 | . . .     | Means to insert or remove helix                                       |
| Y10T 29/53696 | . .       | Means to string   |
| Y10T 29/537   | . .       | tool handle and tool  |
| Y10T 29/53704 | . .       | tool chuck and tool   |
| Y10T 29/53709 | . .       | Overedge assembling means   |
| Y10T 29/53713 | . . .     | Belt-hook attacher  |

|               |           |  |
|---------------|-----------|--|
| Y10T 29/53717 | . . .     | Annular work   |
| Y10T 29/53722 | . . . .   | with radially acting tool inside annular work                                    |
| Y10T 29/53726 | . . . .   | with second workpiece inside annular work one workpiece moved to shape the other |
| Y10T 29/5373  | . . . . . | comprising driver for snap-off-mandrel fastener; e.g., Pop [TM] riveter          |
| Y10T 29/53735 | . . . . . | including near side fastener shaping tool  |
| Y10T 29/53739 | . . . . . | Pneumatic- or fluid-actuated tool  |
| Y10T 29/53743 | . . . . . | Liquid   |
| Y10T 29/53748 | . . . . . | and gas  |
| Y10T 29/53752 | . . . . . | having rotary drive mechanism  |
| Y10T 29/53757 | . . . . . | having allochiral actuating handles  |
| Y10T 29/53761 | . . . . . | having repositionable annulus engaging tool                                      |
| Y10T 29/53765 | . . . . . | including near side fastener shaping tool  |
| Y10T 29/5377  | . . .     | Riveter  |
| Y10T 29/53774 | . . . .   | Single header  |
| Y10T 29/53778 | . . . . . | Pipe joiner  |
| Y10T 29/53783 | . . .     | Clip applier   |
| Y10T 29/53787 | . . .     | Binding or covering  |
| Y10T 29/53791 | . . . .   | Edge binding   |
| Y10T 29/53796 | . .       | Puller or pusher means, contained force multiplying operator                     |
| Y10T 29/538   | . . .     | Hubcap and hub   |
| Y10T 29/53804 | . . .     | Battery post and terminal  |
| Y10T 29/53809 | . . .     | Cotter pin and cooperating member  |
| Y10T 29/53813 | . . . .   | Plier type means   |
| Y10T 29/53817 | . . .     | Valve stem pin or key and another member   |
| Y10T 29/53822 | . . .     | Machine key and another member   |
| Y10T 29/53826 | . . .     | Arbor-type press means   |
| Y10T 29/5383  | . . .     | having fluid operator  |
| Y10T 29/53835 | . . .     | having wedge operator  |
| Y10T 29/53839 | . . .     | having percussion or explosive operator  |
| Y10T 29/53843 | . . . .   | Tube, sleeve, or ferrule inserting or removing                                   |
| Y10T 29/53848 | . . .     | having screw operator  |
| Y10T 29/53852 | . . . .   | C-frame  |
| Y10T 29/53857 | . . . .   | Central screw, work-engagers around screw  |
| Y10T 29/53861 | . . . . . | Work-engager arms along or parallel to screw                                     |
| Y10T 29/53865 | . . . . . | with arm connecting engaging means   |
| Y10T 29/5387  | . . . . . | Pivotal arms   |
| Y10T 29/53874 | . . . . . | Pivotal grippers on screw  |
| Y10T 29/53878 | . . . . . | Tubular or tube segment forms work-engager                                       |

|               |           |   |
|---------------|-----------|---|
| Y10T 29/53883 | . . . . . | Screw threaded work-engager                                   |
| Y10T 29/53887 | . . . . . | Movable grippers on screw                                     |
| Y10T 29/53891 | . . . . . | Plate or bar forms work-engager                               |
| Y10T 29/53896 | . . .     | having lever operator   |
| Y10T 29/539   | . . . .   | Plier type means  |
| Y10T 29/53904 | . .       | Means comprising piston ring group contractor or holder       |
| Y10T 29/53909 | . .       | Means comprising hand manipulatable tool                      |
| Y10T 29/53913 | . . .     | Aligner or center   |
| Y10T 29/53917 | . . . .   | Tube with tube  |
| Y10T 29/53922 | . . . .   | Auto wheel with auto chassis                                  |
| Y10T 29/53926 | . . . .   | Clutch plates   |
| Y10T 29/5393  | . . .     | Means comprising impact receiving tool                        |
| Y10T 29/53935 | . . . .   | C-frame   |
| Y10T 29/53939 | . . . .   | Thread protector [e.g., wheel axle type]                      |
| Y10T 29/53943 | . . .     | Hand gripper for direct push or pull                          |
| Y10T 29/53948 | . . . .   | Centrifugal separator   |
| Y10T 29/53952 | . . . .   | Tube sleeve or ferrule applying or removing                   |
| Y10T 29/53957 | . . . . . | Thread-tapping grip   |
| Y10T 29/53961 | . .       | with work-holder for assembly                                 |
| Y10T 29/53965 | . . .     | for assembling a luminescent mantle                           |
| Y10T 29/5397  | . . .     | and assembling press [e.g., truss assembling means, etc.]     |
| Y10T 29/53974 | . . .     | having means to permit support movement while work is thereon |
| Y10T 29/53978 | . .       | including means to relatively position plural work parts      |
| Y10T 29/53983 | . .       | Work-supported apparatus                                      |
| Y10T 29/53987 | . .       | Tube, sleeve or ferrule                                       |
| Y10T 29/53991 | . .       | Work gripper, anvil, or element                               |
| Y10T 29/53996 | . .       | by deforming  |
| Y10T 29/54    | . .       | Miscellaneous apparatus                                       |

### **Former US Class 70 series**

|                   |  |
|-------------------|--|
| <b>Y10T 70/00</b> | <b>Locks</b>                           |
| Y10T 70/10        | . Miscellaneous                        |
| Y10T 70/20        | . Attack-actuated defeating mechanisms |
| Y10T 70/25        | . . With reset mechanisms              |
| Y10T 70/30        | . Hasp                                 |
| Y10T 70/308       | . . Combination lock                   |
| Y10T 70/317       | . . . Hasp-carried                     |
| Y10T 70/325       | . . . Keeper-carried                   |
| Y10T 70/333       | . . Key lock                           |

|             |           |  |
|-------------|-----------|--|
| Y10T 70/342 | . . .     | Hasp-carried                             |
| Y10T 70/35  | . . . .   | Keeper-encasing                          |
| Y10T 70/358 | . . . . . | Dead bolt                                |
| Y10T 70/367 | . . . . . | Latching bolt                            |
| Y10T 70/375 | . . . . . | Dead bolt                                |
| Y10T 70/383 | . . . . . | Latching bolt                            |
| Y10T 70/392 | . . .     | Keeper-carried                           |
| Y10T 70/40  | . .       | Portable                                 |
| Y10T 70/402 | . .       | Fetters                                  |
| Y10T 70/404 | . . .     | Manacles and cuffs                       |
| Y10T 70/407 | . . . .   | Nippers                                  |
| Y10T 70/409 | . . .     | Shackles                                 |
| Y10T 70/411 | . .       | Clamps                                   |
| Y10T 70/413 | . .       | Padlocks                                 |
| Y10T 70/415 | . . .     | Combination and/or key-controlled        |
| Y10T 70/417 | . . .     | Combination-controlled                   |
| Y10T 70/42  | . . . .   | Non-shackle type                         |
| Y10T 70/422 | . . . .   | Rigid shackle                            |
| Y10T 70/424 | . . . . . | Sliding                                  |
| Y10T 70/426 | . . . . . | Removable                                |
| Y10T 70/428 | . . . . . | Pivoted                                  |
| Y10T 70/43  | . . . . . | Sliding detent                           |
| Y10T 70/433 | . . . . . | Swinging detent                          |
| Y10T 70/435 | . . . .   | Flexible shackle                         |
| Y10T 70/437 | . . .     | Key-controlled                           |
| Y10T 70/439 | . . . .   | Non-shackle type                         |
| Y10T 70/441 | . . . . . | Housing extension and cooperating detent |
| Y10T 70/443 | . . . . . | Single stem or shank                     |
| Y10T 70/446 | . . . .   | Rigid shackle                            |
| Y10T 70/448 | . . . . . | Divided shackle                          |
| Y10T 70/45  | . . . . . | Divided jaw type                         |
| Y10T 70/452 | . . . . . | Sliding                                  |
| Y10T 70/454 | . . . . . | Removable                                |
| Y10T 70/457 | . . . . . | Arcuate locus                            |
| Y10T 70/459 | . . . . . | Both legs engaged                        |
| Y10T 70/461 | . . . . . | Short leg engaged                        |
| Y10T 70/463 | . . . . . | Long leg engaged                         |
| Y10T 70/465 | . . . . . | Pivoted                                  |
| Y10T 70/467 | . . . . . | Sliding detent                           |
| Y10T 70/47  | . . . . . | Free end only engaged                    |

|              |           |   |
|--------------|-----------|---|
| Y10T 70/472  | . . . . . | Pivoted end only engaged                            |
| Y10T 70/474  | . . . . . | Swinging detent                                     |
| Y10T 70/476  | . . . . . | Free end only engaged                               |
| Y10T 70/478  | . . . . . | Pivoted end only engaged                            |
| Y10T 70/48   | . . . . . | Arcuate locus                                       |
| Y10T 70/483  | . . . . . | Flexible shackle                                    |
| Y10T 70/485  | . . . . . | With seal   |
| Y10T 70/487  | . . . . . | Parts, accessories, attachments and adjuncts        |
| Y10T 70/489  | . . . . . | Housings  |
| Y10T 70/491  | . . . . . | Shackles  |
| Y10T 70/493  | . . . . . | Protectors  |
| Y10T 70/496  | . . . . . | Sheaths   |
| Y10T 70/498  | . . . . . | Shields or canopies                                 |
| Y10T 70/50   | . . . . . | Special application                                 |
| Y10T 70/5004 | . . . . . | For antitheft signaling device on protected article |
| Y10T 70/5009 | . . . . . | For portable articles                               |
| Y10T 70/5013 | . . . . . | Canes, umbrellas, apparel                           |
| Y10T 70/5018 | . . . . . | Robes   |
| Y10T 70/5022 | . . . . . | Tools   |
| Y10T 70/5027 | . . . . . | Supporting stands                                   |
| Y10T 70/5031 | . . . . . | Receptacle  |
| Y10T 70/5035 | . . . . . | Bag   |
| Y10T 70/504  | . . . . . | Collapsible throat                                  |
| Y10T 70/5044 | . . . . . | Pivoted rigid jaw                                   |
| Y10T 70/5049 | . . . . . | Attache or briefcase, portfolio                     |
| Y10T 70/5053 | . . . . . | Interengageable slide fastener type                 |
| Y10T 70/5058 | . . . . . | Trunk and/or suitcase                               |
| Y10T 70/5062 | . . . . . | Projecting fixed or movable lug type                |
| Y10T 70/5066 | . . . . . | Bolt type   |
| Y10T 70/5071 | . . . . . | Hasp controlled                                     |
| Y10T 70/5075 | . . . . . | Link and lever of hasp type                         |
| Y10T 70/508  | . . . . . | Hasp type   |
| Y10T 70/5084 | . . . . . | Hasp-carried lock                                   |
| Y10T 70/5089 | . . . . . | Loop type   |
| Y10T 70/5093 | . . . . . | For closures  |
| Y10T 70/5097 | . . . . . | Cabinet   |
| Y10T 70/5102 | . . . . . | Projecting lug type                                 |
| Y10T 70/5106 | . . . . . | External catch                                      |
| Y10T 70/5111 | . . . . . | Projectable bolt                                    |
| Y10T 70/5115 | . . . . . | Multiple bolts                                      |



|              |           |                                      |
|--------------|-----------|--------------------------------------|
| Y10T 70/5119 | . . . . . | Multidirectional displacement        |
| Y10T 70/5124 | . . . . . | Swinging and hooked end              |
| Y10T 70/5128 | . . . . . | Drawer                               |
| Y10T 70/5133 | . . . . . | Dead bolt                            |
| Y10T 70/5137 | . . . . . | Till                                 |
| Y10T 70/5142 | . . . . . | Combination                          |
| Y10T 70/5146 | . . . . . | Window                               |
| Y10T 70/515  | . . . . . | Sliding sash                         |
| Y10T 70/5155 | . . . . . | Door                                 |
| Y10T 70/5159 | . . . . . | Emergency exit                       |
| Y10T 70/5164 | . . . . . | Links to limit opening               |
| Y10T 70/5168 | . . . . . | Braces                               |
| Y10T 70/5173 | . . . . . | Sliding door                         |
| Y10T 70/5177 | . . . . . | Extending keeper                     |
| Y10T 70/5181 | . . . . . | Rigid or fixed                       |
| Y10T 70/5186 | . . . . . | Extensible                           |
| Y10T 70/519  | . . . . . | Projecting or extending bolt         |
| Y10T 70/5195 | . . . . . | Projectable bolt                     |
| Y10T 70/5199 | . . . . . | Swinging door                        |
| Y10T 70/5204 | . . . . . | Interfitting lock housing and keeper |
| Y10T 70/5208 | . . . . . | Multiple dead bolts                  |
| Y10T 70/5212 | . . . . . | Sliding dead bolt                    |
| Y10T 70/5217 | . . . . . | Swinging dead bolt                   |
| Y10T 70/5221 | . . . . . | Locking latch bolt, biased           |
| Y10T 70/5226 | . . . . . | Combined dead bolt and latching bolt |
| Y10T 70/523  | . . . . . | Multiple dead bolts                  |
| Y10T 70/5235 | . . . . . | Multiple latch bolts                 |
| Y10T 70/5239 | . . . . . | Dead bolt, dogged latch bolt         |
| Y10T 70/5243 | . . . . . | Manually dogged latch bolt           |
| Y10T 70/5246 | . . . . . | Dead bolts                           |
| Y10T 70/5248 | . . . . . | Multiple                             |
| Y10T 70/5252 | . . . . . | Sliding and swinging                 |
| Y10T 70/5257 | . . . . . | Combination operable only            |
| Y10T 70/5261 | . . . . . | Key operable only                    |
| Y10T 70/5265 | . . . . . | Sliding and rotary                   |
| Y10T 70/527  | . . . . . | Sliding                              |
| Y10T 70/5274 | . . . . . | Combination operable only            |
| Y10T 70/5279 | . . . . . | Key operable only                    |
| Y10T 70/5283 | . . . . . | Swinging                             |
| Y10T 70/5288 | . . . . . | Combination operable only            |

|              |           |  |
|--------------|-----------|--|
| Y10T 70/5292 | . . . . . | Key operable only  |
| Y10T 70/5296 | . . . . . | Single   |
| Y10T 70/5301 | . . . . . | Sliding and swinging   |
| Y10T 70/5305 | . . . . . | Combination operable only  |
| Y10T 70/531  | . . . . . | Key operable only  |
| Y10T 70/5314 | . . . . . | Sliding and rotary   |
| Y10T 70/5319 | . . . . . | Sliding  |
| Y10T 70/5323 | . . . . . | Multidirectional displacement                                    |
| Y10T 70/5327 | . . . . . | Keeper interlocking  |
| Y10T 70/5332 | . . . . . | Curved   |
| Y10T 70/5336 | . . . . . | Combination operable only  |
| Y10T 70/5341 | . . . . . | Key operable only  |
| Y10T 70/5345 | . . . . . | Swinging   |
| Y10T 70/535  | . . . . . | Keeper and housing interlocking                                  |
| Y10T 70/5354 | . . . . . | With hooked end  |
| Y10T 70/5358 | . . . . . | Combination operable only  |
| Y10T 70/5363 | . . . . . | Key operable only  |
| Y10T 70/5367 | . . . . . | Screw  |
| Y10T 70/5372 | . . . . . | Locking latch bolts, biased                                      |
| Y10T 70/5376 | . . . . . | Keeper interlocking  |
| Y10T 70/5381 | . . . . . | Projectable beyond normal biased position                        |
| Y10T 70/5385 | . . . . . | Spring projected   |
| Y10T 70/5389 | . . . . . | Manually operable  |
| Y10T 70/5394 | . . . . . | Directly acting dog for exterior, manual, bolt manipulator       |
| Y10T 70/5398 | . . . . . | Related dog for interior, manual, bolt manipulator               |
| Y10T 70/5403 | . . . . . | Dog having a dog   |
| Y10T 70/5407 | . . . . . | Related dogging means for latch-bolt                             |
| Y10T 70/5412 | . . . . . | Dog and dog actuator always interconnected                       |
| Y10T 70/5416 | . . . . . | Exterior manipulator declutched from bolt when dogged            |
| Y10T 70/542  | . . . . . | Manual dog-controller concentric with bolt manipulator           |
| Y10T 70/5425 | . . . . . | Shiftable rollback serves as dog                                 |
| Y10T 70/5429 | . . . . . | Additional dog-controller key actuated for dogging and undogging |
| Y10T 70/5434 | . . . . . | Dog-controller axially slidable and axially rotatable            |
| Y10T 70/5438 | . . . . . | Dog-controller rotatable   |
| Y10T 70/5442 | . . . . . | Key-actuated lock releases dog                                   |
| Y10T 70/5447 | . . . . . | Manual bolt-manipulator operation releases dog                   |
| Y10T 70/5451 | . . . . . | Manual bolt-manipulator operation releases dog                   |
| Y10T 70/5456 | . . . . . | Interior manual bolt-manipulator serves as dog-controller        |

|              |           |   |
|--------------|-----------|---|
| Y10T 70/546  | . . . . . | For both dogging and undogging                                |
| Y10T 70/5465 | . . . . . | Manual dog-controller   |
| Y10T 70/5469 | . . . . . | With additional lock actuated dog-controller                  |
| Y10T 70/5473 | . . . . . | Additional dog-controller controls both dogging and undogging |
| Y10T 70/5478 | . . . . . | Accessible at door edge                                       |
| Y10T 70/5482 | . . . . . | Slidable only   |
| Y10T 70/5487 | . . . . . | Manual bolt-manipulator is slidable only                      |
| Y10T 70/5491 | . . . . . | Manual bolt-manipulator is lever                              |
| Y10T 70/5496 | . . . . . | Freely movable external manipulator                           |
| Y10T 70/55   | . . . . . | Dogged bolt or connections                                    |
| Y10T 70/5504 | . . . . . | Automatic   |
| Y10T 70/5509 | . . . . . | Snub bolt   |
| Y10T 70/5513 | . . . . . | By manipulator  |
| Y10T 70/5518 | . . . . . | Connections only  |
| Y10T 70/5522 | . . . . . | Gravity projected   |
| Y10T 70/5527 | . . . . . | Projecting mechanism is lock controlled                       |
| Y10T 70/5531 | . . . . . | Combination and/or key operable                               |
| Y10T 70/5535 | . . . . . | Trip release  |
| Y10T 70/554  | . . . . . | Cover, lid, cap, encasing shield                              |
| Y10T 70/5544 | . . . . . | Pivoted   |
| Y10T 70/5549 | . . . . . | Cover-carried lock  |
| Y10T 70/5553 | . . . . . | Dead bolt   |
| Y10T 70/5558 | . . . . . | Latching bolt   |
| Y10T 70/5562 | . . . . . | Removable   |
| Y10T 70/5566 | . . . . . | External locking devices                                      |
| Y10T 70/5571 | . . . . . | Freely movable when locked                                    |
| Y10T 70/5575 | . . . . . | Directly seating  |
| Y10T 70/558  | . . . . . | Cover-carried lock  |
| Y10T 70/5584 | . . . . . | Dead bolt   |
| Y10T 70/5589 | . . . . . | Latching bolt   |
| Y10T 70/5593 | . . . . . | Movably seating   |
| Y10T 70/5597 | . . . . . | Cover-carried lock  |
| Y10T 70/5602 | . . . . . | Dead bolt   |
| Y10T 70/5606 | . . . . . | Latching bolt   |
| Y10T 70/5611 | . . . . . | For control and machine elements                              |
| Y10T 70/5615 | . . . . . | Valve   |
| Y10T 70/5619 | . . . . . | Locked stationary   |
| Y10T 70/5624 | . . . . . | Externally mounted locking device                             |
| Y10T 70/5628 | . . . . . | Valve encasing  |

|              |           |                                   |
|--------------|-----------|-----------------------------------|
| Y10T 70/5633 | . . . . . | Housing-carried lock              |
| Y10T 70/5637 | . . . . . | With padlock                      |
| Y10T 70/5642 | . . .     | Rod                               |
| Y10T 70/5646 | . . .     | Rotary shaft                      |
| Y10T 70/565  | . . . .   | Locked stationary                 |
| Y10T 70/5655 | . . . . . | Housing-carried lock              |
| Y10T 70/5659 | . . . . . | Dead bolt                         |
| Y10T 70/5664 | . . . . . | Latching bolt                     |
| Y10T 70/5668 | . . . . . | Shaft-carried lock                |
| Y10T 70/5673 | . . . . . | Freely movable when locked        |
| Y10T 70/5677 | . . . . . | Shaft-carried clutch              |
| Y10T 70/5681 | . . .     | Gear                              |
| Y10T 70/5686 | . . . .   | Planetary                         |
| Y10T 70/569  | . . .     | Lever                             |
| Y10T 70/5695 | . . . .   | Guide                             |
| Y10T 70/5699 | . . . . . | Quadrant                          |
| Y10T 70/5704 | . . . . . | Lever-carried lock                |
| Y10T 70/5708 | . . . . . | Fixed lever-receiving keeper      |
| Y10T 70/5712 | . . . . . | Lever-carried lock                |
| Y10T 70/5717 | . . . .   | Multiple                          |
| Y10T 70/5721 | . . . . . | Externally mounted locking device |
| Y10T 70/5726 | . . . . . | With padlock                      |
| Y10T 70/573  | . . . .   | Single                            |
| Y10T 70/5735 | . . . . . | Externally mounted locking device |
| Y10T 70/5739 | . . . . . | With padlock                      |
| Y10T 70/5743 | . . . . . | Disconnectable                    |
| Y10T 70/5748 | . . . . . | Foldable                          |
| Y10T 70/5752 | . . . . . | Universal mounting                |
| Y10T 70/5757 | . . .     | Handle, handwheel or knob         |
| Y10T 70/5761 | . . . .   | Retractable or flush handle       |
| Y10T 70/5765 | . . . .   | Rotary or swinging                |
| Y10T 70/577  | . . . . . | Locked stationary                 |
| Y10T 70/5774 | . . . . . | Externally mounted locking device |
| Y10T 70/5779 | . . . . . | With padlock                      |
| Y10T 70/5783 | . . . . . | Combination lock                  |
| Y10T 70/5788 | . . . . . | Push pin or button                |
| Y10T 70/5792 | . . . . . | Handle-carried key lock           |
| Y10T 70/5796 | . . . . . | Coaxially mounted                 |
| Y10T 70/5801 | . . . . . | Axially movable bolt              |
| Y10T 70/5805 | . . . . . | Freely movable when locked        |

|              |           |   |
|--------------|-----------|---|
| Y10T 70/581  | . . . . . | Combination lock                        |
| Y10T 70/5814 | . . . . . | Push pin or button                      |
| Y10T 70/5819 | . . . . . | Handle-carried key lock                 |
| Y10T 70/5823 | . . . . . | Coaxial clutch connection               |
| Y10T 70/5827 | . . . . . | Axially movable clutch                  |
| Y10T 70/5832 | . . . . . | Lock and handle assembly                |
| Y10T 70/5836 | . . . . . | Wheel                                   |
| Y10T 70/5841 | . . . . . | Rotation blocking                       |
| Y10T 70/5845 | . . . . . | Spoke gap traversing type               |
| Y10T 70/585  | . . . . . | Brake type                              |
| Y10T 70/5854 | . . . . . | Bolt, nut, stud, stud-cap               |
| Y10T 70/5858 | . . . . . | Locked stationary                       |
| Y10T 70/5863 | . . . . . | Freely movable when locked              |
| Y10T 70/5867 | . . . . . | Encased                                 |
| Y10T 70/5872 | . . . . . | For cycles                              |
| Y10T 70/5876 | . . . . . | Anchors                                 |
| Y10T 70/5881 | . . . . . | Stands                                  |
| Y10T 70/5885 | . . . . . | Drive                                   |
| Y10T 70/5889 | . . . . . | For automotive vehicles                 |
| Y10T 70/5894 | . . . . . | Plural point                            |
| Y10T 70/5898 | . . . . . | With switch                             |
| Y10T 70/5903 | . . . . . | Hood                                    |
| Y10T 70/5907 | . . . . . | With switch                             |
| Y10T 70/5912 | . . . . . | Fuel valve                              |
| Y10T 70/5916 | . . . . . | With switch                             |
| Y10T 70/592  | . . . . . | Cap combined                            |
| Y10T 70/5925 | . . . . . | Transmission                            |
| Y10T 70/5929 | . . . . . | Cover combined                          |
| Y10T 70/5934 | . . . . . | Selective-type shift rod, fork or block |
| Y10T 70/5938 | . . . . . | With switch                             |
| Y10T 70/5942 | . . . . . | Planetary type                          |
| Y10T 70/5947 | . . . . . | With switch                             |
| Y10T 70/5951 | . . . . . | With switch                             |
| Y10T 70/5956 | . . . . . | Steering mechanism with switch          |
| Y10T 70/596  | . . . . . | Pilot wheel control or linkage          |
| Y10T 70/5965 | . . . . . | Control levers with switch              |
| Y10T 70/5969 | . . . . . | Other element with switch               |
| Y10T 70/5973 | . . . . . | Remote control                          |
| Y10T 70/5978 | . . . . . | With switch                             |
| Y10T 70/5982 | . . . . . | Accessories                             |

|              |   |
|--------------|---|
| Y10T 70/5987 | . . . . Spare or mounted wheel or tire  |
| Y10T 70/5991 | . . . . . Tire or rim only  |
| Y10T 70/5996 | . . For seats   |
| Y10T 70/60   | . Systems   |
| Y10T 70/625  | . . Operation and control   |
| Y10T 70/65   | . . . Central control   |
| Y10T 70/675  | . . . Serially operable   |
| Y10T 70/70   | . Operating mechanism   |
| Y10T 70/7006 | . . Predetermined time interval controlled  |
| Y10T 70/7011 | . . . Positively initiated delay interval   |
| Y10T 70/7017 | . . . . Interval terminating  |
| Y10T 70/7023 | . . . . Repeating interval  |
| Y10T 70/7028 | . . . Electric  |
| Y10T 70/7034 | . . . Clockwork control   |
| Y10T 70/704  | . . . . Continuously operating once initiated   |
| Y10T 70/7045 | . . . . . Emergency release   |
| Y10T 70/7051 | . . Using a powered device [e.g., motor]  |
| Y10T 70/7057 | . . . Permanent magnet  |
| Y10T 70/7062 | . . . Electrical type [e.g., solenoid]  |
| Y10T 70/7068 | . . . . Actuated after correct combination recognized [e.g., numerical, alphabetical, or magnet[s] pattern] |
| Y10T 70/7073 | . . . . . Including use of a key  |
| Y10T 70/7079 | . . . . . Key rotated [e.g., Eurocylinder]  |
| Y10T 70/7085 | . . . . . Using a dial having indicia or pointer and indicia  |
| Y10T 70/709  | . . . . . Plural interdependent or plural independently operable tumbler sets                               |
| Y10T 70/7096 | . . . . . With mechanism having rocker arm or linked bars   |
| Y10T 70/7102 | . . . . And details of blocking system [e.g., linkage, latch, pawl, spring]                                 |
| Y10T 70/7107 | . . . . And alternately mechanically actuated by a key, dial, etc.  |
| Y10T 70/7113 | . . . . Projected and retracted electrically  |
| Y10T 70/7119 | . . . . Projected electrically only   |
| Y10T 70/7124 | . . . . Retracted electrically only   |
| Y10T 70/713  | . . . . Dogging manual operator   |
| Y10T 70/7136 | . . . . Key initiated actuation of device   |
| Y10T 70/7141 | . . Combination and key   |
| Y10T 70/7147 | . . Combination or key  |
| Y10T 70/7153 | . . Combination   |
| Y10T 70/7158 | . . . Individual blocking elements  |
| Y10T 70/7164 | . . . . Selectively operable  |
| Y10T 70/7169 | . . . Complex movement or puzzle type   |

|              |           |                                    |
|--------------|-----------|------------------------------------|
| Y10T 70/7175 | . . . .   | Labyrinthian passage               |
| Y10T 70/7181 | . . .     | Tumbler type                       |
| Y10T 70/7186 | . . . .   | Plural interdependent sets         |
| Y10T 70/7192 | . . . .   | Plural independently operable sets |
| Y10T 70/7198 | . . . .   | Single tumbler set                 |
| Y10T 70/7203 | . . . . . | With ball or roller                |
| Y10T 70/7209 | . . . . . | Intersect sliding tumblers         |
| Y10T 70/7215 | . . . . . | Individually set sliding tumblers  |
| Y10T 70/722  | . . . . . | Manually operable                  |
| Y10T 70/7226 | . . . . . | Associated movable operator        |
| Y10T 70/7232 | . . . . . | Removable                          |
| Y10T 70/7237 | . . . . . | Rotary or swinging tumblers        |
| Y10T 70/7243 | . . . . . | Intersect tumblers                 |
| Y10T 70/7249 | . . . . . | Tumblers released                  |
| Y10T 70/7254 | . . . . . | Fence held spaced from tumblers    |
| Y10T 70/726  | . . . . . | Individually set                   |
| Y10T 70/7266 | . . . . . | Movable selector                   |
| Y10T 70/7271 | . . . . . | Associated movable operator        |
| Y10T 70/7277 | . . . . . | Removable                          |
| Y10T 70/7282 | . . . . . | Pin or rod and slot                |
| Y10T 70/7288 | . . . . . | Spindle operator                   |
| Y10T 70/7294 | . . . . . | Concentric spindles                |
| Y10T 70/7299 | . . . . . | Axially shiftable spindle          |
| Y10T 70/7305 | . . . . . | Manually operable                  |
| Y10T 70/7311 | . . .     | Step-by-step                       |
| Y10T 70/7316 | . . .     | Combination upsetting              |
| Y10T 70/7322 | . . .     | Permutation                        |
| Y10T 70/7328 | . . . .   | Compound tumblers                  |
| Y10T 70/7333 | . . . . . | With fastener or holder            |
| Y10T 70/7339 | . . . . . | Pin and socket                     |
| Y10T 70/7345 | . . . . . | Removable change element           |
| Y10T 70/735  | . . .     | Operating elements                 |
| Y10T 70/7356 | . . . .   | Fences                             |
| Y10T 70/7362 | . . . . . | Bolt or lock housing supported     |
| Y10T 70/7367 | . . . . . | Tumbler structure and position     |
| Y10T 70/7373 | . . . . . | Nested                             |
| Y10T 70/7379 | . . . . . | Variant diameter                   |
| Y10T 70/7384 | . . . . . | Mounts                             |
| Y10T 70/739  | . . . . . | Motion-restraining means           |
| Y10T 70/7395 | . . . . . | Friction holder                    |

|              |           |  |
|--------------|-----------|--|
| Y10T 70/7401 | . . . .   | Spindles                                       |
| Y10T 70/7407 | . . . .   | Operating indicators                           |
| Y10T 70/7412 | . . . . . | Portable combination setting guide             |
| Y10T 70/7418 | . . . . . | Dials  |
| Y10T 70/7424 | . . . .   | Tampering prevention or attach defeating       |
| Y10T 70/7429 | . . . .   | Resonance type                                 |
| Y10T 70/7435 | . . . .   | Hidden or covered dial                         |
| Y10T 70/7441 | . .       | Key  |
| Y10T 70/7446 | . . .     | Multiple keys                                  |
| Y10T 70/7452 | . . . .   | Selective shutout type                         |
| Y10T 70/7458 | . . . .   | Interdependent                                 |
| Y10T 70/7463 | . . . .   | Master- and change-key                         |
| Y10T 70/7469 | . . . . . | Change-key shutout                             |
| Y10T 70/7475 | . . . . . | Submaster- and change-key                      |
| Y10T 70/748  | . . . . . | Change-key shutout                             |
| Y10T 70/7486 | . . .     | Single key                                     |
| Y10T 70/7492 | . . . .   | Tumblerless push or pull key                   |
| Y10T 70/7497 | . . . .   | Tumblerless warded                             |
| Y10T 70/7503 | . . . .   | Tumbler and ward type                          |
| Y10T 70/7508 | . . . .   | Tumbler type                                   |
| Y10T 70/7514 | . . . . . | Sliding and rotary or swinging tumblers        |
| Y10T 70/752  | . . . . . | Sliding tumblers                               |
| Y10T 70/7525 | . . . . . | Longitudinal                                   |
| Y10T 70/7531 | . . . . . | Transverse                                     |
| Y10T 70/7537 | . . . . . | Rotary or swinging tumblers                    |
| Y10T 70/7542 | . . . . . | Single set                                     |
| Y10T 70/7548 | . . . . . | Directly key engaged                           |
| Y10T 70/7554 | . . . . . | Cylinder type with auxiliary tumblers or wards |
| Y10T 70/7559 | . . . . . | Cylinder type                                  |
| Y10T 70/7565 | . . . . . | Plural tumbler sets                            |
| Y10T 70/7571 | . . . . . | Concentric tumblers                            |
| Y10T 70/7576 | . . . . . | Sliding and rotary plug                        |
| Y10T 70/7582 | . . . . . | Sliding plug                                   |
| Y10T 70/7588 | . . . . . | Rotary plug                                    |
| Y10T 70/7593 | . . . . . | Sliding tumblers                               |
| Y10T 70/7599 | . . . . . | Transverse of plug                             |
| Y10T 70/7605 | . . . . . | Pin tumblers                                   |
| Y10T 70/761  | . . . . . | Rotatable pins [e.g., MEDECO lock]             |
| Y10T 70/7616 | . . . . . | Including sidebar                              |
| Y10T 70/7621 | . . . . . | Including sidebar                              |



|              |           |  |
|--------------|-----------|--|
| Y10T 70/7627 | . . . . . | Rotary or swinging tumblers            |
| Y10T 70/7633 | . . . . . | Transverse of plug                     |
| Y10T 70/7638 | . . . . . | Cylinder and plug assembly             |
| Y10T 70/7644 | . . . . . | Key- and tool-controlled               |
| Y10T 70/765  | . . . . . | Key only controlled                    |
| Y10T 70/7655 | . . . . . | Cylinder attaching or mounting means   |
| Y10T 70/7661 | . . . . . | Detachable or removable cylinder       |
| Y10T 70/7667 | . . . . . | Operating elements, parts and adjuncts |
| Y10T 70/7672 | . . . . . | Cylinder                               |
| Y10T 70/7678 | . . . . . | Adjustable                             |
| Y10T 70/7684 | . . . . . | Plug                                   |
| Y10T 70/7689 | . . . . . | Tumblers                               |
| Y10T 70/7695 | . . . . . | Plate                                  |
| Y10T 70/7701 | . . . . . | Pin                                    |
| Y10T 70/7706 | . . . . . | Operating connections                  |
| Y10T 70/7712 | . . . . . | Rollbacks                              |
| Y10T 70/7718 | . . . . . | Intermediate                           |
| Y10T 70/7723 | . . . . . | Cylinder rings                         |
| Y10T 70/7729 | . . .     | Permutation                            |
| Y10T 70/7734 | . . . .   | Automatically key set combinations     |
| Y10T 70/774  | . . . .   | Adjustable tumblers                    |
| Y10T 70/7746 | . . . .   | Removable change element               |
| Y10T 70/7751 | . . .     | With ball or roller                    |
| Y10T 70/7757 | . . .     | Push or pull key operation             |
| Y10T 70/7763 | . . .     | Key ejecting                           |
| Y10T 70/7768 | . . .     | Key-removal preventing                 |
| Y10T 70/7774 | . . .     | False or picking key trapping          |
| Y10T 70/778  | . . .     | Operating elements                     |
| Y10T 70/7785 | . . . .   | Tumblers                               |
| Y10T 70/7791 | . . . .   | Keys                                   |
| Y10T 70/7797 | . . . .   | Picking                                |
| Y10T 70/7802 | . . . .   | Multi-part structures                  |
| Y10T 70/7808 | . . . .   | With foldable shank or stem            |
| Y10T 70/7814 | . . . .   | With extensible shank or stem          |
| Y10T 70/7819 | . . . .   | With slidable bit portion              |
| Y10T 70/7825 | . . . .   | With pivoted or swinging bit portion   |
| Y10T 70/7831 | . . . .   | Nested second key                      |
| Y10T 70/7836 | . . . .   | Plural shanks, stems or bit wings      |
| Y10T 70/7842 | . . . .   | Single shank or stem                   |
| Y10T 70/7847 | . . . .   | Round rigid                            |

|              |           |  |
|--------------|-----------|--|
| Y10T 70/7853 | . . . . . | Tubular                                      |
| Y10T 70/7859 | . . . . . | Flat rigid                                   |
| Y10T 70/7864 | . . . . . | Cylinder lock type                           |
| Y10T 70/787  | . . . . . | Irregular nonplanar or undulated             |
| Y10T 70/7876 | . . . . . | Bow or head                                  |
| Y10T 70/7881 | . . . . . | Bitting                                      |
| Y10T 70/7887 | . . . . . | Frangible                                    |
| Y10T 70/7893 | . . . . . | Permutation                                  |
| Y10T 70/7898 | . . . . . | Threaded                                     |
| Y10T 70/7904 | . . . . . | Magnetic features                            |
| Y10T 70/791  | . . . . . | Ejecting feature                             |
| Y10T 70/7915 | . . .     | Tampering prevention or attack defeating     |
| Y10T 70/7921 | . . . .   | Armoring                                     |
| Y10T 70/7927 | . . . .   | Anti-jimmy                                   |
| Y10T 70/7932 | . . . .   | Anti-pick                                    |
| Y10T 70/7938 | . . . .   | Guard ward                                   |
| Y10T 70/7944 | . . . .   | Guard tumbler                                |
| Y10T 70/7949 | . . . .   | Yielding or frangible connections            |
| Y10T 70/7955 | . . . .   | Keyhole guards                               |
| Y10T 70/796  | . . . . . | Portable                                     |
| Y10T 70/7966 | . . . . . | Combination-controlled                       |
| Y10T 70/7972 | . . . . . | Portable                                     |
| Y10T 70/7977 | . . . . . | Key-controlled                               |
| Y10T 70/7983 | . . . . . | Portable                                     |
| Y10T 70/7989 | . . . .   | Key securers, fasteners or retainers         |
| Y10T 70/7994 | . . . . . | Portable                                     |
| Y10T 70/80   | . .       | Parts, attachments, accessories and adjuncts |
| Y10T 70/8027 | . .       | Condition indicators                         |
| Y10T 70/8054 | . . .     | With recorder                                |
| Y10T 70/8081 | . . . .   | Electric                                     |
| Y10T 70/8108 | . . . .   | Padlock                                      |
| Y10T 70/8135 | . . .     | With register                                |
| Y10T 70/8162 | . . . .   | Padlock                                      |
| Y10T 70/8189 | . . .     | Contactual feeler                            |
| Y10T 70/8216 | . . .     | Tampering detector                           |
| Y10T 70/8243 | . . . .   | With seal                                    |
| Y10T 70/827  | . . .     | Attention-directing                          |
| Y10T 70/8297 | . .       | For combination-operated mechanism           |
| Y10T 70/8324 | . . .     | Housings                                     |
| Y10T 70/8351 | . . .     | Operating attachments                        |

|              |         |   |
|--------------|---------|---|
| Y10T 70/8378 | . . .   | Knobs, hand grips, etc.                                     |
| Y10T 70/8405 | . . .   | Combination finders   |
| Y10T 70/8432 | . .     | For key-operated mechanism                                  |
| Y10T 70/8459 | . . .   | Housings  |
| Y10T 70/8486 | . . . . | Cylindrical   |
| Y10T 70/8514 | . . . . | Face plate  |
| Y10T 70/8541 | . . . . | Mounting arrangements                                       |
| Y10T 70/8568 | . . .   | Escutcheons   |
| Y10T 70/8595 | . . .   | Key guides, internal  |
| Y10T 70/8622 | . . .   | Key insertion guides  |
| Y10T 70/8649 | . . .   | Keyhole covers  |
| Y10T 70/8676 | . . .   | Key holders   |
| Y10T 70/8703 | . . . . | Flexible  |
| Y10T 70/873  | . . . . | One-piece   |
| Y10T 70/8757 | . . . . | Releasable catches  |
| Y10T 70/8784 | . . . . | Parallel key loops, coaxially mounted, individually movable |
| Y10T 70/8811 | . . .   | Key identification  |
| Y10T 70/8838 | . .     | Adjustment provisions                                       |
| Y10T 70/8865 | . .     | Reversible structures                                       |
| Y10T 70/8892 | . .     | Silencers or mufflers                                       |
| Y10T 70/8919 | . .     | Antifriction provisions                                     |
| Y10T 70/8946 | . .     | Emergency unlocking or release arrangements                 |
| Y10T 70/8973 | . .     | Mounting aids, guides and assistors                         |

#### **Former US Class 74 Series**

|                   |  |
|-------------------|--|
| <b>Y10T 74/00</b> | <b>Machine element or mechanism</b>                        |
| Y10T 74/10        | . High frequency vibratory devices                         |
| Y10T 74/11        | . Tripping mechanism                                       |
| Y10T 74/111       | . . Speed controlled                                       |
| Y10T 74/113       | . . . Valve gear trips [e.g., steam engine "Corliss" type] |
| Y10T 74/114       | . . Retarded   |
| Y10T 74/115       | . . . Plural, sequential, trip actuations                  |
| Y10T 74/116       | . . . Clock train  |
| Y10T 74/118       | . . . . Winding knob trip [e.g., alarm mechanism]          |
| Y10T 74/119       | . . Hit and miss   |
| Y10T 74/12        | . Gyroscopes   |
| Y10T 74/1204      | . . with caging or parking means                           |
| Y10T 74/1207      | . . . Rotor spin and cage release type                     |
| Y10T 74/1211      | . . . and resetting means                                  |

|              |  |
|--------------|--|
| Y10T 74/1214 | . . with gimbal lock preventing means                        |
| Y10T 74/1218 | . . Combined   |
| Y10T 74/1221 | . . Multiple gyroscopes                                      |
| Y10T 74/1225 | . . . with rotor drives                                      |
| Y10T 74/1229 | . . Gyroscope control  |
| Y10T 74/1232 | . . . Erecting   |
| Y10T 74/1236 | . . . . by plural diverse forces                             |
| Y10T 74/1239 | . . . . by jet   |
| Y10T 74/1243 | . . . . by weight  |
| Y10T 74/1246 | . . . . by friction  |
| Y10T 74/125  | . . . . by magnetic field                                    |
| Y10T 74/1254 | . . . . by motor torque                                      |
| Y10T 74/1257 | . . . Damping  |
| Y10T 74/1261 | . . with pick off  |
| Y10T 74/1264 | . . . Optical  |
| Y10T 74/1268 | . . . Pneumatic  |
| Y10T 74/1271 | . . . Conducting liquid                                      |
| Y10T 74/1275 | . . . Electrical   |
| Y10T 74/1279 | . . . Electrical and magnetic                                |
| Y10T 74/1282 | . . with rotor drive   |
| Y10T 74/1286 | . . Vertical gyroscopes                                      |
| Y10T 74/1289 | . . Horizontal gyroscopes                                    |
| Y10T 74/1293 | . . Flexure hinges for gyros                                 |
| Y10T 74/1296 | . . Flywheel structure                                       |
| Y10T 74/13   | . Machine starters   |
| Y10T 74/131  | . . Automatic  |
| Y10T 74/132  | . . . Separate power mesher                                  |
| Y10T 74/133  | . . . Holders  |
| Y10T 74/134  | . . . Clutch connection                                      |
| Y10T 74/136  | . . . Worm and wheel   |
| Y10T 74/137  | . . . Reduction gearing                                      |
| Y10T 74/138  | . . Radial meshing   |
| Y10T 74/139  | . . Cam operated   |
| Y10T 74/14   | . Rotary member or shaft indexing, e.g., tool or work turret |
| Y10T 74/1406 | . . with safety device or drive disconnect                   |
| Y10T 74/1412 | . . with locating point adjusting                            |
| Y10T 74/1418 | . . Preselected indexed position                             |
| Y10T 74/1424 | . . . Sequential   |
| Y10T 74/1429 | . . . . Skip position  |
| Y10T 74/1435 | . . . . Held by torque                                       |

|              |  |
|--------------|--|
| Y10T 74/1441 | . . . . Geneva or mutilated gear drive                                 |
| Y10T 74/1447 | . . . . Velocity control   |
| Y10T 74/1453 | . . . . Interlocked rotator and brake                                  |
| Y10T 74/1459 | . . . . . Diverse-type brakes  |
| Y10T 74/1465 | . . . . . with axially acting friction brake                           |
| Y10T 74/1471 | . . Plural operators or input drives                                   |
| Y10T 74/1476 | . . with means to axially shift shaft                                  |
| Y10T 74/1482 | . . Single revolution input effects desired fractional output          |
| Y10T 74/1488 | . . Control means  |
| Y10T 74/1494 | . . Locking means  |
| Y10T 74/15   | . Intermittent grip type mechanical movement                           |
| Y10T 74/1502 | . . Escapement   |
| Y10T 74/1503 | . . Rotary to intermittent unidirectional motion                       |
| Y10T 74/1505 | . . . Automatically controlled   |
| Y10T 74/1506 | . . . . Speed  |
| Y10T 74/1508 | . . . Rotary crank or eccentric drive                                  |
| Y10T 74/151  | . . . . Adjustable   |
| Y10T 74/1511 | . . . . Lever transmitter  |
| Y10T 74/1513 | . . . . . Adjustable leverage  |
| Y10T 74/1515 | . . . . Rack and pinion transmitter                                    |
| Y10T 74/1516 | . . . . . Adjustable throw   |
| Y10T 74/1518 | . . . . Rotary cam drive   |
| Y10T 74/1519 | . . . . . Adjustable throw   |
| Y10T 74/1521 | . . . . . Radial cam   |
| Y10T 74/1523 | . . . . . Radial cam   |
| Y10T 74/1524 | . . . Intermittently engaged clutch                                    |
| Y10T 74/1526 | . . Oscillation or reciprocation to intermittent unidirectional motion |
| Y10T 74/1527 | . . . Screw and nut devices  |
| Y10T 74/1529 | . . . Slide actuator   |
| Y10T 74/1531 | . . . . Multiple acting  |
| Y10T 74/1532 | . . . Rack actuator  |
| Y10T 74/1534 | . . . . Multiple acting  |
| Y10T 74/1535 | . . . . . Inwardly facing racks  |
| Y10T 74/1537 | . . . . Oscillating  |
| Y10T 74/1539 | . . . . . Multiple acting  |
| Y10T 74/154  | . . . . . Inwardly facing racks  |
| Y10T 74/1542 | . . . Strap actuator   |
| Y10T 74/1544 | . . . . Multiple acting  |
| Y10T 74/1545 | . . . . . Spring or weight return                                      |
| Y10T 74/1547 | . . . . Single acting  |

|              |           |   |
|--------------|-----------|---|
| Y10T 74/1548 | . . . . . | Engine starter type   |
| Y10T 74/155  | . . . . . | Spring or weight return   |
| Y10T 74/1552 | . . . . . | Spring or weight return   |
| Y10T 74/1553 | . . .     | Lever actuator  |
| Y10T 74/1555 | . . . .   | Rotary driven element   |
| Y10T 74/1556 | . . . . . | Multiple acting   |
| Y10T 74/1558 | . .       | Grip units and features   |
| Y10T 74/156  | . . .     | Compound movement handle  |
| Y10T 74/1561 | . . . .   | Reversible  |
| Y10T 74/1563 | . . . .   | Transverse pivots   |
| Y10T 74/1565 | . . .     | Gripper releasing devices   |
| Y10T 74/1566 | . . . .   | Power pawl lifter   |
| Y10T 74/1568 | . . . . . | Automatic   |
| Y10T 74/1569 | . . . . . | Idle stroke   |
| Y10T 74/1571 | . . . . . | Cooperating holding pawl  |
| Y10T 74/1573 | . . . . . | Power stroke  |
| Y10T 74/1574 | . . . . . | Cooperating holding pawl  |
| Y10T 74/1576 | . . . .   | Holding pawl lifter   |
| Y10T 74/1577 | . . .     | Gripper mountings, lever  |
| Y10T 74/1579 | . . . .   | Reversible  |
| Y10T 74/1581 | . . . .   | Multiple acting   |
| Y10T 74/1582 | . . . . . | Single ratchet or clutch  |
| Y10T 74/1584 | . . .     | Gripper mountings, slide  |
| Y10T 74/1585 | . . . .   | Multiple acting   |
| Y10T 74/1587 | . . .     | Grip features   |
| Y10T 74/1589 | . . . .   | Driving band  |
| Y10T 74/159  | . . . . . | Clamping  |
| Y10T 74/1592 | . . . .   | Driven band and gripper   |
| Y10T 74/1594 | . . . . . | Positive grip   |
| Y10T 74/1595 | . . . .   | Driving ratchet-bar or rack   |
| Y10T 74/1597 | . . . . . | Multiple acting   |
| Y10T 74/1598 | . . . .   | Driven ratchet-bar and power dog  |
| Y10T 74/16   | . . . . . | Alternating-motion driven device with means during operation to adjust stroke |
| Y10T 74/1608 | . .       | Constant length stroke with means to displace end limits                      |
| Y10T 74/1616 | . . .     | Cyclical displacement responsive to the alternating-motion                    |
| Y10T 74/1625 | . .       | Stroke adjustable to zero and/or reversible in phasing                        |
| Y10T 74/1633 | . . .     | Plural driving means to jointly drive the driven device                       |
| Y10T 74/1642 | . . .     | Device driven from selected points on oscillating link                        |
| Y10T 74/165  | . . .     | Driving lever with adjustable pivot point                                     |
| Y10T 74/1658 | . . .     | Eccentric and strap drive, shiftable eccentric                                |

|               |   |
|---------------|---|
| Y10T 74/1667  | . . . . Changing the extent of eccentricity   |
| Y10T 74/1675  | . . . Crank pin drive, shiftable pin  |
| Y10T 74/1683  | . . . Cam and follower drive  |
| Y10T 74/1692  | . . . . Axial-type cam [e.g., wabblers type]  |
| Y10T 74/17    | . Rotary driven device adjustable during operation relative to its supporting structure |
| Y10T 74/173   | . . Screw and nut adjusting means   |
| Y10T 74/177   | . . Rack and pinion adjusting means   |
| Y10T 74/18    | . Mechanical movements  |
| Y10T 74/18008 | . . Oscillating to reciprocating and alternating rotary                                 |
| Y10T 74/18016 | . . Oscillating to reciprocating and intermittent rotary                                |
| Y10T 74/18024 | . . Rotary to reciprocating and rotary  |
| Y10T 74/18032 | . . . Rotary to reciprocating or rotary   |
| Y10T 74/1804  | . . Rotary to reciprocating and alternating rotary                                      |
| Y10T 74/18048 | . . Rotary to reciprocating and intermittent rotary                                     |
| Y10T 74/18056 | . . Rotary to or from reciprocating or oscillating                                      |
| Y10T 74/18064 | . . . Head motions  |
| Y10T 74/18072 | . . . Reciprocating carriage motions  |
| Y10T 74/1808  | . . . . Phonograph type   |
| Y10T 74/18088 | . . . Rack and pinion type  |
| Y10T 74/18096 | . . . . Shifting rack   |
| Y10T 74/18104 | . . . . Shiftable pinion  |
| Y10T 74/18112 | . . . . Segmental pinion  |
| Y10T 74/1812  | . . . . Alternately rotated pinion  |
| Y10T 74/18128 | . . . . Clutchable gears  |
| Y10T 74/18136 | . . . . . Bevel   |
| Y10T 74/18144 | . . . Overcoming dead center  |
| Y10T 74/18152 | . . . Belt or chain carried member  |
| Y10T 74/1816  | . . . Crank, lever, toggle, and slide   |
| Y10T 74/18168 | . . . Crank, lazy-tong, and slide   |
| Y10T 74/18176 | . . . Crank, pitman, lever, and slide   |
| Y10T 74/18182 | . . . . Pump jack type  |
| Y10T 74/18184 | . . . Crank, pitman, and lever  |
| Y10T 74/182   | . . . . Multiple levers   |
| Y10T 74/18208 | . . . Crank, pitman, and slide  |
| Y10T 74/18216 | . . . Crank, lever, and slide   |
| Y10T 74/18224 | . . . . Rack connections  |
| Y10T 74/18232 | . . . Crank and lever   |
| Y10T 74/1824  | . . . . Slidable connections  |
| Y10T 74/18248 | . . . Crank and slide   |

|               |           |  |
|---------------|-----------|--|
| Y10T 74/18256 | . . . .   | Slidable connections [e.g., scotch yoke]                           |
| Y10T 74/18264 | . . .     | Crank and multiple pitmans   |
| Y10T 74/18272 | . . .     | Planetary gearing and slide  |
| Y10T 74/1828  | . . .     | Cam, lever, and slide  |
| Y10T 74/18288 | . . .     | Cam and lever  |
| Y10T 74/18296 | . . .     | Cam and slide  |
| Y10T 74/18304 | . . . .   | Axial cam  |
| Y10T 74/18312 | . . . . . | Grooved  |
| Y10T 74/1832  | . . . . . | Multiple screw   |
| Y10T 74/18328 | . . . . . | Alternately rotated screw  |
| Y10T 74/18336 | . . . .   | Wabblers type  |
| Y10T 74/18344 | . . .     | Unbalanced weights   |
| Y10T 74/18352 | . . .     | Trammel-pitman   |
| Y10T 74/1836  | . .       | Rotary to rotary   |
| Y10T 74/18368 | . . .     | Inertia or centrifugal transmitters                                |
| Y10T 74/18376 | . . .     | Crank, pitman, lever, and crank                                    |
| Y10T 74/18384 | . . .     | Crank, lever, and crank  |
| Y10T 74/18392 | . . .     | Crank, pitman, and crank   |
| Y10T 74/184   | . . .     | Cranks, link connected   |
| Y10T 74/18408 | . . .     | Cranks, slidable connections                                       |
| Y10T 74/18416 | . .       | Rotary to alternating rotary                                       |
| Y10T 74/18424 | . . .     | Mangle connections   |
| Y10T 74/18432 | . . . .   | Shiftable driven gear  |
| Y10T 74/1844  | . . . . . | Central teeth  |
| Y10T 74/18448 | . . . .   | Mutilated gearing connections                                      |
| Y10T 74/18456 | . . .     | Crank, pitman, and lever   |
| Y10T 74/18464 | . . .     | Reciprocating rack connections                                     |
| Y10T 74/18472 | . . . .   | Crank and pitman actuator  |
| Y10T 74/1848  | . . . .   | Simple crank actuator  |
| Y10T 74/18488 | . . .     | Oscillating rack connections                                       |
| Y10T 74/18496 | . . . .   | Mangle actuated  |
| Y10T 74/18504 | . . . .   | Crank and pitman actuator  |
| Y10T 74/18512 | . . .     | Flexible connector type  |
| Y10T 74/1852  | . . .     | Associated inertia devices   |
| Y10T 74/18528 | . .       | Rotary to intermittent unidirectional motion                       |
| Y10T 74/18536 | . . .     | Space machines   |
| Y10T 74/18544 | . .       | Rotary to gyratory   |
| Y10T 74/18552 | . . .     | Unbalanced weight  |
| Y10T 74/1856  | . .       | Reciprocating or oscillating to intermittent unidirectional motion |
| Y10T 74/18568 | . .       | Reciprocating or oscillating to or from alternating rotary         |



|               |           |  |
|---------------|-----------|--|
| Y10T 74/18576 | . . .     | including screw and nut  |
| Y10T 74/18584 | . . . .   | Shaft shorter than nut   |
| Y10T 74/18592 | . . . .   | Auxiliary drive [e.g., fluid piston, etc.] for load  |
| Y10T 74/186   | . . . .   | Alternate power path operable on failure of primary  |
| Y10T 74/18608 | . . . .   | Single input split into two intermediate outputs that are subsequently superposed into a single output         |
| Y10T 74/18616 | . . . .   | Single input, plural outputs   |
| Y10T 74/18624 | . . . .   | Plural inputs, single output   |
| Y10T 74/18632 | . . . . . | Plural nuts driving shaft  |
| Y10T 74/1864  | . . . . . | Shaft and nut driven   |
| Y10T 74/18648 | . . . .   | Carriage surrounding, guided by, and primarily supported by member other than screw [e.g., linear guide, etc.] |
| Y10T 74/18656 | . . . .   | Carriage surrounded, guided, and primarily supported by member other than screw [e.g., linear guide, etc.]     |
| Y10T 74/18664 | . . . .   | Shaft moves through rotary drive means   |
| Y10T 74/18672 | . . . .   | Plural screws in series [e.g., telescoping, etc.]  |
| Y10T 74/1868  | . . . .   | Deflection related   |
| Y10T 74/18688 | . . . .   | Limit stop   |
| Y10T 74/18696 | . . . .   | including means to selectively transmit power [e.g., clutch, etc.]   |
| Y10T 74/18704 | . . . .   | Means to selectively lock or retard screw or nut   |
| Y10T 74/18712 | . . . .   | Contamination related  |
| Y10T 74/1872  | . . . . . | Imperforate enclosure  |
| Y10T 74/18728 | . . . .   | Backlash   |
| Y10T 74/18736 | . . . .   | Pressurized fluid introduced between nut and screw   |
| Y10T 74/18744 | . . . .   | Lubrication  |
| Y10T 74/18752 | . . . .   | Manually driven  |
| Y10T 74/1876  | . . .     | including inertia device   |
| Y10T 74/18768 | . . . .   | with rack and pinion   |
| Y10T 74/18776 | . . . . . | Rectilinear rack   |
| Y10T 74/18784 | . . .     | including bevel gears  |
| Y10T 74/18792 | . . .     | including worm   |
| Y10T 74/188   | . . .     | including spur gear  |
| Y10T 74/18808 | . . . .   | with rack  |
| Y10T 74/18816 | . . . . . | Curvilinear rack   |
| Y10T 74/18824 | . . . . . | with biasing means   |
| Y10T 74/18832 | . . .     | including flexible drive connector [e.g., belt, chain, strand, etc.]   |
| Y10T 74/1884  | . . . .   | with sprocket wheel  |
| Y10T 74/18848 | . . . .   | with pulley  |
| Y10T 74/18856 | . .       | Oscillating to oscillating   |
| Y10T 74/18864 | . . .     | Snap action  |
| Y10T 74/18872 | . . . .   | Plate spring   |

|               |   |
|---------------|---|
| Y10T 74/1888  | . . . Geared connections  |
| Y10T 74/18888 | . . Reciprocating to or from oscillating                                  |
| Y10T 74/18896 | . . . Snap action   |
| Y10T 74/18904 | . . . . Plate spring  |
| Y10T 74/18912 | . . . Compound lever and slide  |
| Y10T 74/1892  | . . . Lever and slide   |
| Y10T 74/18928 | . . . . Straight line motions   |
| Y10T 74/18936 | . . . . Slidable connections  |
| Y10T 74/18944 | . . . . Link connections  |
| Y10T 74/18952 | . . . . toggle transmissions  |
| Y10T 74/1896  | . . . . Cam connections   |
| Y10T 74/18968 | . . . . Flexible connections  |
| Y10T 74/18976 | . . . Rack and pinion   |
| Y10T 74/18984 | . . . Inclined ramp   |
| Y10T 74/18992 | . . Reciprocating to reciprocating  |
| Y10T 74/19    | . Gearing   |
| Y10T 74/19005 | . . Nonplanetary gearing differential type [e.g., gearless differentials] |
| Y10T 74/19009 | . . Single gearing unit includes fluid drive                              |
| Y10T 74/19014 | . . Plural prime movers selectively coupled to common output              |
| Y10T 74/19019 | . . Plural power paths from prime mover                                   |
| Y10T 74/19023 | . . Plural power paths to and/or from gearing                             |
| Y10T 74/19028 | . . . Alternate input connections single hand crank                       |
| Y10T 74/19033 | . . . Fluid drive divides or combines alternate paths                     |
| Y10T 74/19037 | . . . One path includes fluid drive                                       |
| Y10T 74/19042 | . . . Friction-type gearing   |
| Y10T 74/19047 | . . . Worm-type gearing   |
| Y10T 74/19051 | . . . Single driven plural drives   |
| Y10T 74/19056 | . . . . Parallel  |
| Y10T 74/1906  | . . . . Nonparallel   |
| Y10T 74/19065 | . . . . Aligned   |
| Y10T 74/1907  | . . . . Parallel and aligned  |
| Y10T 74/19074 | . . . Single drive plural driven  |
| Y10T 74/19079 | . . . . Parallel  |
| Y10T 74/19084 | . . . . . Spur  |
| Y10T 74/19088 | . . . . . Bevel   |
| Y10T 74/19093 | . . . . . Spur and bevel  |
| Y10T 74/19098 | . . . . . Helical   |
| Y10T 74/19102 | . . . . . Belt or chain   |
| Y10T 74/19107 | . . . . Nonparallel   |
| Y10T 74/19112 | . . . . Aligned   |

|               |  |
|---------------|--|
| Y10T 74/19116 | . . . . . Vehicle  |
| Y10T 74/19121 | . . . . . Concentric   |
| Y10T 74/19126 | . . . Plural drivers plural driven   |
| Y10T 74/1913  | . . . . . Bevel  |
| Y10T 74/19135 | . . . . . Spur   |
| Y10T 74/1914  | . . . Alternate drivers and driven   |
| Y10T 74/19144 | . . . Miscellaneous [plural power paths]   |
| Y10T 74/19149 | . . with fluid drive   |
| Y10T 74/19153 | . . . Condition responsive control   |
| Y10T 74/19158 | . . . with one or more controllers for gearing, fluid drive, or clutch               |
| Y10T 74/19163 | . . . . with interrelated controls   |
| Y10T 74/19167 | . . In series plural interchangeably locked nonplanetary units                       |
| Y10T 74/19172 | . . Reversal of direction of power flow changes power transmission to alternate path |
| Y10T 74/19177 | . . . Input and output exchange functions  |
| Y10T 74/19181 | . . toothed gear and recirculated unconnected elements                               |
| Y10T 74/19186 | . . Alternating rotary or continuous   |
| Y10T 74/19191 | . . Alternating rotary   |
| Y10T 74/19195 | . . . Progressive  |
| Y10T 74/192   | . . . Shiftable and/or slidable gears  |
| Y10T 74/19205 | . . . Clutchable gears   |
| Y10T 74/1921  | . . . . On single driven member  |
| Y10T 74/19214 | . . . . On single driving member   |
| Y10T 74/19219 | . . Interchangeably locked   |
| Y10T 74/19223 | . . . Disconnectable counter shaft   |
| Y10T 74/19228 | . . . Multiple concentric clutch shafts  |
| Y10T 74/19233 | . . . Plurality of counter shafts  |
| Y10T 74/19237 | . . . Internal-external gears  |
| Y10T 74/19242 | . . . Combined gear and clutch   |
| Y10T 74/19247 | . . . . Preselector  |
| Y10T 74/19251 | . . . Control mechanism  |
| Y10T 74/19256 | . . . . Automatic  |
| Y10T 74/1926  | . . . . . Speed responsive   |
| Y10T 74/19265 | . . . . . Governor   |
| Y10T 74/1927  | . . . . . with belt gearing  |
| Y10T 74/19274 | . . . . . torque responsive  |
| Y10T 74/19279 | . . . . Cam operated   |
| Y10T 74/19284 | . . . Meshing assisters  |
| Y10T 74/19288 | . . . . Double clutch and interposed transmission                                    |
| Y10T 74/19293 | . . . Longitudinally slidable  |

|               |           |                                   |
|---------------|-----------|-----------------------------------|
| Y10T 74/19298 | . . . .   | Multiple spur gears               |
| Y10T 74/19302 | . . . . . | with tumbler gear                 |
| Y10T 74/19307 | . . . . . | Selective                         |
| Y10T 74/19312 | . . . . . | Direct clutch and drive           |
| Y10T 74/19316 | . . . . . | Progressive                       |
| Y10T 74/19321 | . . . . . | Direct clutch and drive           |
| Y10T 74/19326 | . . . . . | Fluid operated                    |
| Y10T 74/1933  | . . . . . | Multiple bevel gears              |
| Y10T 74/19335 | . . . . . | Single spur gear                  |
| Y10T 74/1934  | . . . . . | Tumbler and cone                  |
| Y10T 74/19344 | . . . . . | Multiple cone                     |
| Y10T 74/19349 | . . . . . | Single bevel gear                 |
| Y10T 74/19353 | . . . . . | Pin or crown gears                |
| Y10T 74/19358 | . . . . . | Laterally slidable gears          |
| Y10T 74/19363 | . . . . . | Rotary carriage                   |
| Y10T 74/19367 | . . . . . | Swinging carriage                 |
| Y10T 74/19372 | . . . . . | Single forward and reverse speeds |
| Y10T 74/19377 | . . . . . | Slidable keys or clutches         |
| Y10T 74/19381 | . . . . . | Alternative clutch shaft          |
| Y10T 74/19386 | . . . . . | Multiple clutch shafts            |
| Y10T 74/19391 | . . . . . | Progressive                       |
| Y10T 74/19395 | . . . . . | Keys simultaneously slidable      |
| Y10T 74/194   | . . . . . | Selective                         |
| Y10T 74/19405 | . . . . . | Multiple forward and reverse      |
| Y10T 74/19409 | . . . . . | Single forward and reverse        |
| Y10T 74/19414 | . . . . . | Single clutch shaft               |
| Y10T 74/19419 | . . . . . | Progressive                       |
| Y10T 74/19423 | . . . . . | Multiple key                      |
| Y10T 74/19428 | . . . . . | Spur                              |
| Y10T 74/19433 | . . . . . | Fluid operated                    |
| Y10T 74/19437 | . . . . . | Electrically operated             |
| Y10T 74/19442 | . . . . . | Single key                        |
| Y10T 74/19447 | . . . . . | Clutch and ratchet                |
| Y10T 74/19451 | . . . . . | Spur gears                        |
| Y10T 74/19456 | . . . . . | Intermediate clutch               |
| Y10T 74/1946  | . . . . . | Sliding clutch carrier            |
| Y10T 74/19465 | . . . . . | Sliding clutch operator           |
| Y10T 74/1947  | . . . . . | Selective                         |
| Y10T 74/19474 | . . . . . | Multiple key                      |
| Y10T 74/19479 | . . . . . | Spur gears                        |

|               |           |                                       |
|---------------|-----------|---------------------------------------|
| Y10T 74/19484 | . . . . . | Single speed forward and reverse      |
| Y10T 74/19488 | . . . . . | Spur gears                            |
| Y10T 74/19493 | . . . . . | Bevel gears                           |
| Y10T 74/19498 | . . . . . | Bevel and idler gears                 |
| Y10T 74/19502 | . .       | Pivotally supported                   |
| Y10T 74/19507 | . . .     | Windmill turntable                    |
| Y10T 74/19512 | . . .     | Screw                                 |
| Y10T 74/19516 | . . .     | Spur                                  |
| Y10T 74/19521 | . . .     | Bevel                                 |
| Y10T 74/19526 | . . . .   | Wheel type                            |
| Y10T 74/1953  | . . . .   | Wringer type                          |
| Y10T 74/19535 | . .       | Follow-up mechanism                   |
| Y10T 74/1954  | . .       | Eccentric driving shaft and axle      |
| Y10T 74/19545 | . .       | Central driving shaft in axle         |
| Y10T 74/1955  | . .       | Parallel shafts, adjustable gear mesh |
| Y10T 74/19555 | . .       | Varying speed ratio                   |
| Y10T 74/1956  | . .       | Adjustable                            |
| Y10T 74/19565 | . . .     | Relative movable axes                 |
| Y10T 74/1957  | . . . .   | Parallel shafts                       |
| Y10T 74/19575 | . . . .   | Automatic control                     |
| Y10T 74/1958  | . . . . . | Parallel shafts                       |
| Y10T 74/19585 | . . .     | Fixed axes                            |
| Y10T 74/1959  | . . . .   | Parallel shafts                       |
| Y10T 74/19595 | . . . .   | Automatic control                     |
| Y10T 74/196   | . . . . . | Parallel shafts                       |
| Y10T 74/19605 | . .       | Reversing means                       |
| Y10T 74/19609 | . . .     | Governor control                      |
| Y10T 74/19614 | . .       | Disconnecting means                   |
| Y10T 74/19619 | . .       | Displaceable elements                 |
| Y10T 74/19623 | . .       | Backlash take-up                      |
| Y10T 74/19628 | . .       | Pressure distributing                 |
| Y10T 74/19633 | . .       | Yieldability in gear trains           |
| Y10T 74/19637 | . .       | with brake means for gearing          |
| Y10T 74/19642 | . .       | Directly cooperating gears            |
| Y10T 74/19647 | . . .     | Parallel axes or shafts               |
| Y10T 74/19651 | . . . .   | External type                         |
| Y10T 74/19656 | . . . . . | Pin teeth                             |
| Y10T 74/1966  | . . .     | Intersecting axes                     |
| Y10T 74/19665 | . . . .   | Bevel gear type                       |
| Y10T 74/1967  | . . .     | Rack and pinion                       |

|               |                 |   |
|---------------|-----------------|---|
| Y10T 74/19674 | . . .           | Spur and bevel  |
| Y10T 74/19679 | . . .           | Spur  |
| Y10T 74/19684 | . . . .         | Motor and gearing   |
| Y10T 74/19688 | . . .           | Bevel   |
| Y10T 74/19693 | . . . .         | Motor vehicle drive   |
| Y10T 74/19698 | . . .           | Spiral  |
| Y10T 74/19702 | . . . .         | Screw and nut   |
| Y10T 74/19707 | . . . . .       | Plural longitudinally variably spaced nuts                                    |
| Y10T 74/19712 | . . . . .       | Threadless  |
| Y10T 74/19716 | . . . . .       | Non-linear screw  |
| Y10T 74/19721 | . . . . .       | Thread geometry   |
| Y10T 74/19726 | . . . . . .     | Thread pitch varies over axial length   |
| Y10T 74/1973  | . . . . . .     | Shaft thread is spirally wound wire   |
| Y10T 74/19735 | . . . . . .     | Nut disengageable from screw  |
| Y10T 74/1974  | . . . . . .     | Nut segments hinged parallel to shaft [e.g., clam shell-type, etc.]           |
| Y10T 74/19744 | . . . . .       | Rolling element engaging thread   |
| Y10T 74/19749 | . . . . . .     | Recirculating rolling elements  |
| Y10T 74/19753 | . . . . . . .   | Plural independent recirculating element paths                                |
| Y10T 74/19758 | . . . . . . .   | Single thread common to plural paths  |
| Y10T 74/19763 | . . . . . . .   | Roller return path in shaft   |
| Y10T 74/19767 | . . . . . . .   | Return path geometry  |
| Y10T 74/19772 | . . . . . . .   | Rolling element deflector   |
| Y10T 74/19777 | . . . . . . .   | Interconnected or cooperating rollers or roller structure                     |
| Y10T 74/19781 | . . . . . .     | Non-recirculating rolling elements  |
| Y10T 74/19786 | . . . . . . .   | Captured sphere   |
| Y10T 74/19791 | . . . . . . .   | Cylindrical or quasi-cylindrical roller element [e.g., inclined roller, etc.] |
| Y10T 74/19795 | . . . . . . . . | Parallel to shaft   |
| Y10T 74/198   | . . . . . . . . | Perpendicular to shaft  |
| Y10T 74/19805 | . . . . . .     | Less than 360 degrees of contact between nut and screw                        |
| Y10T 74/19809 | . . . . . .     | Independent nut segments  |
| Y10T 74/19814 | . . . . . . . . | Integral deformable tangs engaging screw                                      |
| Y10T 74/19819 | . . . . .       | Driven rack or shaft  |
| Y10T 74/19823 | . . . . .       | Screw   |
| Y10T 74/19828 | . . . . .       | Worm  |
| Y10T 74/19833 | . . . . .       | Variable speed  |
| Y10T 74/19837 | . . . . .       | Intermittent motion   |
| Y10T 74/19842 | . . . . .       | Distribution of pressure  |
| Y10T 74/19847 | . . .           | torque actuated safety devices  |

|               |           |   |
|---------------|-----------|---|
| Y10T 74/19851 | . .       | Gear and rotary bodies                    |
| Y10T 74/19856 | . . .     | Laterally-spaced wheels                   |
| Y10T 74/1986  | . . .     | Radially-spaced wheels                    |
| Y10T 74/19865 | . . .     | with flywheel                             |
| Y10T 74/1987  | . .       | Rotary bodies                             |
| Y10T 74/19874 | . . .     | Mutilated                                 |
| Y10T 74/19879 | . . .     | Geneva                                    |
| Y10T 74/19884 | . . .     | Irregular teeth and bodies                |
| Y10T 74/19888 | . . .     | External and internal teeth               |
| Y10T 74/19893 | . . .     | Sectional                                 |
| Y10T 74/19898 | . . . .   | Backlash take-up                          |
| Y10T 74/19902 | . . . . . | Screw and nut                             |
| Y10T 74/19907 | . . . .   | Sound deadening                           |
| Y10T 74/19912 | . . . .   | Differential disks                        |
| Y10T 74/19916 | . . . .   | Multiple disks                            |
| Y10T 74/19921 | . . . .   | Separate rim                              |
| Y10T 74/19926 | . . . . . | Detachable                                |
| Y10T 74/1993  | . . . .   | Segmental rim                             |
| Y10T 74/19935 | . . . .   | Sheet metal                               |
| Y10T 74/1994  | . . . .   | Diametrically split                       |
| Y10T 74/19944 | . . . .   | Shaft-admitting insert                    |
| Y10T 74/19949 | . .       | Teeth                                     |
| Y10T 74/19953 | . . .     | Worm and helical                          |
| Y10T 74/19958 | . . .     | Bevel                                     |
| Y10T 74/19963 | . . .     | Spur                                      |
| Y10T 74/19967 | . . . .   | Yieldable                                 |
| Y10T 74/19972 | . . . .   | form                                      |
| Y10T 74/19977 | . . . . . | Antifriction                              |
| Y10T 74/19981 | . . . . . | Roller                                    |
| Y10T 74/19986 | . . . . . | Twisted                                   |
| Y10T 74/19991 | . .       | Lubrication                               |
| Y10T 74/19995 | . . .     | Teeth                                     |
| Y10T 74/20    | . .       | Control lever and linkage systems         |
| Y10T 74/20006 | . .       | Resilient connections                     |
| Y10T 74/20012 | . .       | Multiple controlled elements              |
| Y10T 74/20018 | . . .     | Transmission control                      |
| Y10T 74/20024 | . . . .   | Fluid actuator                            |
| Y10T 74/2003  | . . . .   | Electrical actuator                       |
| Y10T 74/20037 | . . . .   | Occupant propelled vehicle                |
| Y10T 74/20043 | . . . . . | Transmission controlled by flexible cable |

|               |               |  |
|---------------|---------------|--|
| Y10T 74/20049 | . . . .       | Transmission controlled by flexible cable  |
| Y10T 74/20055 | . . . .       | Foot operated  |
| Y10T 74/20061 | . . . . .     | Multiple foot-operated controls  |
| Y10T 74/20067 | . . . .       | Control convertible between automatic and manual operation   |
| Y10T 74/20073 | . . . .       | Control of plural mechanisms [e.g., control of transmission and control of 4 - wheel drive]          |
| Y10T 74/20079 | . . . . .     | Separate control levers  |
| Y10T 74/20085 | . . . .       | Restriction of shift, gear selection, or gear engagement   |
| Y10T 74/20091 | . . . . .     | Prevention of reverse shift  |
| Y10T 74/20098 | . . . . .     | Separate actuator to disengage restrictor  |
| Y10T 74/20104 | . . . . .     | Shift element interlock  |
| Y10T 74/2011  | . . . . . .   | with detent, recess, notch, or groove  |
| Y10T 74/20116 | . . . . . .   | Resiliently biased interlock   |
| Y10T 74/20122 | . . . . .     | Spherical restrictor   |
| Y10T 74/20128 | . . . . .     | Resiliently biased restrictor  |
| Y10T 74/20134 | . . . .       | having vibration damper  |
| Y10T 74/2014  | . . . .       | Manually operated selector [e.g., remotely controlled device, lever, push button, rotary dial, etc.] |
| Y10T 74/20146 | . . . . .     | Control lever on steering column   |
| Y10T 74/20152 | . . . . . .   | Control lever movable through plural planes  |
| Y10T 74/20159 | . . . . .     | Control lever movable through plural planes  |
| Y10T 74/20165 | . . . . . .   | Spherical mount [e.g., ball and socket]  |
| Y10T 74/20171 | . . . . . . . | Resiliently biased control lever   |
| Y10T 74/20177 | . . . .       | Particular element [e.g., shift fork, template, etc.]  |
| Y10T 74/20183 | . . . . .     | Shift fork structure   |
| Y10T 74/20189 | . . .         | Foot operated  |
| Y10T 74/20195 | . . . .       | Offset extension   |
| Y10T 74/20201 | . . .         | Control moves in two planes  |
| Y10T 74/20207 | . .           | Multiple controlling elements for single controlled element  |
| Y10T 74/20213 | . . .         | Interconnected   |
| Y10T 74/2022  | . . . .       | Hand and foot  |
| Y10T 74/20226 | . . . . .     | Accelerator  |
| Y10T 74/20232 | . . . .       | Marine   |
| Y10T 74/20238 | . . .         | Interlocked  |
| Y10T 74/20244 | . . . .       | Push button  |
| Y10T 74/2025  | . . . .       | Rod blocks actuation of rotary member  |
| Y10T 74/20256 | . . .         | Steering and controls assemblies   |
| Y10T 74/20262 | . . . .       | Rotary control shaft   |
| Y10T 74/20268 | . . . .       | Reciprocating control elements   |
| Y10T 74/20274 | . . . . .     | Flexible   |



|               |           |  |
|---------------|-----------|--|
| Y10T 74/2028  | . . . . . | Handle bar type  |
| Y10T 74/20287 | . . . . . | Flexible control element                                       |
| Y10T 74/20293 | . . . . . | with horn control  |
| Y10T 74/20299 | . . . . . | Antirattling elements  |
| Y10T 74/20305 | . . . . . | Robotic arm  |
| Y10T 74/20311 | . . . . . | including power cable or connector                             |
| Y10T 74/20317 | . . . . . | including electric motor                                       |
| Y10T 74/20323 | . . . . . | including flaccid drive element                                |
| Y10T 74/20329 | . . . . . | Joint between elements   |
| Y10T 74/20335 | . . . . . | Wrist  |
| Y10T 74/20341 | . . . . . | Power elements as controlling elements                         |
| Y10T 74/20348 | . . . . . | Planar surface with orthogonal movement and rotation           |
| Y10T 74/20354 | . . . . . | Planar surface with orthogonal movement only                   |
| Y10T 74/2036  | . . . . . | Pair of power elements   |
| Y10T 74/20366 | . . . . . | Power and manual controlling elements                          |
| Y10T 74/20372 | . . . . . | Manual controlling elements                                    |
| Y10T 74/20378 | . . . . . | Planar surface with orthogonal movement or rotation            |
| Y10T 74/20384 | . . . . . | Levers   |
| Y10T 74/2039  | . . . . . | Pair of levers   |
| Y10T 74/20396 | . . . . . | Hand operated  |
| Y10T 74/20402 | . . . . . | Flexible transmitter [e.g., Bowden cable]                      |
| Y10T 74/20408 | . . . . . | Constant tension sustaining                                    |
| Y10T 74/20414 | . . . . . | Hydraulic control  |
| Y10T 74/2042  | . . . . . | and hand operator  |
| Y10T 74/20426 | . . . . . | Slidable   |
| Y10T 74/20432 | . . . . . | for moving a mirror  |
| Y10T 74/20438 | . . . . . | Single rotatable lever [e.g., for bicycle brake or derailleur] |
| Y10T 74/20444 | . . . . . | including rolling antifriction elements                        |
| Y10T 74/2045  | . . . . . | and sheath support, connector, or anchor                       |
| Y10T 74/20456 | . . . . . | Specific cable or sheath structure                             |
| Y10T 74/20462 | . . . . . | Specific cable connector or guide                              |
| Y10T 74/20468 | . . . . . | Sliding rod  |
| Y10T 74/20474 | . . . . . | Rotatable rod, shaft, or post                                  |
| Y10T 74/2048  | . . . . . | Gear, drum, and cable  |
| Y10T 74/20486 | . . . . . | Drum and cable   |
| Y10T 74/20492 | . . . . . | Gear   |
| Y10T 74/20498 | . . . . . | Variable ratio   |
| Y10T 74/20504 | . . . . . | Screw and nut  |
| Y10T 74/2051  | . . . . . | Adjustable   |
| Y10T 74/20516 | . . . . . | Mountings  |

|               |           |                            |
|---------------|-----------|----------------------------|
| Y10T 74/20522 | . . . . . | Antenna                    |
| Y10T 74/20528 | . .       | Foot operated              |
| Y10T 74/20534 | . . .     | Accelerator                |
| Y10T 74/2054  | . . .     | Signal                     |
| Y10T 74/20546 | . .       | Knee operated              |
| Y10T 74/20552 | . . .     | Elbow                      |
| Y10T 74/20558 | . .       | Variable output force      |
| Y10T 74/20564 | . . .     | Flexible                   |
| Y10T 74/2057  | . . .     | Variable input leverage    |
| Y10T 74/20576 | . .       | Elements                   |
| Y10T 74/20582 | . . .     | Levers                     |
| Y10T 74/20588 | . . . .   | toggle                     |
| Y10T 74/20594 | . . . . . | Lazy tongs                 |
| Y10T 74/206   | . . . .   | Adjustable                 |
| Y10T 74/20606 | . . . .   | Swing posts                |
| Y10T 74/20612 | . . . .   | Hand                       |
| Y10T 74/20618 | . . . . . | Jointed                    |
| Y10T 74/20624 | . . . . . | Adjustable                 |
| Y10T 74/2063  | . . . .   | Stops                      |
| Y10T 74/20636 | . . .     | Detents                    |
| Y10T 74/20642 | . . . .   | Hand crank                 |
| Y10T 74/20648 | . . . .   | Interrelated lever release |
| Y10T 74/20654 | . . . .   | Gear                       |
| Y10T 74/2066  | . . . .   | Friction                   |
| Y10T 74/20666 | . . . .   | Lever engaging             |
| Y10T 74/20672 | . . . .   | Lever engaging rack        |
| Y10T 74/20678 | . . . . . | Pivoted                    |
| Y10T 74/20684 | . . . . . | Lever carried pawl         |
| Y10T 74/2069  | . . . . . | Handle release             |
| Y10T 74/20696 | . . . . . | Finger lever release       |
| Y10T 74/20702 | . . . . . | Slidable                   |
| Y10T 74/20708 | . . . . . | Pedal controlled           |
| Y10T 74/20714 | . . . .   | Lever carried rack         |
| Y10T 74/2072  | . . . . . | Pivoted                    |
| Y10T 74/20726 | . . . . . | Pedal controlled           |
| Y10T 74/20732 | . . .     | Handles                    |
| Y10T 74/20738 | . . . .   | Extension                  |
| Y10T 74/20744 | . . . .   | Hand crank                 |
| Y10T 74/2075  | . . . . . | Extensible                 |
| Y10T 74/20756 | . . . . . | Collapsible                |

|               |           |   |
|---------------|-----------|---|
| Y10T 74/20762 | . . . .   | Shaft connections   |
| Y10T 74/20768 | . . . . . | Engine starter type   |
| Y10T 74/20774 | . . . . . | Holders   |
| Y10T 74/2078  | . . . .   | Handle bars   |
| Y10T 74/20786 | . . . . . | Spring biased or supported  |
| Y10T 74/20792 | . . . . . | Folding or adjustable   |
| Y10T 74/20798 | . . . . . | Sectional   |
| Y10T 74/20804 | . . . . . | Simultaneously movable  |
| Y10T 74/2081  | . . . . . | Continuous  |
| Y10T 74/20816 | . . . . . | with handle latch   |
| Y10T 74/20822 | . . . . . | Attachments and accessories   |
| Y10T 74/20828 | . . . . . | Handholds and grips   |
| Y10T 74/20834 | . . . .   | Hand wheels   |
| Y10T 74/2084  | . . . . . | Knob or dial  |
| Y10T 74/20846 | . . . . . | Slidable  |
| Y10T 74/20852 | . . . . . | Pivoted   |
| Y10T 74/20858 | . . . . . | Releasable  |
| Y10T 74/20864 | . . . . . | Handles   |
| Y10T 74/2087  | . . . . . | Rim grips and covers  |
| Y10T 74/20876 | . . . .   | Caps and covers   |
| Y10T 74/20882 | . . .     | Rocker arms   |
| Y10T 74/20888 | . . .     | Pedals  |
| Y10T 74/20894 | . . . .   | Treadles  |
| Y10T 74/209   | . . . .   | Extension   |
| Y10T 74/20906 | . . . . . | Offset  |
| Y10T 74/20912 | . . . .   | Pads and covers   |
| Y10T 74/20918 | . . .     | Foot rests  |
| Y10T 74/20924 | . . .     | Controller checks   |
| Y10T 74/2093  | . . .     | Slot closers and lever guards   |
| Y10T 74/21    | . .       | Elements  |
| Y10T 74/2101  | . .       | Cams  |
| Y10T 74/2102  | . . .     | Adjustable  |
| Y10T 74/2104  | . . . .   | Flexible strip  |
| Y10T 74/2105  | . . . .   | Memory devices  |
| Y10T 74/2106  | . . . .   | Timer devices   |
| Y10T 74/2107  | . . .     | Follower  |
| Y10T 74/2109  | . .       | Balancing for drum, e.g., washing machine or arm-type structure, etc., centrifuge, etc. |
| Y10T 74/211   | . .       | Eccentric   |
| Y10T 74/2111  | . . .     | Plural, movable relative to each other [including ball[s]]                              |

|              |  |
|--------------|--|
| Y10T 74/2112 | . . . . Concentric   |
| Y10T 74/2114 | . . . Adjustable   |
| Y10T 74/2115 | . . . . Radially   |
| Y10T 74/2116 | . . . having anti-friction means, e.g., roller bearing, lubrication, etc.                      |
| Y10T 74/2117 | . . Power generating-type flywheel   |
| Y10T 74/2119 | . . . Structural detail, e.g., material, configuration, superconductor, discs, laminated, etc. |
| Y10T 74/212  | . . . . Containing fiber or filament   |
| Y10T 74/2121 | . . Flywheel, motion smoothing-type  |
| Y10T 74/2122 | . . . with fluid balancing means   |
| Y10T 74/2123 | . . . . and pressure compensation  |
| Y10T 74/2125 | . . . . and elastic device   |
| Y10T 74/2126 | . . . . and bearings   |
| Y10T 74/2127 | . . . with electrical or magnetic damping  |
| Y10T 74/2128 | . . . Damping using swinging masses, e.g., pendulum type, etc.                                 |
| Y10T 74/213  | . . . Damping by increasing frictional force   |
| Y10T 74/2131 | . . . Damping by absorbing vibration force [via rubber, elastomeric material, etc.]            |
| Y10T 74/2132 | . . . Structural detail, e.g., fiber, held by magnet, etc.                                     |
| Y10T 74/2133 | . . Pawls and ratchets   |
| Y10T 74/2135 | . . . Noiseless  |
| Y10T 74/2136 | . . . Pivoted pawls  |
| Y10T 74/2137 | . . . . Single tooth   |
| Y10T 74/2138 | . . . . Flexible single tooth  |
| Y10T 74/214  | . . . . Multiple tooth   |
| Y10T 74/2141 | . . . Sliding pawls  |
| Y10T 74/2142 | . . Pitmans and connecting rods  |
| Y10T 74/2143 | . . . Radial   |
| Y10T 74/2144 | . . . Yieldable  |
| Y10T 74/2146 | . . . . Longitudinal springs   |
| Y10T 74/2147 | . . . . Fluid cushion  |
| Y10T 74/2148 | . . . . Automatic release  |
| Y10T 74/2149 | . . . . . toggle link type   |
| Y10T 74/2151 | . . . Longitudinally adjustable  |
| Y10T 74/2152 | . . . Hollow rod, lubricated   |
| Y10T 74/2153 | . . . Sheet metal type   |
| Y10T 74/2154 | . . . Counterbalanced  |
| Y10T 74/2156 | . . . . Weight type  |
| Y10T 74/2157 | . . . . . Rotating   |
| Y10T 74/2158 | . . . . Spring   |

|              |         |                               |
|--------------|---------|-------------------------------|
| Y10T 74/2159 | . . .   | Section coupled               |
| Y10T 74/216  | . . .   | Bearings, adjustable          |
| Y10T 74/2162 | . . .   | Engine type                   |
| Y10T 74/2163 | . . .   | Idler arm                     |
| Y10T 74/2164 | . .     | Cranks and pedals             |
| Y10T 74/2165 | . . .   | with attached gear            |
| Y10T 74/2167 | . . .   | Variable                      |
| Y10T 74/2168 | . . .   | Pedals                        |
| Y10T 74/2169 | . . . . | Counterbalanced               |
| Y10T 74/217  | . . . . | with toe or shoe clips        |
| Y10T 74/2172 | . . . . | Adjustable or folding         |
| Y10T 74/2173 | . .     | Cranks and wrist pins         |
| Y10T 74/2174 | . . .   | Multiple throw                |
| Y10T 74/2175 | . . . . | Sectional                     |
| Y10T 74/2177 | . . .   | Sectional                     |
| Y10T 74/2178 | . . .   | Yieldable                     |
| Y10T 74/2179 | . . .   | Adjustable                    |
| Y10T 74/218  | . . . . | Automatically                 |
| Y10T 74/2181 | . . .   | Variable                      |
| Y10T 74/2183 | . . .   | Counterbalanced               |
| Y10T 74/2184 | . . . . | Vibration dampers             |
| Y10T 74/2185 | . . .   | Lubricated                    |
| Y10T 74/2186 | . .     | Gear casings                  |
| Y10T 74/2188 | . . .   | Axle and torque tubes         |
| Y10T 74/2189 | . . .   | Cooling                       |
| Y10T 74/219  | . .     | Guards                        |
| Y10T 74/2191 | . . .   | for rotary member             |
| Y10T 74/2193 | . .     | Guard mechanisms              |
| Y10T 74/2194 | . . .   | Automatic                     |
| Y10T 74/2195 | . . . . | Oscillating member actuator   |
| Y10T 74/2196 | . . . . | Reciprocating member actuator |
| Y10T 74/2198 | . . .   | Operator controlled           |
| Y10T 74/2199 | . . .   | Set screw                     |
| Y10T 74/22   | . .     | Miscellaneous                 |

**Former US Class 82 Series**

|                   |                          |
|-------------------|--------------------------|
| <b>Y10T 82/00</b> | <b>Turning</b>           |
| Y10T 82/10        | . Process of turning     |
| Y10T 82/11        | . Talking machine tablet |

- Y10T 82/12 . Radially moving rotating tool inside bore
- Y10T 82/122 . . Forming non-circular bore
- Y10T 82/125 . . Tool simultaneously moving axially
- Y10T 82/128 . . . Pivoted to tool-carrier
- Y10T 82/13 . Pattern section
- Y10T 82/135 . . Cam-controlled cutter
- Y10T 82/14 . Axial pattern
- Y10T 82/141 . . having transverse tool and templet guide
- Y10T 82/142 . . . with workpiece gauge
- Y10T 82/143 . . . having electrical actuator
- Y10T 82/145 . . . . And hydraulic actuator
- Y10T 82/147 . . . having hydraulic actuator
- Y10T 82/148 . . Pivoted tool rest
- Y10T 82/149 . . Profiled cutter
- Y10T 82/15 . Tapers
- Y10T 82/152 . . Offset work axis
- Y10T 82/154 . . Transversely shifted cutter
- Y10T 82/156 . . . Templet controlled
- Y10T 82/158 . . . Gear controlled
- Y10T 82/16 . Severing or cut-off
- Y10T 82/16016 . . Processes
- Y10T 82/16032 . . Automatic and/or triggered control
- Y10T 82/16049 . . Combined with means to sharpen tool[s]
- Y10T 82/16065 . . Combined with means to apply fluid
- Y10T 82/16081 . . Combined with means to heat tool and/or work
- Y10T 82/16098 . . with dust or chip handling
- Y10T 82/16114 . . including scrap cutting means
- Y10T 82/16131 . . Flying cutter type
- Y10T 82/16147 . . Cutting couple straddling work
- Y10T 82/16163 . . . with pattern, guide or cam means [noncircular product]
- Y10T 82/16181 . . . Plural cutting means [pairs, or pair, plus single]
- Y10T 82/16196 . . . Rotary shear pair
- Y10T 82/16213 . . . . Tool axes parallel to axis of work rotation
- Y10T 82/16229 . . Interrelated means for tool infeed and circumrotation
- Y10T 82/16245 . . . Dependent upon reaction to work
- Y10T 82/16262 . . . Infeed cam disk rotation geared to tool holder rotation
- Y10T 82/16278 . . . . Axial infeed cam
- Y10T 82/16295 . . . . including centrifugal balancing means
- Y10T 82/16311 . . . . Scroll plate infeed cam
- Y10T 82/16327 . . . Infeed cam plate braked with respect to tool[s] carrier plate

|               |           |  |
|---------------|-----------|--|
| Y10T 82/16344 | . . .     | Orbital cogwheel and fixed detent                            |
| Y10T 82/16361 | . . .     | Common gear means  |
| Y10T 82/16377 | . . . .   | including adjustable means to vary gear speed                |
| Y10T 82/16393 | . . . .   | with manual disconnect lever                                 |
| Y10T 82/16409 | . . .     | with means to feed work                                      |
| Y10T 82/16426 | . .       | Infeed means   |
| Y10T 82/16442 | . . .     | with means to circumrotate tool[s] about work                |
| Y10T 82/16459 | . . . .   | Fluid means for relative tool actuation                      |
| Y10T 82/16475 | . . . .   | Gear means for tool actuation                                |
| Y10T 82/16491 | . . . . . | including axial cam  |
| Y10T 82/16508 | . . . . . | with indicator   |
| Y10T 82/16524 | . . . .   | Bell crank linkage for tool[s] holder                        |
| Y10T 82/16541 | . . . .   | Resilient means for tool actuation                           |
| Y10T 82/16557 | . . . . . | with means for manual retraction                             |
| Y10T 82/16573 | . . .     | Hand crank for tool holder                                   |
| Y10T 82/16591 | . . .     | Power driven eccentric                                       |
| Y10T 82/16606 | . . . .   | Fluid motor  |
| Y10T 82/16622 | . . . .   | Plural tools   |
| Y10T 82/16639 | . . .     | Tool within work   |
| Y10T 82/16655 | . . .     | with means to rotate tool[s]                                 |
| Y10T 82/16672 | . . . .   | including rotatable cutters supporting work                  |
| Y10T 82/16688 | . . . .   | Planetating work mandrels                                    |
| Y10T 82/16704 | . . . .   | Pivoted tool carriage  |
| Y10T 82/16721 | . . . . . | with adjustable work stops                                   |
| Y10T 82/16737 | . . . .   | Eccentric periphery rotary tool                              |
| Y10T 82/16754 | . . . .   | Means to feed work axially                                   |
| Y10T 82/16771 | . . . .   | Translatable work support carriage                           |
| Y10T 82/16786 | . . . .   | with tool groove in support roll[s]                          |
| Y10T 82/16803 | . . .     | Rotatable tool[s] driven by contact with work                |
| Y10T 82/16819 | . . . .   | Axially movable tool support                                 |
| Y10T 82/16836 | . . . . . | Freely floating parallel to axis                             |
| Y10T 82/16852 | . . . . . | with supplemental nonrotative tool                           |
| Y10T 82/16868 | . . . . . | including clutch control for work rotation                   |
| Y10T 82/16885 | . . . .   | including resilient means urging work against rotary support |
| Y10T 82/16901 | . . .     | Separate means for plural tools                              |
| Y10T 82/16918 | . . .     | Spring urged   |
| Y10T 82/16934 | . . . .   | For window shade   |
| Y10T 82/16951 | . . .     | Tool adjustment and/or stop                                  |
| Y10T 82/16967 | . . .     | with means to support and/or rotate work                     |
| Y10T 82/16983 | . . .     | with means to feed work                                      |

|              |  |
|--------------|--|
| Y10T 82/17   | . Lathe for pulley                             |
| Y10T 82/18   | . Lathe for wheel or axle                      |
| Y10T 82/185  | . . In situ lathe for railroad wheel           |
| Y10T 82/19   | . Lathe for crank or crank pin                 |
| Y10T 82/192  | . . Portable lathe for crank pin               |
| Y10T 82/195  | . . having work oscillator                     |
| Y10T 82/198  | . . . having work driver                       |
| Y10T 82/20   | . Lathe for screw cutting                      |
| Y10T 82/205  | . . having swinging feed nut and tool bar      |
| Y10T 82/21   | . Portable lathe for brake drum, disc, or shoe |
| Y10T 82/22   | . Portable lathe for pipe turning              |
| Y10T 82/23   | . Portable lathe for piston grooving           |
| Y10T 82/24   | . Bench lathe                                  |
| Y10T 82/245  | . . Watchmaker's lathe                         |
| Y10T 82/25   | . Lathe  |
| Y10T 82/2502 | . . with program control                       |
| Y10T 82/2504 | . . . And transmission                         |
| Y10T 82/2506 | . . . And tool turret                          |
| Y10T 82/2508 | . . with tool turret                           |
| Y10T 82/2511 | . . Vertical                                   |
| Y10T 82/2512 | . . having facing tool fed transverse to work  |
| Y10T 82/2514 | . . with work feeder or remover                |
| Y10T 82/2516 | . . . Magazine type                            |
| Y10T 82/2518 | . . . . Bar feeder                             |
| Y10T 82/2521 | . . . Bar feeder                               |
| Y10T 82/2522 | . . Portable                                   |
| Y10T 82/2524 | . . Multiple                                   |
| Y10T 82/2527 | . . having hollow cutter head                  |
| Y10T 82/2529 | . . Revolvable cutter heads                    |
| Y10T 82/2531 | . . Carriage feed                              |
| Y10T 82/2533 | . . . Control                                  |
| Y10T 82/2535 | . . . . Electrical type                        |
| Y10T 82/2537 | . . . Apron mechanism                          |
| Y10T 82/2539 | . . . . Feednut control                        |
| Y10T 82/2541 | . . . Slide rest                               |
| Y10T 82/2543 | . . . . Multiple tool support                  |
| Y10T 82/2545 | . . . . Tool relief                            |
| Y10T 82/2547 | . . . Change gears                             |
| Y10T 82/2549 | . . . Feedscrews and rods                      |
| Y10T 82/2552 | . . Headstock                                  |



|              |   |
|--------------|---|
| Y10T 82/2554 | . . . Speed changing gear   |
| Y10T 82/2556 | . . . . Speed change gears for maintaining constant cutting speed |
| Y10T 82/2558 | . . . Spindle reverser  |
| Y10T 82/2561 | . . . Spindle or work angler                                      |
| Y10T 82/2562 | . . . Spindle and bearings  |
| Y10T 82/2564 | . . Tailstock   |
| Y10T 82/2566 | . . Bed   |
| Y10T 82/2568 | . . Center  |
| Y10T 82/2571 | . . . Alignment adjuster  |
| Y10T 82/2572 | . . Attachment  |
| Y10T 82/2574 | . . . Stop [e.g., carriage, tool, work, etc.]                     |
| Y10T 82/2577 | . . . . Tool slide  |
| Y10T 82/2579 | . . . . Collet or spindle   |
| Y10T 82/2581 | . . . . Indexible [e.g., roll type, etc.]                         |
| Y10T 82/2583 | . . Tool and work rest  |
| Y10T 82/2585 | . . Tool rest   |
| Y10T 82/2587 | . . . Turret type holder [e.g., multiple tools, etc.]             |
| Y10T 82/2589 | . . . Quick release tool or holder clamp                          |
| Y10T 82/2591 | . . . Tool post   |
| Y10T 82/2593 | . . Work rest   |
| Y10T 82/2595 | . . . with noise or vibration dampener                            |
| Y10T 82/2597 | . . . Center rest   |
| Y10T 82/26   | . Work driver   |
| Y10T 82/262  | . . Lathe dog   |
| Y10T 82/264  | . . . Cam grip  |
| Y10T 82/266  | . . Mandrel   |
| Y10T 82/268  | . . . Expansible  |
| Y10T 82/27   | . Centerer  |
| Y10T 82/28   | . Drill press attachment for turning                              |
| Y10T 82/29   | . Attachment for cutting a valve                                  |
| Y10T 82/30   | . Miscellaneous   |

**Former US Class 83 series**

|                   |  |
|-------------------|--|
| <b>Y10T 83/00</b> | <b>Cutting</b>                                   |
| Y10T 83/02        | . Other than completely through work thickness   |
| Y10T 83/0207      | . . or through work presented                    |
| Y10T 83/0215      | . . . Including use of rotary scoring blade      |
| Y10T 83/0222      | . . . . Plural independent rotary scoring blades |
| Y10T 83/023       | . . . With infeeding of work                     |

|              |  |
|--------------|--|
| Y10T 83/0237 | . . Pricking   |
| Y10T 83/0244 | . . . Including use of orbiting tool carrier                     |
| Y10T 83/0252 | . . . With infeeding of tool                                     |
| Y10T 83/0259 | . . Edge trimming [e.g., chamfering, etc.]                       |
| Y10T 83/0267 | . . Splitting  |
| Y10T 83/0274 | . . . By use of endless band or chain knife                      |
| Y10T 83/0281 | . . . By use of rotary blade                                     |
| Y10T 83/0289 | . . . . Plural independent rotary blades                         |
| Y10T 83/0296 | . . . With infeeding of work                                     |
| Y10T 83/0304 | . . Grooving   |
| Y10T 83/0311 | . . . By use of plural independent rotary blades                 |
| Y10T 83/0319 | . . . . Forming common groove                                    |
| Y10T 83/0326 | . . . . Blades turning about perpendicular axes                  |
| Y10T 83/0333 | . . Scoring  |
| Y10T 83/0341 | . . . Processes  |
| Y10T 83/0348 | . . . Active means to control depth of score                     |
| Y10T 83/0356 | . . . Serially   |
| Y10T 83/0363 | . . . Plural independent scoring blades                          |
| Y10T 83/037  | . . . . Rotary scoring blades                                    |
| Y10T 83/0378 | . . . . . On opposite sides of work                              |
| Y10T 83/0385 | . . . Rotary scoring blade                                       |
| Y10T 83/0393 | . . . . With means to rotate blade                               |
| Y10T 83/04   | . Processes  |
| Y10T 83/0405 | . . With preparatory or simultaneous ancillary treatment of work |
| Y10T 83/041  | . . . By heating or cooling                                      |
| Y10T 83/0414 | . . . . At localized area [e.g., line of separation]             |
| Y10T 83/0419 | . . . By distorting within elastic limit                         |
| Y10T 83/0424 | . . . . By stretching  |
| Y10T 83/0429 | . . . . By compressing   |
| Y10T 83/0433 | . . . . By flexing around or by tool                             |
| Y10T 83/0438 | . . . . . To conform to shape of tool                            |
| Y10T 83/0443 | . . . By fluid application                                       |
| Y10T 83/0448 | . . With subsequent handling [i.e., of product]                  |
| Y10T 83/0453 | . . . By fluid application                                       |
| Y10T 83/0457 | . . . By retaining or reinserting product in workpiece           |
| Y10T 83/0462 | . . . By accelerating travel                                     |
| Y10T 83/0467 | . . . By separating products from each other                     |
| Y10T 83/0472 | . . . By moving work support to which a tacky product is adhered |
| Y10T 83/0476 | . . Including stacking of plural workpieces                      |
| Y10T 83/0481 | . . Puncturing   |

|              |   |
|--------------|---|
| Y10T 83/0486 | . . With manipulation of tool protective strip [e.g., backing strip]  |
| Y10T 83/0491 | . . Cutting of interdigitating products                               |
| Y10T 83/0495 | . . Making and using a registration cut                               |
| Y10T 83/05   | . . With reorientation of tool between cuts                           |
| Y10T 83/0505 | . . With reorientation of work between cuts                           |
| Y10T 83/051  | . . . Relative to same tool   |
| Y10T 83/0515 | . . During movement of work past flying cutter                        |
| Y10T 83/0519 | . . . Cyclically varying rate of tool or work movement                |
| Y10T 83/0524 | . . Plural cutting steps  |
| Y10T 83/0529 | . . . Blanking and cutting  |
| Y10T 83/0534 | . . . . Cutting to join blanked holes                                 |
| Y10T 83/0538 | . . . Repetitive transverse severing from leading edge of work        |
| Y10T 83/0543 | . . . . Alternately forming products of less than total width of work |
| Y10T 83/0548 | . . . . With longitudinal severing                                    |
| Y10T 83/0553 | . . . . . Effected by plural steps                                    |
| Y10T 83/0558 | . . . . . Along zigzag or undulant line or cut                        |
| Y10T 83/0562 | . . . . . Prior to transverse severing                                |
| Y10T 83/0567 | . . . . Nonrectilinear cutting  |
| Y10T 83/0572 | . . . Plural cutting steps effect progressive cut                     |
| Y10T 83/0577 | . . . Repetitive blanking   |
| Y10T 83/0581 | . . Cutting part way through from opposite sides of work              |
| Y10T 83/0586 | . . Effecting diverse or sequential cuts in same cutting step         |
| Y10T 83/0591 | . . Cutting by direct application of fluent pressure to work          |
| Y10T 83/0596 | . . Cutting wall of hollow work                                       |
| Y10T 83/06   | . . Blanking  |
| Y10T 83/0605 | . . Cut advances across work surface                                  |
| Y10T 83/061  | . With manually actuated means to disturb cyclic operation            |
| Y10T 83/081  | . With randomly actuated stopping means                               |
| Y10T 83/083  | . . With means to permit subsequent hand operation                    |
| Y10T 83/084  | . . With stop-signal-responsive means to actuate auxiliary cutter     |
| Y10T 83/086  | . . With sensing of product or product handling means                 |
| Y10T 83/088  | . . Responsive to tool detector or work-feed-means detector           |
| Y10T 83/089  | . . . Responsive to tool characteristic                               |
| Y10T 83/091  | . . Responsive to work sensing means                                  |
| Y10T 83/093  | . . . Of buckled work   |
| Y10T 83/094  | . . . . Running loop  |
| Y10T 83/096  | . . . Detector supported on or urged against work                     |
| Y10T 83/098  | . . . . Resiliently biased  |
| Y10T 83/099  | . . Manually operated   |

- Y10T 83/101 . With stopping means effective on completion of predetermined number of tool cycles
- Y10T 83/121 . With means to accomplish delayed stopping after cessation of cyclic operation
- Y10T 83/141 . With means to monitor and control operation [e.g., self-regulating means]
- Y10T 83/145 . . Including means to monitor product
- Y10T 83/148 . . Including means to correct the sensed operation
- Y10T 83/152 . . . And modify another operation
- Y10T 83/155 . . . Optimizing product from unique workpiece
- Y10T 83/159 . . Including means to compensate tool speed for work-feed variations
- Y10T 83/162 . With control means responsive to replaceable or selectable information program
- Y10T 83/164 . . For cutting component of animal; e.g., hair clipper
- Y10T 83/166 . . Removable element carries program
- Y10T 83/169 . . . Indeterminate length, web or strand
- Y10T 83/171 . . . . Magnetic
- Y10T 83/173 . . Arithmetically determined program
- Y10T 83/175 . . . With condition sensor
- Y10T 83/178 . . . . Responsive to work
- Y10T 83/18 . . . With operator input means
- Y10T 83/182 . With means to weigh product
- Y10T 83/202 . With product handling means
- Y10T 83/2022 . . Initiated by means responsive to product or work
- Y10T 83/2024 . . . Responsive to work
- Y10T 83/2027 . . Initiated by means directly responsive to tool movement
- Y10T 83/2029 . . . In return motion of tool
- Y10T 83/2031 . . Including means to drape the product
- Y10T 83/2033 . . Including means to form or hold pile of product pieces
- Y10T 83/2035 . . . In nested relation
- Y10T 83/2037 . . . In stacked or packed relation
- Y10T 83/204 . . . . Stacker sweeps along product support
- Y10T 83/2042 . . . . Including cut pieces overlapped on delivery means
- Y10T 83/2044 . . . . And means to separate product portions
- Y10T 83/2046 . . . . Including means to move stack bodily
- Y10T 83/2048 . . . . . By movement of stack holder
- Y10T 83/205 . . . . . By timed relocation of holder along path of stack gscheme-change-itemth
- Y10T 83/2053 . . . . . . Interrelated adjustment of holder movement and work-feeder
- Y10T 83/2055 . . . . And means to resist stack movement
- Y10T 83/2057 . . . . Including means to deliver individual pieces to a stack holder
- Y10T 83/2059 . . . . . With spindle to enter a hole or to make hole in product
- Y10T 83/2061 . . . . . By face-engaging means to push product broadside into stacked relation

|              |   |
|--------------|---|
| Y10T 83/2063 | . . . . Upon emergence from hollow cutter                             |
| Y10T 83/2066 | . . By fluid current  |
| Y10T 83/2068 | . . . Plural blasts directed against plural product pieces            |
| Y10T 83/207  | . . . By suction means  |
| Y10T 83/2072 | . . By brush means  |
| Y10T 83/2074 | . . Including means to divert one portion of product from another     |
| Y10T 83/2077 | . . . By kerf entering guide  |
| Y10T 83/2079 | . . . Remaining or re-inserted product portion from base material     |
| Y10T 83/2081 | . . . Gravity type  |
| Y10T 83/2083 | . . . Deflecting guide  |
| Y10T 83/2085 | . . . . Positionable gate in product flow path                        |
| Y10T 83/2087 | . . . Diverging product movers  |
| Y10T 83/209  | . . Including means to replace product in base material after cutting |
| Y10T 83/2092 | . . Means to move, guide, or permit free fall or flight of product    |
| Y10T 83/2094 | . . . Means to move product at speed different from work speed        |
| Y10T 83/2096 | . . . Means to move product out of contact with tool                  |
| Y10T 83/2098 | . . . . With means to effect subsequent conveying or guiding          |
| Y10T 83/21   | . . . . Out of contact with a rotary tool                             |
| Y10T 83/2103 | . . . . . Mover surrounds axis of tool rotation                       |
| Y10T 83/2105 | . . . . . Mover mounted on rotary tool                                |
| Y10T 83/2107 | . . . . . . For radial movement of product                            |
| Y10T 83/2109 | . . . . . . . Resiliently mounted                                     |
| Y10T 83/2111 | . . . . . Mover is resiliently mounted                                |
| Y10T 83/2113 | . . . . . Pivoted mover   |
| Y10T 83/2116 | . . . . . . And plural rotating tools                                 |
| Y10T 83/2118 | . . . . . Stationary mover  |
| Y10T 83/212  | . . . . . . And plural rotating tools                                 |
| Y10T 83/2122 | . . . . By ejector within a hollow cutter                             |
| Y10T 83/2124 | . . . . . And means to strip the outer surface of a cutter            |
| Y10T 83/2127 | . . . . . Ejector operated with return stroke of cutter               |
| Y10T 83/2129 | . . . . . By means carried by cooperating cutter                      |
| Y10T 83/2131 | . . . . . By cam-operated ejector                                     |
| Y10T 83/2133 | . . . . . By resiliently biased ejector                               |
| Y10T 83/2135 | . . . . Moving stripper timed with tool stroke                        |
| Y10T 83/2137 | . . . . . And alternatively movable to or from operating position     |
| Y10T 83/214  | . . . . . Latched stripper released by tool return                    |
| Y10T 83/2142 | . . . . . Plural strippers operative upon plural tools                |
| Y10T 83/2144 | . . . . . Single stripper operative upon plural tools                 |
| Y10T 83/2146 | . . . . . Spring arm stripper   |
| Y10T 83/2148 | . . . . . Linkage actuated  |

|              |           |   |
|--------------|-----------|---|
| Y10T 83/215  | . . . . . | Carried by moving tool element or its support                                   |
| Y10T 83/2153 | . . . . . | Fluid pressure actuated stripper  |
| Y10T 83/2155 | . . . . . | Stripper biased against product   |
| Y10T 83/2157 | . . . . . | Elastomeric stripper contacting product   |
| Y10T 83/2159 | . . . . . | By spring means   |
| Y10T 83/2161 | . . . . . | By free weight of stripper  |
| Y10T 83/2163 | . . . . . | Stripper biased against product   |
| Y10T 83/2166 | . . . . . | Spring biased stripper  |
| Y10T 83/2168 | . . . . . | Manually operated stripper  |
| Y10T 83/217  | . . . . . | Stationary stripper   |
| Y10T 83/2172 | . . . . . | Stripper encircles moving tool  |
| Y10T 83/2174 | . . . . . | Blockable exit port   |
| Y10T 83/2177 | . . . . . | Tool conforming member interposed between tool and work                         |
| Y10T 83/2179 | . . . . . | Including means to move, or resist movement of, cut pieces along delivery chute |
| Y10T 83/2181 | . . . . . | Active delivery means mounted on tool support                                   |
| Y10T 83/2183 | . . . . . | Product mover including gripper means   |
| Y10T 83/2185 | . . . . . | Suction gripper   |
| Y10T 83/2187 | . . . . . | Reciprocating product handler   |
| Y10T 83/219  | . . . . . | Rotating or oscillating product handler   |
| Y10T 83/2192 | . . . . . | Endless conveyor  |
| Y10T 83/2194 | . . . . . | And means to remove product therefrom   |
| Y10T 83/2196 | . . . . . | Roller[s]   |
| Y10T 83/2198 | . . . . . | Tiltable or withdrawable support  |
| Y10T 83/22   | . . . . . | Means to move product laterally   |
| Y10T 83/2203 | . . . . . | Oscillating means   |
| Y10T 83/2205 | . . . . . | Reciprocating means   |
| Y10T 83/2207 | . . . . . | Means to move product in a nonrectilinear path                                  |
| Y10T 83/2209 | . . . . . | Guide   |
| Y10T 83/2211 | . . . . . | Abutment in path of product being moved by work feeder                          |
| Y10T 83/2213 | . . . . . | Product-diverting conduit in or from hollow tool                                |
| Y10T 83/2216 | . . . . . | Inclined conduit, chute or plane  |
| Y10T 83/2218 | . . . . . | Abutment interposed in path of free fall or flight of product                   |
| Y10T 83/222  | . . . . . | With receptacle or support for cut product                                      |
| Y10T 83/242  | . . . . . | With means to clean work or tool  |
| Y10T 83/263  | . . . . . | With means to apply transient nonpropellant fluent material to tool or work     |
| Y10T 83/283  | . . . . . | With means to control or modify temperature of apparatus or work                |
| Y10T 83/293  | . . . . . | Of tool   |
| Y10T 83/303  | . . . . . | With tool sharpener or smoother   |
| Y10T 83/313  | . . . . . | Spatially fixed tool  |

- Y10T 83/323 . With means to stretch work temporarily
- Y10T 83/343 . With means to deform work temporarily
- Y10T 83/364 . By fluid blast and/or suction
- Y10T 83/384 . By tool inside hollow work
- Y10T 83/385 . . Work pre-packed with internal tool[s]
- Y10T 83/386 . . With expanding mandrel
- Y10T 83/387 . . Interrelated tool feed means and means to actuate work immobilizer
- Y10T 83/388 . . . Actuated clamp element and work holder coact to position work
- Y10T 83/39 . . Synchronized tool and work feeding means
- Y10T 83/391 . . With means to position tool[s] for cutting
- Y10T 83/392 . . One tool [either internal or external] having compound motion
- Y10T 83/393 . . . Annulus and disc-type tool pair
- Y10T 83/394 . . One tool having unidirectional rotary motion
- Y10T 83/395 . . One tool having only rectilinear motion[s]
- Y10T 83/396 . . . Annulus and disc-type tool pair
- Y10T 83/397 . . . . A tool has a sequence of motion in plural paths
- Y10T 83/398 . . . Internal tool is an active cutter
- Y10T 83/40 . . . Multiple external active tools
- Y10T 83/401 . . . . Tools operate in a substantially common transverse plane of cut
- Y10T 83/402 . . . . . With tool actuating cams on a common support
- Y10T 83/403 . . With manually actuated means to position or facilitate positioning of work
- Y10T 83/404 . By means to misalign aligned apertured tools
- Y10T 83/408 . . Combined with another type tool of the class
- Y10T 83/412 . . Rectilinear relative movement only
- Y10T 83/416 . . Rotary relative movement solely about a single pivot
- Y10T 83/42 . . . With plural apertures in one or both carriers
- Y10T 83/424 . By increased tensioning of work-enclosing wire
- Y10T 83/444 . Tool engages work during dwell of intermittent workfeed
- Y10T 83/4443 . . Unicyclic
- Y10T 83/4445 . . . Convertible to and from unicyclic
- Y10T 83/4448 . . . Controlled by mechanical means
- Y10T 83/445 . . With work-moving clamp jaw
- Y10T 83/4453 . . Work moved solely by movable abutment
- Y10T 83/4455 . . Operation initiated by work-driven detector means to measure work length
- Y10T 83/4458 . . Work-sensing means to control work-moving or work-stopping means
- Y10T 83/446 . . . With means to initiate tool feed by same control impulse
- Y10T 83/4463 . . Work-sensing means to initiate tool feed
- Y10T 83/4465 . . . With work-stopping abutment in sensing means
- Y10T 83/4468 . . Plural tools at same station, one positioned for continuous engagement with work

- Y10T 83/447 . . Plural tools successively actuated at same station
- Y10T 83/4473 . . . During one dwell period
- Y10T 83/4475 . . Tool has motion additional to cutting stroke during tool cycle
- Y10T 83/4478 . . . Tool has additional motion during work dwell
- Y10T 83/448 . . . . Included in plural cutting cycles
- Y10T 83/4483 . . . Tool has work-feeding motion
- Y10T 83/4486 . . With variable direction of work-feed from cycle to cycle
- Y10T 83/4488 . . . In one of certain selected directions
- Y10T 83/4491 . . Interlock between tool actuating and work feed means
- Y10T 83/4493 . . Tool motion initiates work feed and vice versa
- Y10T 83/4496 . . Stored energy means for moving work or tool, loaded by tool or work
- Y10T 83/4498 . . . Work feed means actuates energy storage device for tool
- Y10T 83/4501 . . Work feed means controlled by means mounted on tool or tool support
- Y10T 83/4503 . . . Such means drives the work feed means
- Y10T 83/4506 . . . . Work feed means carried by tool or tool support
- Y10T 83/4508 . . . . With supplemental work feed means
- Y10T 83/4511 . . . . On return stroke of tool
- Y10T 83/4513 . . . Work feed means halted by means on tool or tool support
- Y10T 83/4516 . . Work-feed mechanism in nonfeed motion effects or initiates tool actuation
- Y10T 83/4518 . . . By striking tool actuator
- Y10T 83/4521 . . . . Nonfeed motion is reverse to feed motion
- Y10T 83/4523 . . With means to vary number of work-feed increments between tool strokes
- Y10T 83/4526 . . Dwell caused by imposing reverse motion on portion of flexible moving work
- Y10T 83/4529 . . With uninterrupted flow of work from supply source
- Y10T 83/4531 . . Work feed increment shorter than longitudinal tool field
- Y10T 83/4534 . . Unequal work feed increments in recurring series
- Y10T 83/4536 . . . Work carriage carries ratchet means to determine increments
- Y10T 83/4539 . . Means to change tool position, or length or datum position of work- or tool-feed increment
- Y10T 83/4541 . . . With means to vary magnitude of work-feed increment
- Y10T 83/4544 . . . . Multi-increment type [e.g., ticket issuing]
- Y10T 83/4546 . . . . . Length selector initiates machine operation
- Y10T 83/4549 . . . . By change in length of one member of feed-driving linkage
- Y10T 83/4551 . . . . . Rotating member
- Y10T 83/4554 . . . . By change of effective shape of driving or driven surface of element of work-feed mechanism
- Y10T 83/4556 . . . . By adjustment of fixed stop
- Y10T 83/4559 . . . With means to vary magnitude or base position of tool stroke
- Y10T 83/4561 . . With means to facilitate manual repositioning [shift] of work
- Y10T 83/4564 . . With means to produce plurality of work-feed increments per tool cycle



- Y10T 83/4567 . . . Including supplemental work-feed means
- Y10T 83/4569 . . . . Manual
- Y10T 83/4572 . . . . With stop adapted to engage abutment surface on work
- Y10T 83/4574 . . . . . Plurality of work stops successively effective
- Y10T 83/4577 . . Work fed successively to plural tools
- Y10T 83/4579 . . . With change of direction between tools
- Y10T 83/4582 . . Work advance occurs during return stroke of tool
- Y10T 83/4584 . . Dwell defined only by "dead-center" of rotating crank
- Y10T 83/4587 . . Dwell initiated by disengagement of surface of moving frictional feed means from work
- Y10T 83/4589 . . . Feed means has interrupted frictional surface
- Y10T 83/4592 . . . Feed means has rotary motion
- Y10T 83/4594 . . Dwell caused by clamping or blocking work during continuous operation of feed means
- Y10T 83/4597 . . With means to control magnitude of work-feed increment or work acceleration
- Y10T 83/4599 . . . Means to prevent random or excessive work feeds
- Y10T 83/4602 . . . Full stroke required of feed means
- Y10T 83/4604 . . Work feed functions as tool support
- Y10T 83/4607 . . With rotary work-carrier
- Y10T 83/461 . . With abutment to position work being fed with respect to cutter
- Y10T 83/4612 . . . With slip between positioned work and feed means
- Y10T 83/4615 . . Work guide and feed means have open side
- Y10T 83/4617 . . Work feed means modified to maintain clearance from tool
- Y10T 83/462 . . Plurality of work feed means in separate paths
- Y10T 83/4622 . . Intermittent drive type of gearing for work-feed means
- Y10T 83/4625 . . . Gearing modified to lock the work-feed means
- Y10T 83/4627 . . . Mutilated gear in mesh with gear driving work-feed means
- Y10T 83/463 . . Work-feed element contacts and moves with work
- Y10T 83/4632 . . . Comprises a work-moving gripper
- Y10T 83/4635 . . . Comprises element entering aperture in, or engaging abutment surface on, work
- Y10T 83/4637 . . With means to guide, position, or present work to work-feed means
- Y10T 83/464 . . . Means to transport work to work-feed means
- Y10T 83/4642 . . . . Including means to pick articles from pack or stack
- Y10T 83/4645 . . With means to clamp work during dwell
- Y10T 83/4647 . . One-revolution clutch in tool drive
- Y10T 83/465 . . Cutting motion of tool has component in direction of moving work
- Y10T 83/4653 . . With means to initiate intermittent tool action
- Y10T 83/4656 . . . Tool moved in response to work-sensing means
- Y10T 83/4659 . . . . With means to vary "length" of product

|              |           |  |
|--------------|-----------|--|
| Y10T 83/4662 | . . . . . | To vary an end-product "length" [e.g., "crop cut"]                                 |
| Y10T 83/4664 | . . . . . | With photo-electric work-sensing means   |
| Y10T 83/4667 | . . . . . | With trip-switch work-sensing means  |
| Y10T 83/467  | . . . . . | To initiate feed movement of tool  |
| Y10T 83/4673 | . . . . . | And to initiate flying movement of tool  |
| Y10T 83/4676 | . . . . . | With work-responsive means to initiate flying movement of tool                     |
| Y10T 83/4679 | . . . . . | With flying work-gripper means related to tool carrier                             |
| Y10T 83/4682 | . . . . . | With means controlling flying speed dependent on work speed                        |
| Y10T 83/4685 | . . . . . | With means to vary frequency of initiation   |
| Y10T 83/4688 | . . . . . | By orbitally traveling trigger pin[s]  |
| Y10T 83/4691 | . . . . . | Interrelated control of tool and work-feed drives                                  |
| Y10T 83/4693 | . . . . . | With means to concurrently adjust flying frequency and retain flying speed of tool |
| Y10T 83/4696 | . . . . . | Plural diverse flying cutters  |
| Y10T 83/4699 | . . . . . | Combined with other type cutter  |
| Y10T 83/4702 | . . . . . | With slitter   |
| Y10T 83/4705 | . . . . . | Plural separately mounted flying cutters   |
| Y10T 83/4708 | . . . . . | With means to render cutter pass[es] ineffective                                   |
| Y10T 83/4711 | . . . . . | With means to produce "mis-cut"  |
| Y10T 83/4714 | . . . . . | Oscillating work shifter adjacent cutter   |
| Y10T 83/4717 | . . . . . | Work actuated sensor initiates shifter   |
| Y10T 83/472  | . . . . . | Wire tool  |
| Y10T 83/4722 | . . . . . | On tool support having reciprocation parallel to direction of work-feed            |
| Y10T 83/4725 | . . . . . | And rotation about axis parallel to direction of work-feed                         |
| Y10T 83/4728 | . . . . . | Tool flies by engagement with the work   |
| Y10T 83/4731 | . . . . . | Tool merely flexes with moving work  |
| Y10T 83/4734 | . . . . . | Flying support or guide for work   |
| Y10T 83/4737 | . . . . . | With tool speed regulator  |
| Y10T 83/474  | . . . . . | With work feed speed regulator   |
| Y10T 83/4743 | . . . . . | With means to vary cyclically speed of work  |
| Y10T 83/4746 | . . . . . | Spring return of tool in counterfly direction                                      |
| Y10T 83/4749 | . . . . . | Tool mounted on oscillating standard   |
| Y10T 83/4751 | . . . . . | Both tools of couple on single standard  |
| Y10T 83/4754 | . . . . . | One tool swings out of work path on return stroke                                  |
| Y10T 83/4757 | . . . . . | Tool carrier shuttles rectilinearly parallel to direction of work feed             |
| Y10T 83/476  | . . . . . | Including means to secure work to carrier  |
| Y10T 83/4763 | . . . . . | Both members of cutting pair on same carrier                                       |
| Y10T 83/4766 | . . . . . | Orbital motion of cutting blade  |
| Y10T 83/4769 | . . . . . | Work feeder mounted on tool support  |
| Y10T 83/4772 | . . . . . | Gripper-type feeder  |

|              |           |   |
|--------------|-----------|---|
| Y10T 83/4775 | . . .     | Tool speed varied within each orbital cycle                     |
| Y10T 83/4778 | . . .     | Work feed gripper carried on endless belt                       |
| Y10T 83/478  | . . .     | Endless belt or chain tool carrier                              |
| Y10T 83/4783 | . . .     | Constantly oriented tool with arcuate cutting path              |
| Y10T 83/4786 | . . . .   | Cutting couple type   |
| Y10T 83/4789 | . . .     | Rotatable disc-type tool on orbiting axis                       |
| Y10T 83/4792 | . . . .   | Idling disc   |
| Y10T 83/4795 | . . .     | Rotary tool   |
| Y10T 83/4798 | . . . .   | Segmented disc slitting or slotting tool                        |
| Y10T 83/4801 | . . . .   | With undulant cutting edge [e.g., "pinking" tool]               |
| Y10T 83/4804 | . . . .   | Single tool action drive  |
| Y10T 83/4807 | . . . . . | With one-revolution drive                                       |
| Y10T 83/4809 | . . . .   | With loop former preceding tool                                 |
| Y10T 83/4812 | . . . .   | Compound movement of tool during tool cycle                     |
| Y10T 83/4815 | . . . . . | Axial reciprocation of tool                                     |
| Y10T 83/4818 | . . . .   | Interconnected work feeder and tool driver                      |
| Y10T 83/4821 | . . . .   | Side cutting helical blade                                      |
| Y10T 83/4824 | . . . .   | With means to cause progressive transverse cutting              |
| Y10T 83/4827 | . . . . . | With helical cutter blade                                       |
| Y10T 83/483  | . . . .   | With cooperating rotary cutter or backup                        |
| Y10T 83/4833 | . . . . . | Cooperating tool axes adjustable relative to each other         |
| Y10T 83/4836 | . . . . . | With radial overlap of the cutting members                      |
| Y10T 83/4838 | . . . . . | With anvil backup   |
| Y10T 83/4841 | . . . . . | With resilient anvil surface                                    |
| Y10T 83/4844 | . . . . . | Resiliently urged cutter or anvil member                        |
| Y10T 83/4847 | . . . .   | With cooperating stationary tool                                |
| Y10T 83/485  | . .       | Cutter with timed stroke relative to moving work                |
| Y10T 83/487  | . .       | Work swings about progressively cutting tool during tool stroke |
| Y10T 83/489  | . .       | Tool actuated by movable work support                           |
| Y10T 83/49   | . .       | Traveling cutter  |
| Y10T 83/492  | . .       | With means to vary timing of tool feed                          |
| Y10T 83/494  | . .       | Uniform periodic tool actuation                                 |
| Y10T 83/496  | . . .     | With periodic lateral feed of tool or work                      |
| Y10T 83/498  | . . .     | With plural tool stations                                       |
| Y10T 83/50   | . . .     | Reciprocating tool  |
| Y10T 83/501  | . . .     | With plural tools on a single tool support                      |
| Y10T 83/503  | . .       | With plural tool stations                                       |
| Y10T 83/505  | . .       | Operation controlled by means responsive to product             |
| Y10T 83/515  | . .       | Actuation of tool controlled                                    |
| Y10T 83/525  | . .       | Operation controlled by detector means responsive to work       |

- Y10T 83/527 . . With means to control work-responsive signal system
- Y10T 83/528 . . . To delay response to work-senser
- Y10T 83/53 . . . To change length of product
- Y10T 83/531 . . With plural work-sensing means
- Y10T 83/533 . . With photo-electric work-sensing means
- Y10T 83/535 . . Release of interlock controlled
- Y10T 83/536 . . Movement of work controlled
- Y10T 83/538 . . Positioning of tool controlled
- Y10T 83/54 . . Actuation of tool controlled by work-driven means to measure work length
- Y10T 83/541 . . Actuation of tool controlled in response to work-sensing means
- Y10T 83/543 . . . Sensing means responsive to work indicium or irregularity
- Y10T 83/544 . . . With trip-switch in work-sensing mechanism
- Y10T 83/546 . Interrelated tool actuating and work guide moving means
- Y10T 83/566 . Interrelated tool actuating means and means to actuate work immobilizer
- Y10T 83/5669 . . Work clamp
- Y10T 83/5678 . . . Tool deflected by guide on tightened clamp
- Y10T 83/5687 . . . . With means to control clamping force
- Y10T 83/5696 . . . . Clamp driven by reaction from tool force
- Y10T 83/5705 . . . . With means providing for plural steps in clamping stroke
- Y10T 83/5715 . . . . With sequencing means
- Y10T 83/5724 . . . . With provision for manual control of clamp
- Y10T 83/5733 . . . . Tool or tool support on movable clamp jaw
- Y10T 83/5742 . . . . Clamp moved by direct impact of tool or tool support
- Y10T 83/5751 . . . . . Clamp retracted by impact of tool or tool support
- Y10T 83/576 . . . . Clamp actuating means driven by tool or tool support
- Y10T 83/5769 . . . . . Clamp yieldably driven by tool or tool support
- Y10T 83/5778 . . . . . . With resilient drive element
- Y10T 83/5787 . . . . . Clamp driven by yieldable means
- Y10T 83/5796 . . . . . Drive means is resilient
- Y10T 83/5805 . . . . . Fluid pressure yieldable drive means
- Y10T 83/5815 . . Work-stop abutment
- Y10T 83/5824 . . . . Oppositely effective abutments
- Y10T 83/5833 . . . . With cyclic means to alter work-stopping position
- Y10T 83/5842 . . . . Stop partakes of tool motion
- Y10T 83/5851 . . . . . Carried by tool or tool support
- Y10T 83/586 . . Interrelated tool actuating means and means to actuate work-mover stop
- Y10T 83/606 . . Interrelated tool actuating means and guard means
- Y10T 83/613 . . Work guard
- Y10T 83/619 . . Cutter guide slot closer

- Y10T 83/626 . Operation of member controlled by means responsive to position of element remote from member [e.g., interlock]
- Y10T 83/637 . . With means to initiate operation of member
- Y10T 83/647 . With means to convey work relative to tool station
- Y10T 83/6472 . . By fluid current
- Y10T 83/6473 . . Centrifugal feed to tangential tool [e.g., "Beria" type]
- Y10T 83/6475 . . With means to regulate work-feed speed
- Y10T 83/6476 . . Including means to move work from one tool station to another
- Y10T 83/6478 . . . Tool stations angularly related
- Y10T 83/648 . . . . Work manipulated between tool stations
- Y10T 83/6481 . . . . With static tool
- Y10T 83/6483 . . . Tool stations staggered relative to one another
- Y10T 83/6484 . . . Punch or die station
- Y10T 83/6486 . . . Notcher or pinker station
- Y10T 83/6488 . . . Work reciprocated past double-edged knife
- Y10T 83/6489 . . . Slitter station
- Y10T 83/6491 . . . . And transverse cutter station
- Y10T 83/6492 . . Plural passes of diminishing work piece through tool station
- Y10T 83/6494 . . . Work alternately, angularly re-oriented relative to tool station
- Y10T 83/6496 . . . . By additional means to engage work and orient it relative to tool station
- Y10T 83/6497 . . . . By roller or roll-like element
- Y10T 83/6499 . . . Work rectilinearly reciprocated through tool station
- Y10T 83/65 . . . . With means to cause or permit angular re-orientation of work about axis parallel to plane of cut
- Y10T 83/6502 . . . . . By endless member having work-engaging teeth
- Y10T 83/6504 . . . . . By member having work-engaging tooth
- Y10T 83/6505 . . . . . . Including plural work-engaging teeth
- Y10T 83/6507 . . . . . . . Fluid operated
- Y10T 83/6508 . . . . With means to cause movement of work transversely toward plane of cut
- Y10T 83/651 . . . . . By means to cause movement toward and away from plane of cut
- Y10T 83/6512 . . . . . . Actuated by movement of a member on reciprocating means
- Y10T 83/6513 . . . . . . Actuated by passive means which is external to reciprocating means
- Y10T 83/6515 . . . . . . By means to define increment of movement toward plane of cut
- Y10T 83/6516 . . . . . . Interrelated with movement of reciprocating means
- Y10T 83/6518 . . . . . . By pusher mechanism
- Y10T 83/652 . . . . . . With additional work holding or positioning means
- Y10T 83/6521 . . . . . . . Work holding means includes actuator
- Y10T 83/6523 . . . . . . . Including plural, simultaneously acting pusher elements

|              |           |   |
|--------------|-----------|---|
| Y10T 83/6524 | . . . . . | Independently adjustable  |
| Y10T 83/6526 | . . . . . | With additional means to retract elements                                   |
| Y10T 83/6528 | . . . . . | Power derived from movement of reciprocating means                          |
| Y10T 83/6529 | . . . . . | Power derived from fluid pressure means                                     |
| Y10T 83/6531 | . . . . . | Movement by screw means   |
| Y10T 83/6532 | . . . . . | Movement by rack and pinion or pawl   |
| Y10T 83/6534 | . . . . . | With handle   |
| Y10T 83/6536 | . . . . . | By carriage   |
| Y10T 83/6537 | . . . . . | By cable or belt drive  |
| Y10T 83/6539 | . . . . . | With means for transverse positioning of work on a moving conveyor          |
| Y10T 83/654  | . . . . . | With work-constraining means on work conveyor [i.e., "work-carrier"]        |
| Y10T 83/6542 | . . . . . | Plural means to constrain plural work pieces                                |
| Y10T 83/6544 | . . . . . | End of work protrudes through aperture in carrier                           |
| Y10T 83/6545 | . . . . . | With means to guide work-carrier in nonrectilinear path                     |
| Y10T 83/6547 | . . . . . | About axis fixed relative to tool station                                   |
| Y10T 83/6548 | . . . . . | Infeed  |
| Y10T 83/655  | . . . . . | About vertical axis   |
| Y10T 83/6552 | . . . . . | Cut normal to axis  |
| Y10T 83/6553 | . . . . . | Work-guide tube   |
| Y10T 83/6555 | . . . . . | Cut normal to axis  |
| Y10T 83/6556 | . . . . . | Oscillating work-carrier  |
| Y10T 83/6558 | . . . . . | Multiple cutters  |
| Y10T 83/656  | . . . . . | Coaxial rotary cutters  |
| Y10T 83/6561 | . . . . . | Work stationary during cut  |
| Y10T 83/6563 | . . . . . | With means to orient or position work carrier relative to tool station      |
| Y10T 83/6564 | . . . . . | By pattern or templet   |
| Y10T 83/6566 | . . . . . | By indexing means   |
| Y10T 83/6568 | . . . . . | With additional work-locating means on work-carrier                         |
| Y10T 83/6569 | . . . . . | With means to stop work conveyor  |
| Y10T 83/6571 | . . . . . | With means to store work articles   |
| Y10T 83/6572 | . . . . . | With additional means to engage work and orient it relative to tool station |
| Y10T 83/6574 | . . . . . | By work-stopping abutment   |
| Y10T 83/6576 | . . . . . | By opposed lateral guide means  |
| Y10T 83/6577 | . . . . . | With means to adjust additional means                                       |
| Y10T 83/6579 | . . . . . | With means to press work to work-carrier                                    |
| Y10T 83/658  | . . . . . | With projections on work-carrier [e.g., pin wheel]                          |
| Y10T 83/6582 | . . . . . | Tool between tandem arranged work carrying means                            |
| Y10T 83/6584 | . . . . . | Cut made parallel to direction of and during work movement                  |
| Y10T 83/6585 | . . . . . | Including nonconcurrently acting tool                                       |
| Y10T 83/6587 | . . . . . | Including plural, laterally spaced tools                                    |

|              |           |  |
|--------------|-----------|--|
| Y10T 83/6588 | . . . .   | Tools mounted on common tool support                               |
| Y10T 83/659  | . . . . . | Tools axially shiftable on support                                 |
| Y10T 83/6592 | . . .     | Interrelated work-conveying and tool-moving means                  |
| Y10T 83/6593 | . . . .   | With reciprocating tool [e.g., "jigsaw" type]                      |
| Y10T 83/6595 | . . . .   | With means to move tool laterally of feed direction during cutting |
| Y10T 83/6596 | . . . .   | With means to effect difference between work speed and tool speed  |
| Y10T 83/6598 | . . . .   | Tool co-axial with work-conveying means                            |
| Y10T 83/66   | . . .     | With means to press work to tool                                   |
| Y10T 83/6601 | . . .     | Bevel cutting tool   |
| Y10T 83/6603 | . . .     | Tool shiftable relative to work-conveying means                    |
| Y10T 83/6604 | . . .     | Tool in contact with surface of work-conveying means               |
| Y10T 83/6606 | . . .     | Tool between laterally spaced work-conveying means                 |
| Y10T 83/6608 | . . .     | By rectilinearly moving work carriage                              |
| Y10T 83/6609 | . . . .   | Angularly adjustable   |
| Y10T 83/6611 | . . . . . | Having positive adjustment stop; e.g., link                        |
| Y10T 83/6612 | . . . . . | Having position indicating means                                   |
| Y10T 83/6614 | . . . .   | Pusher engaging rear surface of work                               |
| Y10T 83/6616 | . . . . . | Having means to actuate pusher                                     |
| Y10T 83/6617 | . . . . . | Hydraulic or pneumatic means                                       |
| Y10T 83/6619 | . . . . . | Gear or pulley actuated pusher                                     |
| Y10T 83/662  | . . . . . | Lever, cam, or link actuated pusher                                |
| Y10T 83/6622 | . . . .   | Having means to actuate carriage                                   |
| Y10T 83/6624 | . . . . . | Hydraulic or pneumatic means                                       |
| Y10T 83/6625 | . . . . . | Gear or pulley   |
| Y10T 83/6627 | . . . . . | Adapted to place tension on flacid member                          |
| Y10T 83/6628 | . . . . . | Lever, cam, or link means  |
| Y10T 83/663  | . . . .   | On or attached to vehicle  |
| Y10T 83/6632 | . . . .   | Supported for movement at one side of tool only                    |
| Y10T 83/6633 | . . .     | By work moving flexible chain or conveyor                          |
| Y10T 83/6635 | . . .     | By feed roller   |
| Y10T 83/6636 | . . . .   | Pinch rollers  |
| Y10T 83/6638 | . . .     | Unattached manual work pusher                                      |
| Y10T 83/664  | . .       | Roller   |
| Y10T 83/6641 | . . .     | Plural independent rollers for feed of plural distinct work        |
| Y10T 83/6643 | . . .     | Shaped to conform to work  |
| Y10T 83/6644 | . . .     | With work-supplying reel   |
| Y10T 83/6646 | . . . .   | And provision for selecting feed length                            |
| Y10T 83/6648 | . . .     | Continuous conveying during , cutting; e.g., straw cutting         |
| Y10T 83/6649 | . . .     | Supporting work at cutting station                                 |
| Y10T 83/6651 | . . . .   | Comprising part of cutting station                                 |



- Y10T 83/6652 . . . Tool and feed roller actuated by common handle
- Y10T 83/6654 . . . Tool and roller on common movable support
- Y10T 83/6656 . . Rectilinear movement only
- Y10T 83/6657 . . . Tool opposing pusher
- Y10T 83/6659 . . . . Hydraulically or pneumatically actuated
- Y10T 83/666 . . . . Screw actuated
- Y10T 83/6662 . . . . Gear or pulley actuated
- Y10T 83/6664 . . . . Lever, cam, or link actuated
- Y10T 83/6665 . . . . Spring or gravity urged
- Y10T 83/6667 . . Work carrier rotates about axis fixed relative to tool station
- Y10T 83/6668 . . Interrelated work-feeding means and tool-moving means
- Y10T 83/667 . Tool carrier or guide affixed to work during cutting
- Y10T 83/674 . . By flexible work-engaging member
- Y10T 83/68 . . Entirely work supported
- Y10T 83/687 . By tool reciprocable along elongated edge
- Y10T 83/6875 . . With means permitting tool to be rotatably adjusted about its cutting edge during cutting
- Y10T 83/688 . . With dynamic balancing or shock absorbing means
- Y10T 83/6885 . . With tool of another type
- Y10T 83/689 . . With means to change to other type tool
- Y10T 83/6895 . . Plural reciprocable tools
- Y10T 83/69 . . Stored energy furnishes drive in one direction
- Y10T 83/6905 . . With tool in-feed
- Y10T 83/691 . . . And auxiliary means for promoting or retarding tool in-feed
- Y10T 83/6915 . . . . By yieldable means
- Y10T 83/692 . . . . And means to vary tool in-feed speed
- Y10T 83/6925 . . . . With interrelated tool actuating and in-feed means
- Y10T 83/693 . . . Of rectilinearly reciprocating tool
- Y10T 83/6935 . . . . With in-feed by pivoting carrier
- Y10T 83/694 . . . And means to prevent tool in-feed
- Y10T 83/6945 . . . With passive means to guide tool directly
- Y10T 83/695 . . . . By plural opposed guide surfaces
- Y10T 83/6955 . . . . . Having relative adjustment between guide surfaces
- Y10T 83/696 . . . . . With relative adjustment between guide and work or work-support
- Y10T 83/6965 . . . . . . By or with additional movable work-support portion
- Y10T 83/697 . . . . . . By rotation about an axis parallel to the work-support surface
- Y10T 83/6975 . . . . . . By rotation about an axis perpendicular to the work-support surface
- Y10T 83/698 . . . Including means to cause nonrectilinear tool infeed
- Y10T 83/6985 . . . Of arcuately oscillating tool



|              |  |
|--------------|--|
| Y10T 83/699  | . . . Of tool carrier on single moving pivot                                       |
| Y10T 83/6995 | . . . . Pivot moves in closed loop   |
| Y10T 83/70   | . . . . Pivot moves to and fro in arcuate path                                     |
| Y10T 83/7005 | . . . . . Axis of arcuate path moves during cutting                                |
| Y10T 83/701  | . . . . Pivot moves to and fro in rectilinear path                                 |
| Y10T 83/7015 | . . Having uniplanar compound motion   |
| Y10T 83/702  | . . . By plural arcuately oscillating carrier                                      |
| Y10T 83/7025 | . . . Constantly oriented tool travelling in orbit                                 |
| Y10T 83/703  | . . . Tool rocks cutting reciprocations  |
| Y10T 83/7035 | . . . . One tool reciprocates along fixed guide element                            |
| Y10T 83/704  | . . With work-support and means to vary relationship between tool and work support |
| Y10T 83/7045 | . . Arcuately oscillating tool carried on single pivot                             |
| Y10T 83/705  | . . With means to support tool at opposite ends                                    |
| Y10T 83/7055 | . . . And apply drive force to both ends of tool                                   |
| Y10T 83/706  | . . . . By flexible drive means  |
| Y10T 83/7065 | . . . . By reciprocating rigid support   |
| Y10T 83/707  | . By endless band or chain knife   |
| Y10T 83/7076 | . . With programming means   |
| Y10T 83/7083 | . . With cutter other than endlessly orbiting type                                 |
| Y10T 83/7089 | . . Including contiguous oppositely moving knife portions                          |
| Y10T 83/7095 | . . With means to change to non-endlessly orbiting cutter                          |
| Y10T 83/7101 | . . With tool in-feed  |
| Y10T 83/7108 | . . . Including ground-traversing vehicle  |
| Y10T 83/7114 | . . . Including means to permit arcuate in-feed motion                             |
| Y10T 83/712  | . . . . Including means to relocate path of in-feed motion                         |
| Y10T 83/7126 | . . . . . Angular relative previous path   |
| Y10T 83/7133 | . . . By gravity   |
| Y10T 83/7139 | . . . . With fluid in-feed regulating means  |
| Y10T 83/7145 | . . . By motor-driven mechanism  |
| Y10T 83/7151 | . . With scale or indicator  |
| Y10T 83/7158 | . . Including plural cutting zones   |
| Y10T 83/7164 | . . . With adjustment of separation between zones                                  |
| Y10T 83/717  | . . . . By lever means   |
| Y10T 83/7176 | . . . . By screw-threaded means  |
| Y10T 83/7183 | . . . Including "figure-8" band  |
| Y10T 83/7189 | . . . Comprising plural bands  |
| Y10T 83/7195 | . . Including means to adjust relationship between band and work-support surface   |
| Y10T 83/7201 | . . . By varying angle between band and work-support surface                       |

|              |  |
|--------------|--|
| Y10T 83/7208 | . . . . By tilting band carrier  |
| Y10T 83/7214 | . . . . . About point of intersection of cutting span and work-support surface |
| Y10T 83/722  | . . . By varying distance between band and work-support surface                |
| Y10T 83/7226 | . . With means to guard the tension  |
| Y10T 83/7233 | . . . Including means to retard undriven pulley or sprocket                    |
| Y10T 83/7239 | . . . With means to vary distance between pulley or sprocket axes              |
| Y10T 83/7245 | . . . . And angular relationship of axes                                       |
| Y10T 83/7251 | . . . . Including means to yieldably bias pulley                               |
| Y10T 83/7258 | . . . . . By fluid means   |
| Y10T 83/7264 | . . With special blade guide means   |
| Y10T 83/727  | . With means to guide moving work  |
| Y10T 83/728  | . . In pivotal or arcuate movement   |
| Y10T 83/73   | . . Guide fixed to or integral with stationary tool element                    |
| Y10T 83/731  | . . . Tool element cooperates with a second tool                               |
| Y10T 83/732  | . . With guard   |
| Y10T 83/734  | . . With attachment or operative connection to tool carrier                    |
| Y10T 83/735  | . . With attachment or operative connection to passive tool guide              |
| Y10T 83/736  | . . Guide cooperates with template or straight edge secured to work            |
| Y10T 83/738  | . . Curved or deflecting guide   |
| Y10T 83/739  | . . Positively confines or otherwise determines path of work                   |
| Y10T 83/74   | . . Adapted to permit maneuvering of work at tool zone                         |
| Y10T 83/741  | . . With movable or yieldable guide element                                    |
| Y10T 83/743  | . . . Opposed to work-supporting surface                                       |
| Y10T 83/744  | . . Plural guide elements  |
| Y10T 83/745  | . . . Opposed  |
| Y10T 83/747  | . . Opposed to work-supporting surface   |
| Y10T 83/748  | . With work immobilizer  |
| Y10T 83/7487 | . . Means to clamp work  |
| Y10T 83/7493 | . . . Combined with, peculiarly related to, other element                      |
| Y10T 83/75   | . . . . With or to tool guide  |
| Y10T 83/7507 | . . . . Guide for traveling cutter   |
| Y10T 83/7513 | . . . . Tool or tool support on movable clamp jaw                              |
| Y10T 83/752  | . . . With means providing for plural steps in clamping stroke                 |
| Y10T 83/7527 | . . . With equalizer or self-aligning jaw                                      |
| Y10T 83/7533 | . . . With biasing or counterbalancing means                                   |
| Y10T 83/754  | . . . Clamp driven by yieldable means  |
| Y10T 83/7547 | . . . Liquid pressure actuating means  |
| Y10T 83/7553 | . . . Including means to retain clamp jaw in position                          |
| Y10T 83/756  | . . . Self-locking drive means   |

|              |   |
|--------------|---|
| Y10T 83/7567 | . . . Manually actuated drive means   |
| Y10T 83/7573 | . . . Including clamping face of specific structure   |
| Y10T 83/758  | . . . With means to adjust clamp position or stroke   |
| Y10T 83/7587 | . . Gapped work-constrainer   |
| Y10T 83/7593 | . . Work-stop abutment  |
| Y10T 83/76   | . . . With scale or indicator   |
| Y10T 83/7607 | . . . Normal to plane of cut  |
| Y10T 83/7613 | . . . . Adjustable  |
| Y10T 83/762  | . . . . . Angularly relative to plane of cut; e.g., miter   |
| Y10T 83/7627 | . . . . With traversing cutter guide; e.g., cut-off saw   |
| Y10T 83/7633 | . . . Collapsible   |
| Y10T 83/764  | . . . Retractable   |
| Y10T 83/7647 | . . . Adjustable  |
| Y10T 83/7653 | . . . . Having curved cutting edge to make arcuate cut, plural nonaligned intersecting cutting edges, or spaced punches |
| Y10T 83/766  | . . . . . Spaced edges  |
| Y10T 83/7667 | . . . Having curved cutting edge to make arcuate cut, plural nonaligned intersecting cutting edges, or spaced punches   |
| Y10T 83/7673 | . . . . Spaced edges  |
| Y10T 83/768  | . Rotatable disc tool pair or tool and carrier  |
| Y10T 83/7684 | . . With means to support work relative to tool[s]  |
| Y10T 83/7688 | . . . Plural tool elements successively actuated at same station  |
| Y10T 83/7693 | . . . Tool moved relative to work-support during cutting  |
| Y10T 83/7697 | . . . . Tool angularly adjustable relative to work-support  |
| Y10T 83/7701 | . . . Supporting surface and tool axis angularly related  |
| Y10T 83/7705 | . . . . Adjustable angular relationship   |
| Y10T 83/7709 | . . . Unidirectionally movable work support   |
| Y10T 83/7713 | . . . . With opposed work-presser   |
| Y10T 83/7718 | . . . . . Presser co-axial with tool  |
| Y10T 83/7722 | . . . Support and tool relatively adjustable  |
| Y10T 83/7726 | . . . . By movement of the tool   |
| Y10T 83/773  | . . . Work-support includes passageway for tool [e.g., slotted table]   |
| Y10T 83/7734 | . . With guard for tool   |
| Y10T 83/7738 | . . Optional tool pairs alternatively operative   |
| Y10T 83/7743 | . . . One element of tool pairs common to all pairs   |
| Y10T 83/7747 | . . With means to permit replacement of tool  |
| Y10T 83/7751 | . . Means to separate elements of tool pair   |
| Y10T 83/7755 | . . Carrier for rotatable tool movable during cutting   |
| Y10T 83/7759 | . . . Unicyclic movement  |
| Y10T 83/7763 | . . . Tool carrier reciprocable rectilinearly   |

- Y10T 83/7768 . . . . With means to adjust path of reciprocation
- Y10T 83/7772 . . . . . Angular relative to previous path
- Y10T 83/7776 . . . . With means to reciprocate carrier
- Y10T 83/778 . . . . . And means to rotate tool
- Y10T 83/7784 . . . . With means to rotate tool
- Y10T 83/7788 . . . . Tool carrier oscillated or rotated
- Y10T 83/7793 . . Means to rotate or oscillate tool
- Y10T 83/7797 . . . . Including means to rotate both elements of tool pair
- Y10T 83/7801 . . . . . Including means to rotate both elements at different speeds
- Y10T 83/7805 . . . . . And means to change speed of rotation
- Y10T 83/7809 . . Tool pair comprises rotatable tools
- Y10T 83/7813 . . . . Tool pair elements angularly related
- Y10T 83/7818 . . . . . Elements of tool pair angularly adjustable relative to each other
- Y10T 83/7822 . . . . Tool pair axially shiftable
- Y10T 83/7826 . . . . . With shifting mechanism for at least one element of tool pair
- Y10T 83/783 . . . . Tool pair comprises contacting overlapped discs
- Y10T 83/7834 . . . . . With means to effect axial pressure on pair
- Y10T 83/7838 . . . . . With means to change axial pressure
- Y10T 83/7843 . . . . . With means to change overlap of discs
- Y10T 83/7847 . . . . Tool element axially shiftable
- Y10T 83/7851 . . . . Tool pair comprises disc and cylindrical anvil
- Y10T 83/7855 . . . . . With adjustable means to urge tool elements together
- Y10T 83/7859 . . . . Elements of tool pair adjustably spaced
- Y10T 83/7863 . . Tool pair comprises rotatable tool and nonrotatable tool
- Y10T 83/7868 . . Tool element selectively operative
- Y10T 83/7872 . . Tool element mounted for adjustment
- Y10T 83/7876 . . . . Plural, axially spaced tool elements
- Y10T 83/788 . . Tool pair comprises rotatable anvil and fixed-type tool
- Y10T 83/793 . . Anvil has motion in addition to rotation [i.e., traveling anvil]
- Y10T 83/798 . . . . Additional motion is along fixed arcuate path
- Y10T 83/803 . . . . With plural anvils
- Y10T 83/808 . . Two tool pairs, driver for one pair moves relative to driver for other pair
- Y10T 83/811 . . One tool support acts as driver for other
- Y10T 83/814 . . . . Punch and shear
- Y10T 83/817 . . With variable spacing between tool pairs
- Y10T 83/819 . . . . With intermediate work support
- Y10T 83/822 . . Punch and shear
- Y10T 83/825 . . Successively acting
- Y10T 83/828 . . With illuminating or viewing means for work
- Y10T 83/839 . . Mirror or lens

|              |   |
|--------------|---|
| Y10T 83/849  | . With signal, scale, or indicator  |
| Y10T 83/85   | . . Signal; e.g., alarm   |
| Y10T 83/851  | . . Indicator comprising work or product  |
| Y10T 83/852  | . . Responsive to force   |
| Y10T 83/853  | . . Indicates tool position   |
| Y10T 83/855  | . . . Relative to another element   |
| Y10T 83/856  | . . . . To work-engaging member   |
| Y10T 83/857  | . . . . . Calibrated scale or indicator   |
| Y10T 83/858  | . . . . . Indicates dimension of work being cut   |
| Y10T 83/859  | . . . . . Dynamic indicator   |
| Y10T 83/86   | . . . . To another tool assembly  |
| Y10T 83/861  | . . . . To cooperating tool   |
| Y10T 83/862  | . . . . To another component of tool assembly   |
| Y10T 83/863  | . . . . Adjustable guide for traversing tool; e.g., radial saw guide or miter saw guide |
| Y10T 83/865  | . . Indicates work characteristic   |
| Y10T 83/866  | . . Indicates wear  |
| Y10T 83/867  | . . Bubble level  |
| Y10T 83/868  | . . Counter   |
| Y10T 83/869  | . Means to drive or to guide tool   |
| Y10T 83/8691 | . . Unicyclic   |
| Y10T 83/8693 | . . . With adjustable stopping point or tool  |
| Y10T 83/8694 | . . . With brake or blocking means  |
| Y10T 83/8696 | . . Means to change datum plane of tool or tool presser stroke                          |
| Y10T 83/8697 | . . . For disabling of continuously actuated cutter                                     |
| Y10T 83/8699 | . . . With adjustable stop  |
| Y10T 83/87   | . . . By varying length of tool stroke  |
| Y10T 83/8702 | . . Clicker die press   |
| Y10T 83/8703 | . . . With die handling attachment  |
| Y10T 83/8704 | . . . With reciprocating presser  |
| Y10T 83/8706 | . . . . Laterally movable to selective operative positions                              |
| Y10T 83/8707 | . . . . . Pivotal or revolving only   |
| Y10T 83/8709 | . . . . . With means to impart, limit, or control pivotal motion of presser             |
| Y10T 83/871  | . . . . . Interrelated with presser reciprocating means                                 |
| Y10T 83/8712 | . . . . . With means to mount presser for oscillation about column                      |
| Y10T 83/8713 | . . . . With adjustable bed block   |
| Y10T 83/8714 | . . . . Including presser member reinforcing, or flexure compensating, means            |
| Y10T 83/8716 | . . . . With manually actuated control apparatus for reciprocation of presser member    |
| Y10T 83/8717 | . . By deforming resilient tool or tool support   |

- Y10T 83/8719 . . With transmission yieldable on overload
- Y10T 83/872 . . With guard means
- Y10T 83/8722 . . . Static
- Y10T 83/8723 . . . . Adjustable
- Y10T 83/8725 . . Including movable, tool protecting, cushioning sheet
- Y10T 83/8726 . . Single tool with plural selective driving means
- Y10T 83/8727 . . Plural tools selectively engageable with single drive
- Y10T 83/8729 . . . Predetermined sequence of selection
- Y10T 83/873 . . . . Of paired tools
- Y10T 83/8732 . . . Turret of tools
- Y10T 83/8733 . . Tool movable to cooperate selectively with one of a plurality of mating tools
- Y10T 83/8735 . . With means providing for plural steps in tool stroke
- Y10T 83/8736 . . Sequential cutting motions
- Y10T 83/8737 . . With tool positioning means synchronized with cutting stroke
- Y10T 83/8739 . . . Anvil moves into and out of operative position
- Y10T 83/874 . . . Straight line positioning
- Y10T 83/8742 . . Tool pair positionable as a unit
- Y10T 83/8743 . . . Straight line positioning
- Y10T 83/8745 . . Tool and anvil relatively positionable
- Y10T 83/8746 . . . Straight line
- Y10T 83/8748 . . Tool displaceable to inactive position [e.g., for work loading]
- Y10T 83/8749 . . . By pivotal motion
- Y10T 83/875 . . With templet surface following tool
- Y10T 83/8752 . . Tool moves work to and against cooperating tool
- Y10T 83/8753 . . . With means to clamp or bind work to moving tool
- Y10T 83/8755 . . . One tool resiliently mounted or biased
- Y10T 83/8756 . . . Work forced through tool aperture or between spaced cooperating tools
- Y10T 83/8758 . . . Manually actuated work-moving tool
- Y10T 83/8759 . . With means to connect or disconnect tool and its drive
- Y10T 83/8761 . . . Continuously moving drive means [e.g., "gag"]
- Y10T 83/8762 . . . . Hand actuated connecting means
- Y10T 83/8763 . . Convertible from tool path to another or from implement to machine
- Y10T 83/8765 . . Magnet- or solenoid-actuated tool
- Y10T 83/8766 . . . Tool movement modifies actuating circuit
- Y10T 83/8768 . . . Solenoid core is tool or tool support
- Y10T 83/8769 . . Cutting tool operative in opposite directions of travel
- Y10T 83/8771 . . Motion direction of tool influenced by resistance of work
- Y10T 83/8772 . . One tool edge of tool pair encompasses work [e.g., wire cutter]
- Y10T 83/8773 . . Bevel or miter cut
- Y10T 83/8775 . . With tool tensioning means

|              |  |
|--------------|--|
| Y10T 83/8776 | . . . Constantly urged tool or tool support [e.g., spring biased]              |
| Y10T 83/8778 | . . . . Ledger blade   |
| Y10T 83/8779 | . . . . Oscillating tool urged axially   |
| Y10T 83/8781 | . . . . . And urged about pivotal axis   |
| Y10T 83/8782 | . . . . Stored energy furnishes cutting force                                  |
| Y10T 83/8784 | . . . . . With reset   |
| Y10T 83/8785 | . . . . Through return [noncutting] stroke                                     |
| Y10T 83/8786 | . . . . . Oscillating tool   |
| Y10T 83/8788 | . . . Tool return mechanism separate from tool advance mechanism               |
| Y10T 83/8789 | . . . With simple revolving motion only  |
| Y10T 83/8791 | . . . . Tool mounted on radial face of rotor                                   |
| Y10T 83/8792 | . . . . Variable speed during one revolution [e.g., intermittent]              |
| Y10T 83/8794 | . . . . Revolving tool moves through recess in work holder or cooperating tool |
| Y10T 83/8795 | . . . . . Progressively cutting  |
| Y10T 83/8796 | . . . . Progressively cutting  |
| Y10T 83/8798 | . . . With simple oscillating motion only                                      |
| Y10T 83/8799 | . . . . Plural tool pairs  |
| Y10T 83/8801 | . . . . . Plural tools on single oscillating arm [i.e., tool holder]           |
| Y10T 83/8802 | . . . . And means to move cooperating cutter member                            |
| Y10T 83/8804 | . . . . Tool driver movable relative to tool support                           |
| Y10T 83/8805 | . . . . . Cam or eccentric revolving about fixed axis                          |
| Y10T 83/8807 | . . . . . Gear or ratchet pawl drives toothed tool support                     |
| Y10T 83/8808 | . . . . . Toggle links, one link pivoted to tool support                       |
| Y10T 83/8809 | . . . . . Fixed axis lever   |
| Y10T 83/8811 | . . . . . Adjustable mechanical advantage                                      |
| Y10T 83/8812 | . . . . Cutting edge in radial plane   |
| Y10T 83/8814 | . . . . . Adjustable   |
| Y10T 83/8815 | . . . . . With guide means for the cutting member                              |
| Y10T 83/8817 | . . . . Axially extending cutting edge   |
| Y10T 83/8818 | . . . . . Axially progressing cut  |
| Y10T 83/882  | . . . . . Adjustable   |
| Y10T 83/8821 | . . . With simple rectilinear reciprocating motion only                        |
| Y10T 83/8822 | . . . . Edge-to-edge of sheet or web [e.g., traveling cutter]                  |
| Y10T 83/8824 | . . . . With provision for dynamic balance                                     |
| Y10T 83/8825 | . . . . With lost motion in tool drive   |
| Y10T 83/8827 | . . . . Means to vary force on, or speed of, tool during stroke                |
| Y10T 83/8828 | . . . . Plural tools with same drive means                                     |
| Y10T 83/883  | . . . . . Tools positioned by template   |
| Y10T 83/8831 | . . . . . Plural distinct cutting edges on same support                        |
| Y10T 83/8832 | . . . . . Concentrically mounted   |

|              |   |
|--------------|---|
| Y10T 83/8834 | . . . . . Successively acting   |
| Y10T 83/8835 | . . . And means to move cooperating cutting member                            |
| Y10T 83/8837 | . . . With application of force to opposite ends of tool supporting crosshead |
| Y10T 83/8838 | . . . . By relatively movable fixed axis levers                               |
| Y10T 83/884  | . . . . By connecting rod articulated with tool support                       |
| Y10T 83/8841 | . . . Tool driver movable relative to tool support                            |
| Y10T 83/8843 | . . . . Cam or eccentric revolving about fixed axis                           |
| Y10T 83/8844 | . . . . Gear actuated tool support  |
| Y10T 83/8845 | . . . . Toggle links, one link pivoted to tool support                        |
| Y10T 83/8847 | . . . . Screw actuated tool support   |
| Y10T 83/8848 | . . . . Connecting rod articulated with tool support                          |
| Y10T 83/885  | . . . . Fixed axis lever  |
| Y10T 83/8851 | . . . . . Adjustable mechanical advantage                                     |
| Y10T 83/8853 | . . . . Including details of guide for tool or tool support                   |
| Y10T 83/8854 | . . . Progressively cutting   |
| Y10T 83/8855 | . . . With spaced guide pins [e.g., die set leader pins]                      |
| Y10T 83/8857 | . . . With inclined guides  |
| Y10T 83/8858 | . . . Fluid pressure actuated   |
| Y10T 83/886  | . . . . Utilizing fluid amplifier   |
| Y10T 83/8861 | . . . . Diaphragm   |
| Y10T 83/8863 | . . . . Explosive fluid   |
| Y10T 83/8864 | . . . . Plural cylinders  |
| Y10T 83/8866 | . . . . Offset cutter   |
| Y10T 83/8867 | . . . With means to adjust tool position on tool holder                       |
| Y10T 83/8868 | . . . . Adjustably mounted cooperating tool                                   |
| Y10T 83/887  | . . Parallel draw-cut [e.g., translatory]                                     |
| Y10T 83/8871 | . . . Link suspension   |
| Y10T 83/8873 | . . Straight line motion combined with tilting in plane of stroke             |
| Y10T 83/8874 | . . Uniplanar compound motion   |
| Y10T 83/8876 | . . . Reciprocating plus work approach [e.g., saw type]                       |
| Y10T 83/8877 | . . . With gyratory drive   |
| Y10T 83/8878 | . . Guide   |
| Y10T 83/888  | . . . With nonrigidly positioned member                                       |
| Y10T 83/8881 | . . . With anti-friction means  |
| Y10T 83/8883 | . . . . Roller with peripheral flange or groove                               |
| Y10T 83/8884 | . . . . Disc  |
| Y10T 83/8886 | . . . With means to vary space between opposed members                        |
| Y10T 83/8887 | . . . . By rectilinear movement of member                                     |
| Y10T 83/8889 | . . . With means to adjust position   |
| Y10T 83/889  | . Tool with either work holder or means to hold work supply                   |



|              |   |
|--------------|---|
| Y10T 83/896  | . . Rotatable wound package supply  |
| Y10T 83/902  | . . . Plural supply sources   |
| Y10T 83/909  | . Cutter assemblage or cutter element therefor [e.g., chain saw chain]        |
| Y10T 83/913  | . . With means permitting removal of cutter element                           |
| Y10T 83/917  | . . Having diverse cutting elements   |
| Y10T 83/921  | . . . And noncutting depth gauge  |
| Y10T 83/925  | . . Having noncutting depth gauge   |
| Y10T 83/929  | . Tool or tool with support   |
| Y10T 83/9292 | . . Wire tool   |
| Y10T 83/9295 | . . Work supported tool [e.g., clicker die]                                   |
| Y10T 83/9297 | . . . With product ejection facilitator                                       |
| Y10T 83/93   | . . . With tool manipulating portion  |
| Y10T 83/9302 | . . . With tool positioning abutment  |
| Y10T 83/9304 | . . . To sever article from work and cut within article                       |
| Y10T 83/9307 | . . . With tool contour adjusting means                                       |
| Y10T 83/9309 | . . Anvil   |
| Y10T 83/9312 | . . . Rotatable type  |
| Y10T 83/9314 | . . Pointed perforators   |
| Y10T 83/9317 | . . Endless band or belt type   |
| Y10T 83/9319 | . . Toothed blade or tooth therefor   |
| Y10T 83/9321 | . . . With means to vary tooth position                                       |
| Y10T 83/9324 | . . . With additional cutting means   |
| Y10T 83/9326 | . . . Plural separable sections   |
| Y10T 83/9329 | . . . . Tooth separable from blade  |
| Y10T 83/9331 | . . . . . By independent connecting element                                   |
| Y10T 83/9333 | . . . . . Transversely movable  |
| Y10T 83/9336 | . . . . . Arcuately movable   |
| Y10T 83/9338 | . . . . . . With additional element to prevent movement of connecting element |
| Y10T 83/9341 | . . . . . Rectilinearly movable   |
| Y10T 83/9343 | . . . . . By deformation  |
| Y10T 83/9346 | . . . Uniformly varying teeth or tooth spacing                                |
| Y10T 83/9348 | . . . Undulating tooth arrangement  |
| Y10T 83/935  | . . . Plural tooth groups   |
| Y10T 83/9353 | . . . . Including raker tooth group   |
| Y10T 83/9355 | . . . . Including intermediate raker tooth                                    |
| Y10T 83/9358 | . . . Series of dissimilar teeth  |
| Y10T 83/936  | . . . Series of allochiral teeth  |
| Y10T 83/9362 | . . . Teeth having transversely curved cutting edge                           |
| Y10T 83/9365 | . . . Teeth having cutting edge parallel to blade surface                     |

|              |           |  |
|--------------|-----------|--|
| Y10T 83/9367 | . . .     | Teeth having cutting edge perpendicular to blade surface |
| Y10T 83/937  | . .       | Tool mounted by and between spaced arms                  |
| Y10T 83/9372 | . .       | Rotatable type   |
| Y10T 83/9374 | . . .     | With spacer interposed between shaft-mounted tools       |
| Y10T 83/9377 | . . .     | Mounting of tool about rod-type shaft                    |
| Y10T 83/9379 | . . . .   | At end of shaft  |
| Y10T 83/9382 | . . .     | Punching plus nonpunching tool                           |
| Y10T 83/9384 | . . .     | Notching plus nonnotching tool                           |
| Y10T 83/9387 | . . .     | Punching tool  |
| Y10T 83/9389 | . . . .   | Shear type   |
| Y10T 83/9391 | . . .     | Notching tool  |
| Y10T 83/9394 | . . .     | Helical tool   |
| Y10T 83/9396 | . . .     | Shear type   |
| Y10T 83/9399 | . . . .   | Cutting edge wholly parallel to axis of rotation         |
| Y10T 83/9401 | . . . .   | Cutting edge wholly normal to axis of rotation           |
| Y10T 83/9403 | . . .     | Disc type  |
| Y10T 83/9406 | . . .     | Radially adjustable tool                                 |
| Y10T 83/9408 | . . .     | Spaced cut forming tool                                  |
| Y10T 83/9411 | . .       | Cutting couple type                                      |
| Y10T 83/9413 | . . .     | Spiral type cutter                                       |
| Y10T 83/9416 | . . .     | To punch and cut punched article                         |
| Y10T 83/9418 | . . .     | Punching plus nonpunching tool                           |
| Y10T 83/942  | . . .     | Notching plus nonnotching tool                           |
| Y10T 83/9423 | . . .     | Punching tool  |
| Y10T 83/9425 | . . . .   | Tool pair  |
| Y10T 83/9428 | . . . .   | Shear-type male tool                                     |
| Y10T 83/943  | . . . . . | Multiple punchings                                       |
| Y10T 83/9432 | . . . . . | Plural spaced successively operative shearing portions   |
| Y10T 83/9435 | . . . . . | Progressive cutting                                      |
| Y10T 83/9437 | . . . .   | Shear-type female tool                                   |
| Y10T 83/944  | . . . .   | Multiple punchings                                       |
| Y10T 83/9442 | . . .     | Notching tool  |
| Y10T 83/9444 | . . . .   | Shear type   |
| Y10T 83/9447 | . . .     | Shear type   |
| Y10T 83/9449 | . . .     | Spaced cut forming tool                                  |
| Y10T 83/9452 | . . .     | With tool contour adjusting means                        |
| Y10T 83/9454 | . .       | Reciprocable type  |
| Y10T 83/9457 | . .       | Joint or connection                                      |
| Y10T 83/9459 | . . .     | Magnetic connection                                      |
| Y10T 83/9461 | . . .     | Resiliently biased connection                            |

|              |  |
|--------------|--|
| Y10T 83/9464 | . . . . For rotary tool  |
| Y10T 83/9466 | . . . . Flexible sleevelike tool   |
| Y10T 83/9469 | . . . . Adjustable   |
| Y10T 83/9471 | . . . . . Rectilinearly  |
| Y10T 83/9473 | . . . . For rectilinearly reciprocating tool   |
| Y10T 83/9476 | . . . . Tool is single element with continuous cutting edge [e.g., punch, etc.]                                    |
| Y10T 83/9478 | . . . . Tool is single element reciprocable generally perpendicularly to elongate cutting edge [e.g., shear, etc.] |
| Y10T 83/9481 | . . . . Tool is single element reciprocable along elongate cutting edge [e.g., saw blade, etc.]                    |
| Y10T 83/9483 | . . . . Adjustable   |
| Y10T 83/9486 | . . . . . Rectilinearly  |
| Y10T 83/9488 | . . . . Adjustable   |
| Y10T 83/949  | . . . . . Rectilinearly  |
| Y10T 83/9493 | . . . Stationary cutter  |
| Y10T 83/9495 | . . . Nonparallel cutting edges  |
| Y10T 83/9498 | . . . Parallel cutting edges   |
| Y10T 83/95   | . Machine frame  |
| Y10T 83/96   | . . Guard  |
| Y10T 83/97   | . Miscellaneous  |

**Former US Class 117 Series****Y10T 117/00 Single-crystal, oriented-crystal, and epitaxy growth processes; non-coating apparatus therefor**

|               |   |
|---------------|---|
| Y10T 117/10   | . Apparatus   |
| Y10T 117/1004 | . . with means for measuring, testing, or sensing   |
| Y10T 117/1008 | . . . with responsive control means   |
| Y10T 117/1012 | . . . with a window or port for visual observation or examination   |
| Y10T 117/1016 | . . with means for treating single-crystal [e.g., heat treating]  |
| Y10T 117/102  | . . for forming a platelet shape or a small diameter, elongate, generally cylindrical shape [e.g., whisker, fiber, needle, filament]                |
| Y10T 117/1024 | . . for crystallization from liquid or supercritical state  |
| Y10T 117/1028 | . . . Crucibleless apparatus having means providing movement of discrete droplets or solid particles to thin-film precursor [e.g., Verneuil method] |
| Y10T 117/1032 | . . . Seed pulling  |
| Y10T 117/1036 | . . . . including solid member shaping means other than seed or product [e.g., EDFA die]  |
| Y10T 117/104  | . . . . . Means for forming a hollow structure [e.g., tube, polygon]  |
| Y10T 117/1044 | . . . . . including means forming a flat shape [e.g., ribbon]   |
| Y10T 117/1048 | . . . . . Pulling includes a horizontal component   |
| Y10T 117/1052 | . . . . including a sectioned crucible [e.g., double crucible, baffle]  |

|               |         |  |
|---------------|---------|--|
| Y10T 117/1056 | . . . . | including details of precursor replenishment   |
| Y10T 117/106  | . . . . | including sealing means details  |
| Y10T 117/1064 | . . . . | including a fully-sealed or vacuum-maintained crystallization chamber [e.g., ampoule]                                |
| Y10T 117/1068 | . . . . | including heating or cooling details [e.g., shield configuration]  |
| Y10T 117/1072 | . . . . | including details of means providing product movement [e.g., shaft guides, servo means]                              |
| Y10T 117/1076 | . . .   | having means for producing a moving solid-liquid-solid zone  |
| Y10T 117/108  | . . . . | Including a solid member other than seed or product contacting the liquid [e.g., crucible, immersed heating element] |
| Y10T 117/1084 | . . . . | having details of a stabilizing feature  |
| Y10T 117/1088 | . . . . | including heating or cooling details   |
| Y10T 117/1092 | . . .   | Shape defined by a solid member other than seed or product [e.g., Bridgman-Stockbarger]                              |
| Y10T 117/1096 | . . .   | including pressurized crystallization means [e.g., hydrothermal]   |

**Former US Class 137 series**

|                    |  |
|--------------------|--|
| <b>Y10T 137/00</b> | <b>Fluid handling</b>  |
| Y10T 137/0318      | . Processes  |
| Y10T 137/0324      | . . With control of flow by a condition or characteristic of a fluid   |
| Y10T 137/0329      | . . . Mixing of plural fluids of diverse characteristics or conditions |
| Y10T 137/0335      | . . . . Controlled by consistency of mixture                           |
| Y10T 137/034       | . . . . Controlled by conductivity of mixture                          |
| Y10T 137/0346      | . . . . Controlled by heat of combustion of mixture                    |
| Y10T 137/0352      | . . . . Controlled by pressure   |
| Y10T 137/0357      | . . . For producing uniform flow                                       |
| Y10T 137/0363      | . . . For producing proportionate flow                                 |
| Y10T 137/0368      | . . . By speed of fluid  |
| Y10T 137/0374      | . . . For regulating boiler feed water level                           |
| Y10T 137/0379      | . . . By fluid pressure  |
| Y10T 137/0385      | . . Carbonated beverage handling processes                             |
| Y10T 137/0391      | . . Affecting flow by the addition of material or energy               |
| Y10T 137/0396      | . . Involving pressure control   |
| Y10T 137/0402      | . . Cleaning, repairing, or assembling                                 |
| Y10T 137/0407      | . . . Repairing or assembling hydrant [e.g., fireplug, etc.]           |
| Y10T 137/0413      | . . . Gas or water meter repairing or assembling                       |
| Y10T 137/0419      | . . . Fluid cleaning or flushing                                       |
| Y10T 137/0424      | . . . . Liquid cleaning or flushing                                    |
| Y10T 137/043       | . . . . . Valve or valve seat cleaning                                 |
| Y10T 137/0435      | . . . Mechanical cleaning [e.g., pig, etc.]                            |

|               |           |   |
|---------------|-----------|---|
| Y10T 137/0441 | . . .     | Repairing, securing, replacing, or servicing pipe joint, valve, or tank         |
| Y10T 137/0447 | . . . .   | Including joint or coupling   |
| Y10T 137/0452 | . . . .   | Detecting or repairing leak   |
| Y10T 137/0458 | . . . .   | Tapping pipe, keg, or tank  |
| Y10T 137/0463 | . . . . . | Particular aperture forming means   |
| Y10T 137/0469 | . . . . . | Cutter or cutting tool  |
| Y10T 137/0475 | . . . . . | Having deformable or inflatable means   |
| Y10T 137/048  | . . . .   | With content loading or unloading [e.g., dispensing, discharge assistant, etc.] |
| Y10T 137/0486 | . . . .   | Specific valve or valve element mounting or repairing                           |
| Y10T 137/0491 | . . .     | Valve or valve element assembling, disassembling, or replacing                  |
| Y10T 137/0497 | . . . .   | Fluid actuated or retarded  |
| Y10T 137/0502 | . . . .   | Multi way valve   |
| Y10T 137/0508 | . . . .   | Ball valve or rotary ball valve   |
| Y10T 137/0514 | . . . .   | Gate valve  |
| Y10T 137/0519 | . . . .   | Plug valve  |
| Y10T 137/0525 | . . . .   | Butterfly valve   |
| Y10T 137/053  | . . . .   | Float valve   |
| Y10T 137/0536 | . .       | Highspeed fluid intake means [e.g., jet engine intake]                          |
| Y10T 137/0645 | . .       | With condition responsive control means   |
| Y10T 137/0753 | . .       | Control by change of position or inertia of system                              |
| Y10T 137/0777 | . .       | With second control   |
| Y10T 137/0801 | . .       | Position relative body of water [e.g., marine governors]                        |
| Y10T 137/0826 | . . .     | Float controlled  |
| Y10T 137/085  | . . .     | Pressure or head controlled   |
| Y10T 137/0874 | . .       | Vent opening or closing on tipping container                                    |
| Y10T 137/0898 | . .       | By shifting of liquid level   |
| Y10T 137/0923 | . .       | By pendulum or swinging member  |
| Y10T 137/0947 | . . .     | With servo connection to valve  |
| Y10T 137/0971 | . .       | Speed responsive valve control  |
| Y10T 137/0989 | . .       | Acceleration responsive valve control   |
| Y10T 137/1007 | . .       | With manual valve control   |
| Y10T 137/1026 | . .       | Speed change and excess speed valve control                                     |
| Y10T 137/1044 | . .       | With other condition responsive valve control                                   |
| Y10T 137/1062 | . . .     | Governor drive failure responsive   |
| Y10T 137/108  | . .       | Centrifugal mass type [exclusive of liquid]                                     |
| Y10T 137/1098 | . . .     | With multiple valves  |
| Y10T 137/1116 | . . .     | Periodically actuated valve   |
| Y10T 137/1135 | . . .     | Rotating valve and rotating governor  |
| Y10T 137/1153 | . . .     | Excess speed responsive   |

|               |   |
|---------------|---|
| Y10T 137/1171 | . . . With fluid servo-motor                                    |
| Y10T 137/1189 | . Freeze condition responsive safety systems                    |
| Y10T 137/1244 | . . With freeze waste   |
| Y10T 137/1298 | . . Stop and waste  |
| Y10T 137/1353 | . . Low temperature responsive drains                           |
| Y10T 137/1407 | . Combustion failure responsive fuel safety cut-off for burners |
| Y10T 137/1516 | . . Thermo-electric   |
| Y10T 137/1624 | . Destructible or deformable element controlled                 |
| Y10T 137/1632 | . . Destructible element  |
| Y10T 137/1639 | . . . Combined destructible and fusible element                 |
| Y10T 137/1647 | . . . Explosive actuation                                       |
| Y10T 137/1654 | . . . Separable valve coupling or conduit                       |
| Y10T 137/1662 | . . . . Tensile or sheer pin or bolt                            |
| Y10T 137/1669 | . . . Tensile or sheer pin or bolt                              |
| Y10T 137/1677 | . . . . Pressure causes pin or bolt to destruct                 |
| Y10T 137/1684 | . . . With alarm or indicator                                   |
| Y10T 137/1692 | . . . Rupture disc  |
| Y10T 137/1699 | . . . . Means for holding entire disc after rupture             |
| Y10T 137/1707 | . . . . Disc burst after destruction of additional element      |
| Y10T 137/1714 | . . . . Direct pressure causes disc to burst                    |
| Y10T 137/1722 | . . . . . Two-way rupture disc                                  |
| Y10T 137/1729 | . . . . . Dome shape  |
| Y10T 137/1737 | . . . . . Reverse buckling                                      |
| Y10T 137/1744 | . . . . Specific weakening point                                |
| Y10T 137/1752 | . . . . Integral disc assembly                                  |
| Y10T 137/1759 | . . . . Knife or cutter causes disc to break                    |
| Y10T 137/1767 | . . . . . Movable knife or cutter                               |
| Y10T 137/1774 | . . . With counterbalancing element                             |
| Y10T 137/1782 | . . . Frangible element returns pressure responsive valve       |
| Y10T 137/1789 | . . . Having pressure responsive valve                          |
| Y10T 137/1797 | . . Heat destructible or fusible                                |
| Y10T 137/1804 | . . . With second sensing means                                 |
| Y10T 137/1812 | . . . In fluid flow path  |
| Y10T 137/1819 | . . . Safety cut-off  |
| Y10T 137/1827 | . . . . With heater for destructible or fusible element         |
| Y10T 137/1834 | . . . . With external closing means                             |
| Y10T 137/1842 | . Ambient condition change responsive                           |
| Y10T 137/1866 | . . For controlling soil irrigation                             |
| Y10T 137/189  | . . . Soil moisture sensing                                     |
| Y10T 137/1915 | . . Burner gas cutoff   |

|               |   |
|---------------|---|
| Y10T 137/1939 | . . Atmospheric   |
| Y10T 137/1963 | . . . Temperature   |
| Y10T 137/1987 | . . . . With additional diverse control   |
| Y10T 137/2012 | . . . Pressure  |
| Y10T 137/2036 | . . Underwater  |
| Y10T 137/206  | . Flow affected by fluid contact, energy field or coanda effect [e.g., pure fluid device or system] |
| Y10T 137/2065 | . . Responsive to condition external of system  |
| Y10T 137/2071 | . . . And causing change or correction of sensed condition  |
| Y10T 137/2076 | . . Utilizing diverse fluids  |
| Y10T 137/2082 | . . Utilizing particular fluid  |
| Y10T 137/2087 | . . Means to cause rotational flow of fluid [e.g., vortex generator]                                |
| Y10T 137/2093 | . . . Plural vortex generators  |
| Y10T 137/2098 | . . . Vortex generator as control for system  |
| Y10T 137/2104 | . . . Vortex generator in interaction chamber of device   |
| Y10T 137/2109 | . . . By tangential input to axial output [e.g., vortex amplifier]                                  |
| Y10T 137/2115 | . . . . With means to vary input or output of device  |
| Y10T 137/212  | . . System comprising plural fluidic devices or stages  |
| Y10T 137/2125 | . . . Plural power inputs [e.g., parallel inputs]   |
| Y10T 137/2131 | . . . . Variable or different-value power inputs  |
| Y10T 137/2136 | . . . . . Pulsating power input and continuous-flow power input                                     |
| Y10T 137/2142 | . . . . With variable or selectable source of control-input signal                                  |
| Y10T 137/2147 | . . . . To cascaded plural devices  |
| Y10T 137/2153 | . . . . . With feedback passage[s] between devices of cascade                                       |
| Y10T 137/2158 | . . . . . With pulsed control-input signal  |
| Y10T 137/2164 | . . Plural power inputs to single device  |
| Y10T 137/2169 | . . . Intersecting at interaction region [e.g., comparator]   |
| Y10T 137/2174 | . . . . Co-lineal, oppositely-directed power inputs [e.g., impact modulator]                        |
| Y10T 137/218  | . . Means to regulate or vary operation of device   |
| Y10T 137/2185 | . . . To vary frequency of pulses or oscillations   |
| Y10T 137/2191 | . . . By non-fluid energy field affecting input [e.g., transducer]                                  |
| Y10T 137/2196 | . . . . Acoustical or thermal energy  |
| Y10T 137/2202 | . . . By movable element  |
| Y10T 137/2207 | . . . . Operating at timed intervals [e.g., to produce pulses]                                      |
| Y10T 137/2213 | . . . . Electrically-actuated element [e.g., electro-mechanical transducer]                         |
| Y10T 137/2218 | . . . . Means [e.g., valve] in control input  |
| Y10T 137/2224 | . . Structure of body of device   |
| Y10T 137/2229 | . . Device including passages having V over T configuration   |
| Y10T 137/2234 | . . . And feedback passage[s] or path[s]  |
| Y10T 137/224  | . . . With particular characteristics of control input  |

- Y10T 137/2245 . . . . Multiple control-input passages
- Y10T 137/2251 . . . . And multiple or joined power-outlet passages
- Y10T 137/2256 . . . . And enlarged interaction chamber
- Y10T 137/2262 . . . . And vent passage[s]
- Y10T 137/2267 . . . Device including passages having V over gamma configuration
- Y10T 137/2273 . . . Device including linearly-aligned power stream emitter and power stream collector
- Y10T 137/2278 . . Pressure modulating relays or followers
- Y10T 137/2322 . . . Jet control type
- Y10T 137/2365 . . . Plural series units
- Y10T 137/2409 . . . With counter-balancing pressure feedback to the modulating device
- Y10T 137/2452 . . . . With counter-counter balancing pressure feedback
- Y10T 137/2496 . . Self-proportioning or correlating systems
- Y10T 137/2499 . . . Mixture condition maintaining or sensing
- Y10T 137/2501 . . . . Dividing and recombining flow
- Y10T 137/2504 . . . . By specific gravity
- Y10T 137/2506 . . . . By viscosity or consistency
- Y10T 137/2509 . . . . By optical or chemical property
- Y10T 137/2511 . . . Fuel controlled by boiler or water system condition
- Y10T 137/2514 . . . Self-proportioning flow systems
- Y10T 137/2516 . . . . Interconnected flow displacement elements
- Y10T 137/2519 . . . . . Movable trap chamber
- Y10T 137/2521 . . . . Flow comparison or differential response
- Y10T 137/2524 . . . . . Flow dividers [e.g., reversely acting controls]
- Y10T 137/2526 . . . . . Main line flow displaces or entrains material from reservoir
- Y10T 137/2529 . . . . . With electrical controller
- Y10T 137/2531 . . . . Flow displacement element actuates electrical controller
- Y10T 137/2534 . . . . Liquid level response
- Y10T 137/2536 . . . . . Float controlled weir or valve
- Y10T 137/2539 . . . . . Swinging outlet pipe controller
- Y10T 137/2541 . . . . With measuring type discharge assistant
- Y10T 137/2544 . . . Supply and exhaust type
- Y10T 137/2546 . . . . Vacuum or suction pulsator type [e.g., milking machine]
- Y10T 137/2549 . . . . . With trip linkage or snap action
- Y10T 137/2552 . . . . . With pulsation responsive pilot valve
- Y10T 137/2554 . . . . Reversing or 4-way valve systems
- Y10T 137/2557 . . . . Waste responsive to flow stoppage
- Y10T 137/2559 . . . Self-controlled branched flow systems
- Y10T 137/2562 . . . . Dividing and recombining
- Y10T 137/2564 . . . . Plural inflows



|               |           |   |
|---------------|-----------|---|
| Y10T 137/2567 | . . . .   | Alternate or successive inflows   |
| Y10T 137/2569 | . . . . . | Control by depletion of source  |
| Y10T 137/2572 | . . . .   | One inflow supplements another  |
| Y10T 137/2574 | . . .     | Bypass or relief controlled by main line fluid condition                      |
| Y10T 137/2577 | . . . .   | Liquid level responsive   |
| Y10T 137/2579 | . . . .   | Flow rate responsive  |
| Y10T 137/2582 | . . . . . | Including controlling main line flow  |
| Y10T 137/2584 | . . . . . | Relief or bypass closes as main opens   |
| Y10T 137/2587 | . . . . . | Bypass or relief valve biased open  |
| Y10T 137/2589 | . . . . . | Pilot valve operated  |
| Y10T 137/2592 | . . . . . | Carried choke   |
| Y10T 137/2594 | . . . . . | Choke   |
| Y10T 137/2597 | . . . . . | Variable choke resistance   |
| Y10T 137/2599 | . . . . . | Venturi   |
| Y10T 137/2602 | . . . . . | Flapper   |
| Y10T 137/2605 | . . . . . | Pressure responsive   |
| Y10T 137/2607 | . . . . . | With pressure reducing inlet valve  |
| Y10T 137/261  | . . . . . | Relief port through common sensing means                                      |
| Y10T 137/2612 | . . . . . | Common sensor for both bypass or relief valve and other branch valve          |
| Y10T 137/2615 | . . . . . | Bypass or relief valve opens as other branch valve closes                     |
| Y10T 137/2617 | . . . . . | Bypass or relief valve biased open  |
| Y10T 137/262  | . . . . . | Increasing pressure progressively closes then reopens by-pass or relief valve |
| Y10T 137/2622 | . . . . . | Bypass or relief valve responsive to pressure downstream of outlet valve      |
| Y10T 137/2625 | . . . . . | Pilot valve   |
| Y10T 137/2627 | . . . . . | Outlet valve carried by bypass or relief valve                                |
| Y10T 137/263  | . . . . . | Plural sensors for single bypass or relief valve                              |
| Y10T 137/2632 | . . . . . | Sensors interconnected by timing or restrictive orifice                       |
| Y10T 137/2635 | . . . . . | Pilot valve operated  |
| Y10T 137/2637 | . . . . . | Mechanical movement between sensor and valve                                  |
| Y10T 137/264  | . . . . . | Electrical control  |
| Y10T 137/2642 | . . . . . | Sensor rigid with valve   |
| Y10T 137/2645 | . . . . . | Flexible sensor   |
| Y10T 137/2647 | . . . . . | Pressure responsive outlet valve  |
| Y10T 137/265  | . . .     | Plural outflows   |
| Y10T 137/2652 | . . . .   | Single actuator operates plural outlets simultaneously                        |
| Y10T 137/2655 | . . . .   | Biased open isolation valve   |
| Y10T 137/2657 | . . . .   | Flow rate responsive  |
| Y10T 137/266  | . . . . . | Primer valve  |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/2663 | . . . . . | Pressure responsive  |
| Y10T 137/2665 | . . . . . | With external control for correlating valve [e.g., manual]                         |
| Y10T 137/2668 | . . . . . | Alternately or successively substituted outflow                                    |
| Y10T 137/267  | . . . . . | Control by filling auxiliary gravitating or float operating tank                   |
| Y10T 137/2673 | . . . . . | Control by filling outlet tank or receiver   |
| Y10T 137/2675 | . . . . . | Float controlled   |
| Y10T 137/2678 | . . . . . | Four port reversing valve  |
| Y10T 137/268  | . . . . . | Responsive to pressure or flow interruption  |
| Y10T 137/2683 | . . . . . | Plural outlets control with automatic reset  |
| Y10T 137/2685 | . . . . . | Manually set to a single outflow position  |
| Y10T 137/2688 | . . . . . | Flow rate responsive   |
| Y10T 137/269  | . . . . . | Flow sensing turbine   |
| Y10T 137/2693 | . . . . . | Pressure responsive  |
| Y10T 137/2695 | . . . . . | Responsive to outlet pressure  |
| Y10T 137/2698 | . . . . . | Electrical control   |
| Y10T 137/27   | . . . . . | Liquid level responsive  |
| Y10T 137/2703 | . . . . . | Flow rate responsive   |
| Y10T 137/2705 | . . . . . | Pressure differential  |
| Y10T 137/2708 | . . . . . | Plural sensors   |
| Y10T 137/271  | . . . . . | For single valve   |
| Y10T 137/2713 | . . . . . | Siphons  |
| Y10T 137/272  | . . . . . | Plural   |
| Y10T 137/2727 | . . . . . | Tank truck mounted   |
| Y10T 137/2733 | . . . . . | Sequentially discharging in parallel   |
| Y10T 137/274  | . . . . . | From plural tanks  |
| Y10T 137/2747 | . . . . . | Main siphon with auxiliary starting, stopping or resetting siphon                  |
| Y10T 137/2754 | . . . . . | Sinking or bucket-type float operated main siphon, float emptying auxiliary siphon |
| Y10T 137/2761 | . . . . . | With discharge-controlling receiver  |
| Y10T 137/2768 | . . . . . | With float   |
| Y10T 137/2774 | . . . . . | Periodic or accumulation responsive discharge                                      |
| Y10T 137/2781 | . . . . . | With manual control  |
| Y10T 137/2788 | . . . . . | Control by filling auxiliary tank  |
| Y10T 137/2795 | . . . . . | Float-operated inlet to siphon   |
| Y10T 137/2802 | . . . . . | Release of trapped air   |
| Y10T 137/2808 | . . . . . | Through float-operated vent  |
| Y10T 137/2815 | . . . . . | Through liquid trap seal   |
| Y10T 137/2822 | . . . . . | Auxiliary liquid trap seal   |
| Y10T 137/2829 | . . . . . | With strainer, filter, separator or sediment trap                                  |
| Y10T 137/2836 | . . . . . | With recorder, register, signal, indicator or inspection window                    |

|               |  |
|---------------|--|
| Y10T 137/2842 | . . With flow starting, stopping or maintaining means                              |
| Y10T 137/2849 | . . . Siphon venting or breaking   |
| Y10T 137/2856 | . . . With leakage or entrained air removal  |
| Y10T 137/2863 | . . . Pressure applied to liquid in supply chamber                                 |
| Y10T 137/287  | . . . Plunge or immersion starting   |
| Y10T 137/2877 | . . . Pump or liquid displacement device for flow passage                          |
| Y10T 137/2883 | . . . . Piston   |
| Y10T 137/289  | . . . . . Co-axial within flow passage   |
| Y10T 137/2897 | . . . . Collapsible bulb   |
| Y10T 137/2904 | . . . Siphon inlet movable to and from seat  |
| Y10T 137/2911 | . . . With valve or closure in-flow passage  |
| Y10T 137/2917 | . . With means for mounting and/or positioning relative to siphon chamber          |
| Y10T 137/2924 | . . Elements   |
| Y10T 137/2931 | . Diverse fluid containing pressure systems  |
| Y10T 137/2934 | . . Gas lift valves for wells  |
| Y10T 137/2937 | . . Gas pressure discharge of liquids feed traps [e.g., to boiler]                 |
| Y10T 137/294  | . . . Gas pressure controlled by amount of liquids in boiler or discharge receiver |
| Y10T 137/2943 | . . . . Pressure connection at liquid level in boiler or discharge receiver        |
| Y10T 137/2947 | . . . Gas pressure controlled by amount of liquid in trap                          |
| Y10T 137/295  | . . . . Plural trap chambers   |
| Y10T 137/2953 | . . . . . Gravitating  |
| Y10T 137/2956 | . . . . Gravitating vessel   |
| Y10T 137/2959 | . . . . . Sinking or bucket type float   |
| Y10T 137/2962 | . . . . . Pivoted vessel with fluid passage through pivot                          |
| Y10T 137/2965 | . . . . Float responsive   |
| Y10T 137/2968 | . . . . . Liquid control valve positively actuated                                 |
| Y10T 137/2971 | . . . . . Gas condensing type  |
| Y10T 137/2975 | . . . . . Gas inlet and outlet valves unitary                                      |
| Y10T 137/2978 | . . . Gas pressure controlled by manual or cyclic means                            |
| Y10T 137/2981 | . . . . Movable trap chamber   |
| Y10T 137/2984 | . . Foam control in gas charged liquids  |
| Y10T 137/2987 | . . . Level or pressure responsive   |
| Y10T 137/299  | . . . Separate handling of foam  |
| Y10T 137/2993 | . . . With conditioning trap or chamber  |
| Y10T 137/2996 | . . . . Recarbonation  |
| Y10T 137/30   | . . . . With trap or chamber by-pass   |
| Y10T 137/3003 | . . Fluid separating traps or vents  |
| Y10T 137/3006 | . . . Liquids separated from liquid  |
| Y10T 137/3009 | . . . Plural discriminating outlets for diverse fluids                             |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/3012 | . . . .   | Common actuator for control valves                     |
| Y10T 137/3015 | . . . .   | Choke or restricted passage gas bleed                  |
| Y10T 137/3018 | . . . . . | From above liquid level                                |
| Y10T 137/3021 | . . . .   | Discriminating outlet for liquid                       |
| Y10T 137/3024 | . . . .   | With alternately operated inlet and outlet valves      |
| Y10T 137/3028 | . . . .   | With non-discriminating gas vent or liquid discharge   |
| Y10T 137/3031 | . . . . . | Abnormal pressure responsive liquid blow-off or drain  |
| Y10T 137/3034 | . . . . . | Manual control   |
| Y10T 137/3037 | . . . .   | With auxiliary inlet or by-pass valve                  |
| Y10T 137/304  | . . . .   | With fluid responsive valve                            |
| Y10T 137/3043 | . . . . . | Successively opened valves                             |
| Y10T 137/3046 | . . . . . | Gas collecting float [e.g., inverted bucket]           |
| Y10T 137/3049 | . . . . . | Downstream from valve                                  |
| Y10T 137/3052 | . . . . . | Level responsive                                       |
| Y10T 137/3056 | . . . . . | Weight or pressure                                     |
| Y10T 137/3059 | . . . . . | Gravitating vessel                                     |
| Y10T 137/3062 | . . . . . | Sinking or bucket type float                           |
| Y10T 137/3065 | . . . . . | Servo-control  |
| Y10T 137/3068 | . . . . . | Float  |
| Y10T 137/3071 | . . . . . | With main line gas outlet from trap chamber            |
| Y10T 137/3074 | . . . . . | With outlet extending above liquid in trap             |
| Y10T 137/3077 | . . . . . | Servo-control  |
| Y10T 137/308  | . . . . . | With pressure balanced outlet valve                    |
| Y10T 137/3084 | . . . .   | Discriminating outlet for gas                          |
| Y10T 137/3087 | . . . .   | With reverse flow stop or pressure regulating valve    |
| Y10T 137/309  | . . . .   | Fluid sensing valve                                    |
| Y10T 137/3093 | . . . . . | With vaporized liquid stop                             |
| Y10T 137/3096 | . . . . . | With separate return for condensate                    |
| Y10T 137/3099 | . . . . . | Float responsive                                       |
| Y10T 137/3102 | . . . .   | With liquid emptying means                             |
| Y10T 137/3105 | . . . .   | Self-emptying  |
| Y10T 137/3109 | . . . .   | Liquid filling by evacuating container                 |
| Y10T 137/3112 | . . . .   | Main line flow displaces additive from shunt reservoir |
| Y10T 137/3115 | . . . .   | Gas pressure storage over or displacement of liquid    |
| Y10T 137/3118 | . . . .   | Surge suppression                                      |
| Y10T 137/3121 | . . . .   | With return of liquid to supply                        |
| Y10T 137/3124 | . . . .   | Plural units   |
| Y10T 137/3127 | . . . .   | With gas maintenance or application                    |
| Y10T 137/313  | . . . .   | Gas carried by or evolved from liquid                  |
| Y10T 137/3133 | . . . . . | Gas injectors  |

- Y10T 137/3137 . . . . Gas injected by liquid pressure or flow
- Y10T 137/314 . . . . Unitary mounting for gas pressure inlet and liquid outlet
- Y10T 137/3143 . . . With liquid level responsive gas vent or whistle
- Y10T 137/3146 . . . . Combined high and low level responsive
- Y10T 137/3149 . Back flow prevention by vacuum breaking [e.g., anti-siphon devices]
- Y10T 137/3185 . . Air vent in liquid flow line
- Y10T 137/3222 . . . With liquid seal in liquid flow line
- Y10T 137/3258 . . . . Automatic valve in vent line
- Y10T 137/3294 . . . Valved
- Y10T 137/3331 . . . . With co-acting valve in liquid flow path
- Y10T 137/3367 . Larner-Johnson type valves; i.e., telescoping internal valve in expanded flow line section
- Y10T 137/3421 . . Line condition change responsive
- Y10T 137/3476 . . Internal servo-motor with internal pilot valve
- Y10T 137/353 . . . Pilot controlled passage in nose or needle
- Y10T 137/3584 . Inflatable article [e.g., tire filling chuck and/or stem]
- Y10T 137/36 . . With pressure-responsive pressure-control means
- Y10T 137/3615 . . . Pulsating
- Y10T 137/3631 . . . Diaphragm, bellows or expansible tube
- Y10T 137/3646 . . . Co-axial inflation and relief valves
- Y10T 137/3662 . . With gauge or indicator
- Y10T 137/3677 . . . With deflating means
- Y10T 137/3693 . . . Selectively connected
- Y10T 137/3709 . . Stem attached relief valve
- Y10T 137/3724 . . With coupling means
- Y10T 137/374 . . With cap
- Y10T 137/3755 . . . Valve actuating, assembling or locking means on cap
- Y10T 137/3771 . . . . Valve manually seated
- Y10T 137/3786 . . Removable valve head and seat unit [valve insides]
- Y10T 137/3802 . With vehicle guide or support, e.g., service station
- Y10T 137/402 . Distribution systems involving geographic features
- Y10T 137/4238 . With cleaner, lubrication added to fluid or liquid sealing at valve interface
- Y10T 137/4245 . . Cleaning or steam sterilizing
- Y10T 137/4252 . . . Reverse fluid flow
- Y10T 137/4259 . . . With separate material addition
- Y10T 137/4266 . . . Steam sterilizing
- Y10T 137/4273 . . . Mechanical cleaning
- Y10T 137/428 . . . . Valve grinding motion of valve on seat
- Y10T 137/4287 . . . . . Concentric stem
- Y10T 137/4294 . . . . . Spring pressed

|               |           |   |
|---------------|-----------|---|
| Y10T 137/4301 | . . . . . | Lost motion permits grinding                            |
| Y10T 137/4308 | . . . . . | With swivel-preventing means                            |
| Y10T 137/4315 | . . . . . | Nut releasable from body and/or stem                    |
| Y10T 137/4322 | . . . . . | With independent grinding actuator                      |
| Y10T 137/4329 | . . . . . | Separable   |
| Y10T 137/4336 | . . . . . | Cleaning member reciprocates in passage                 |
| Y10T 137/4343 | . . . . . | By-pass cleaning  |
| Y10T 137/4351 | . . . . . | Independent actuation                                   |
| Y10T 137/4358 | . . . . . | Liquid supplied at valve interface                      |
| Y10T 137/4365 | . . . . . | Plural feed   |
| Y10T 137/4372 | . . . . . | Line pressure feed                                      |
| Y10T 137/4379 | . . . . . | Feed by or with actuation                               |
| Y10T 137/4386 | . . . . . | Loss control  |
| Y10T 137/4393 | . . . . . | Screw feed  |
| Y10T 137/44   | . . . . . | With check valve  |
| Y10T 137/4407 | . . . . . | Excess relief   |
| Y10T 137/4414 | . . . . . | Jacking   |
| Y10T 137/4421 | . . . . . | Jacking   |
| Y10T 137/4428 | . . . . . | Seating   |
| Y10T 137/4435 | . . . . . | Spring biased piston feed                               |
| Y10T 137/4442 | . . . . . | External pressure                                       |
| Y10T 137/4449 | . . . . . | Gravity or capillary feed                               |
| Y10T 137/4456 | . . . . . | With liquid valves or liquid trap seals                 |
| Y10T 137/4463 | . . . . . | Liquid seal in liquid flow line; flow liquid forms seal |
| Y10T 137/4471 | . . . . . | Valves  |
| Y10T 137/4478 | . . . . . | Line condition change responsive                        |
| Y10T 137/4486 | . . . . . | Plural valves or valve seats                            |
| Y10T 137/4493 | . . . . . | Pivoted valve   |
| Y10T 137/4501 | . . . . . | Ball valve  |
| Y10T 137/4508 | . . . . . | Seats vertically up                                     |
| Y10T 137/4516 | . . . . . | Seal replenishers                                       |
| Y10T 137/4523 | . . . . . | Plural inlet  |
| Y10T 137/4531 | . . . . . | Divided and recombined passages                         |
| Y10T 137/4538 | . . . . . | Tangential inlet flow                                   |
| Y10T 137/4546 | . . . . . | Downward partition encircles projecting outlet          |
| Y10T 137/4553 | . . . . . | Submerged inlet pipe end                                |
| Y10T 137/4561 | . . . . . | Hinged seal bowl  |
| Y10T 137/4568 | . . . . . | Distinct seal bowl in flow line connected casing        |
| Y10T 137/4576 | . . . . . | U-seals   |
| Y10T 137/4583 | . . . . . | Topside access beneath cover plate closed floor opening |

|               |   |
|---------------|---|
| Y10T 137/4591 | . . . . Enlarged upflow leg   |
| Y10T 137/4598 | . . . . . Topside access opening  |
| Y10T 137/4606 | . . . . Even diameter legs  |
| Y10T 137/4613 | . . . . . Access opening  |
| Y10T 137/4621 | . . Seal for relatively movable valving parts   |
| Y10T 137/4628 | . . . Horizontally moving valve   |
| Y10T 137/4636 | . . . . Rotary  |
| Y10T 137/4643 | . . Liquid valves   |
| Y10T 137/4651 | . . . Branched passage for sealing liquid   |
| Y10T 137/4658 | . . . With auxiliary means for varying liquid level                                   |
| Y10T 137/4666 | . . . With baffle   |
| Y10T 137/4673 | . Plural tanks or compartments with parallel flow                                     |
| Y10T 137/469  | . . Sequentially filled and emptied [e.g., holding type]                              |
| Y10T 137/4707 | . . . With relative rotation of tank group and filling head                           |
| Y10T 137/4723 | . . . . With rotary filling and emptying head   |
| Y10T 137/474  | . . With housings, supports or stacking arrangements                                  |
| Y10T 137/4757 | . . Battery or electrolytic cell replenishment  |
| Y10T 137/4774 | . . . Barometric supply   |
| Y10T 137/479  | . . Flow dividing compartments  |
| Y10T 137/4807 | . . Tank type manifold [i.e., one tank supplies or receives from at least two others] |
| Y10T 137/4824 | . . Tank within tank  |
| Y10T 137/4841 | . . With cross connecting passage   |
| Y10T 137/4857 | . . With manifold or grouped outlets  |
| Y10T 137/4874 | . . . Tank truck type   |
| Y10T 137/4891 | . With holder for solid, flaky or pulverized material to be dissolved or entrained    |
| Y10T 137/5109 | . Convertible   |
| Y10T 137/5153 | . . Reversible check  |
| Y10T 137/5196 | . . Unit orientable in a single location between plural positions                     |
| Y10T 137/524  | . . . Reversible stop and vent or waste   |
| Y10T 137/5283 | . . Units interchangeable between alternate locations                                 |
| Y10T 137/5327 | . Hydrant type  |
| Y10T 137/5333 | . . Water crane type  |
| Y10T 137/5339 | . . . Spout operated valve  |
| Y10T 137/5345 | . . . Rotating riser  |
| Y10T 137/535  | . . . . Spout articulated to riser  |
| Y10T 137/5356 | . . . . Vertically movable riser  |
| Y10T 137/5362 | . . . Extensible spout  |
| Y10T 137/5368 | . . . Spout articulated to riser  |
| Y10T 137/5374 | . . Plural riser  |

- Y10T 137/538 . . Expansible chamber operated by valve actuator for draining riser
- Y10T 137/5386 . . With pump or ejector
- Y10T 137/5392 . . Removable valve and valve seat
- Y10T 137/5397 . . . With extension to facilitate removal
- Y10T 137/5403 . . Removable valve with supplemental check valve
- Y10T 137/5409 . . Movable riser actuated valve
- Y10T 137/5415 . . . Reciprocating riser
- Y10T 137/5421 . . . . Piston type valve
- Y10T 137/5427 . . Balanced valve
- Y10T 137/5433 . . Valve actuator extends laterally from bottom of riser
- Y10T 137/5438 . . Valve actuator outside riser
- Y10T 137/5444 . . . Lever actuator
- Y10T 137/545 . . . With casing, flush with ground or pavement surface
- Y10T 137/5456 . . With casing
- Y10T 137/5462 . . . Flush with ground or pavement surface
- Y10T 137/5468 . . . Cap, cover or hood
- Y10T 137/5474 . . . With heater
- Y10T 137/5479 . . With actuator lubricating means
- Y10T 137/5485 . . With valve at outlet
- Y10T 137/5491 . . With supplemental valve
- Y10T 137/5497 . . Protection against freezing
- Y10T 137/5503 . . . Stop and waste
- Y10T 137/5509 . . . . With disabling means
- Y10T 137/5515 . . . . Separate relatively movable valves with single actuator
- Y10T 137/5521 . . . . . Unidirectional abutting connection between main valve or actuator and waste valve
- Y10T 137/5526 . . . . . With screw or gear in actuating mechanism
- Y10T 137/5532 . . . . Reciprocating relatively fixed valves
- Y10T 137/5538 . . . . . Waste through lower valve guide
- Y10T 137/5544 . . Reversing valves - regenerative furnace type
- Y10T 137/5617 . . With cooling
- Y10T 137/5689 . . Rotary reversing valve
- Y10T 137/5762 . . With leakage or drip collecting
- Y10T 137/5835 . . Relatively movable receptacle or drain pipe and outlet
- Y10T 137/5907 . . Collector for waste liquid derived from solid, gas or vapor
- Y10T 137/598 . . With repair, tapping, assembly, or disassembly means
- Y10T 137/5983 . . Blow out preventer or choke valve device [e.g., oil well flow controlling device, etc.]
- Y10T 137/5987 . . Solenoid or electromagnetically operated valve
- Y10T 137/599 . . Pressure regulating type valve



|               |  |
|---------------|--|
| Y10T 137/5994 | . . . Diaphragm type   |
| Y10T 137/5997 | . . Gas or water meter replacing   |
| Y10T 137/60   | . . Assembling or disassembling flexible tube or sleeve type valve   |
| Y10T 137/6004 | . . Assembling or disassembling float or float valve   |
| Y10T 137/6007 | . . Assembling or disassembling multi way valve  |
| Y10T 137/6011 | . . Assembling, disassembling, or removing cartridge type valve [e.g., insertable and removable as a unit, etc.] |
| Y10T 137/6014 | . . . Faucet type [e.g., domestic water use, etc.]   |
| Y10T 137/6017 | . . . . Including removable valve head and seat unit   |
| Y10T 137/6021 | . . . . Including mechanical movement actuator   |
| Y10T 137/6024 | . . . . Particular handle or handle fastening means  |
| Y10T 137/6028 | . . Assembling or disassembling pivoted valve  |
| Y10T 137/6031 | . . Assembling or disassembling rotary valve   |
| Y10T 137/6035 | . . . Rotary ball valve  |
| Y10T 137/6038 | . . . . Particular valve seat or interface seal  |
| Y10T 137/6041 | . . . . . Replaceable  |
| Y10T 137/6045 | . . . . . With top entry valve   |
| Y10T 137/6048 | . . . Butterfly valve  |
| Y10T 137/6052 | . . . . Having valve head or seat packing  |
| Y10T 137/6055 | . . . . With head and stem collections   |
| Y10T 137/6058 | . . . Plug valve   |
| Y10T 137/6062 | . . . . Having retainer at actuator end  |
| Y10T 137/6065 | . . Assembling or disassembling reciprocating valve  |
| Y10T 137/6069 | . . . Having particularly packed or sealed mechanical movement actuator  |
| Y10T 137/6072 | . . . Gate valve   |
| Y10T 137/6075 | . . . . Bifaced  |
| Y10T 137/6079 | . . . . Having particular valve seat   |
| Y10T 137/6082 | . . . . . Including seal   |
| Y10T 137/6086 | . . Assembling or disassembling check valve  |
| Y10T 137/6089 | . . With mechanical movement between actuator and valve  |
| Y10T 137/6092 | . . . Plural motions of valve  |
| Y10T 137/6096 | . . . Lever type   |
| Y10T 137/6099 | . . . Gear type  |
| Y10T 137/6103 | . . . Cam type   |
| Y10T 137/6106 | . . . Screw type   |
| Y10T 137/6109 | . . Tool for applying or removing valve or valve member  |
| Y10T 137/6113 | . . . Including sealing feature  |
| Y10T 137/6116 | . . With holding means functioning only during transportation assembly or disassembly                            |
| Y10T 137/612  | . . Tapping a pipe, keg, or apertured tank under pressure  |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/6123 | . . .     | With aperture forming means  |
| Y10T 137/6126 | . . .     | Imperforate closure removing and holding tap                                   |
| Y10T 137/613  | . . .     | With valved closure or bung  |
| Y10T 137/6133 | . . . .   | Combined rotary and longitudinal movement of valve                             |
| Y10T 137/6137 | . . . .   | Longitudinal movement of valve   |
| Y10T 137/614  | . . . .   | Rotary movement of valve   |
| Y10T 137/6144 | . . .     | With core ejectors   |
| Y10T 137/6147 | . . . .   | Impact operated  |
| Y10T 137/615  | . .       | Foot valve extraction from top of enclosure                                    |
| Y10T 137/6154 | . .       | With disassembly tool engaging feature   |
| Y10T 137/6157 | . . .     | Wrench engaging lugs   |
| Y10T 137/6161 | . .       | With provision of alternate wear parts   |
| Y10T 137/6164 | . . .     | Valve heads and/or seats   |
| Y10T 137/6167 | . . . .   | Opposite duplicate surfaces of unitary structure                               |
| Y10T 137/6171 | . . . . . | Homogeneous material   |
| Y10T 137/6174 | . . . . . | Valve heads  |
| Y10T 137/6178 | . . . .   | Different portions of continuous surfaces                                      |
| Y10T 137/6181 | . . . .   | Successively used adjacent independent elements                                |
| Y10T 137/6184 | . .       | Removable valve with normally disabled supplemental check valve                |
| Y10T 137/6188 | . . .     | Check valve disabled by normally movable main valve part                       |
| Y10T 137/6191 | . . . .   | Ball check   |
| Y10T 137/6195 | . . . .   | Spring bias  |
| Y10T 137/6198 | . .       | Non-valving motion of the valve or valve seat                                  |
| Y10T 137/6253 | . .       | Rotary motion of a reciprocating valve   |
| Y10T 137/6307 | . . .     | Turbine on valve   |
| Y10T 137/6362 | . . .     | Manual rotating means  |
| Y10T 137/6416 | . .       | With heating or cooling of the system  |
| Y10T 137/6443 | . .       | With burner  |
| Y10T 137/647  | . . .     | Flue extending through fluid   |
| Y10T 137/6497 | . .       | Hot and cold water system having a connection from the hot to the cold channel |
| Y10T 137/6525 | . .       | Air heated or cooled [fan, fins, or channels]                                  |
| Y10T 137/6552 | . .       | With diversion of part of fluid to heat or cool the device or its contents     |
| Y10T 137/6579 | . .       | Circulating fluid in heat exchange relationship                                |
| Y10T 137/6606 | . .       | With electric heating element  |
| Y10T 137/6633 | . .       | With fluid system support for workman or non-system material                   |
| Y10T 137/6851 | . .       | With casing, support, protector or static constructional installations         |
| Y10T 137/6855 | . .       | Vehicle  |
| Y10T 137/6858 | . . .     | Locomotive   |
| Y10T 137/6862 | . . . .   | Boiler or steam dome   |

|               |           |   |
|---------------|-----------|---|
| Y10T 137/6866 | . . .     | Railway car   |
| Y10T 137/6869 | . . . .   | Car frame   |
| Y10T 137/6873 | . . . .   | End of car  |
| Y10T 137/6877 | . . . .   | Roof, wall or floor   |
| Y10T 137/6881 | . . .     | Automotive  |
| Y10T 137/6884 | . . . .   | Steering post or wheel  |
| Y10T 137/6888 | . . . .   | Dash  |
| Y10T 137/6892 | . . . .   | Floor or frame  |
| Y10T 137/6895 | . . . .   | Fender or running board   |
| Y10T 137/6899 | . . .     | With hose reel storage means  |
| Y10T 137/6903 | . . .     | Guided by means of track or guideway                                |
| Y10T 137/6906 | . . .     | Aerial or water-supported [e.g., airplane or ship, etc.]            |
| Y10T 137/691  | . . .     | With retractable or nonuse-positionable support wheel               |
| Y10T 137/6914 | . . .     | Vehicle supports fluid compressor and compressed fluid storage tank |
| Y10T 137/6918 | . .       | With hose storage or retrieval means                                |
| Y10T 137/6921 | . . .     | With means for plural hoses   |
| Y10T 137/6925 | . . .     | With flow regulation responsive to hose movement                    |
| Y10T 137/6929 | . . . .   | Reel type   |
| Y10T 137/6932 | . . .     | With retrieval means  |
| Y10T 137/6936 | . . . .   | Power stop or brake   |
| Y10T 137/694  | . . . . . | Responsive to position of hose in casing                            |
| Y10T 137/6943 | . . . .   | Biased to retracted position  |
| Y10T 137/6947 | . . . . . | Boom type   |
| Y10T 137/6951 | . . . . . | Weighted  |
| Y10T 137/6954 | . . .     | Reel with support therefor  |
| Y10T 137/6958 | . . . .   | Ground supported  |
| Y10T 137/6962 | . . .     | Basket or holder for folded coiled hose                             |
| Y10T 137/6966 | . .       | Static constructional installations                                 |
| Y10T 137/6969 | . . .     | Buildings   |
| Y10T 137/6973 | . . . .   | Outside access to portions of the system                            |
| Y10T 137/6977 | . . . .   | Escutcheon type support   |
| Y10T 137/698  | . . . .   | Wall  |
| Y10T 137/6984 | . . . . . | Recessed gas outlet box   |
| Y10T 137/6988 | . . . .   | Floor installation  |
| Y10T 137/6991 | . . .     | Ground supporting enclosure   |
| Y10T 137/6995 | . . . .   | Valve and meter wells   |
| Y10T 137/6999 | . . . . . | With means to center well on valve                                  |
| Y10T 137/7002 | . . . . . | Detachable base plate   |
| Y10T 137/7006 | . . . . . | Vertical casing aligned by valve casing                             |
| Y10T 137/701  | . . . . . | Combined with actuator  |

|               |           |   |
|---------------|-----------|---|
| Y10T 137/7014 | . . . . . | Telescopic well casing                                |
| Y10T 137/7017 | . . . . . | Telescopic well casing                                |
| Y10T 137/7021 | . . . . . | Covers  |
| Y10T 137/7025 | . . . . . | Pipe line transport                                   |
| Y10T 137/7028 | . . . . . | Tapering or tower type                                |
| Y10T 137/7032 | . . . . . | Furniture and housing furnishings                     |
| Y10T 137/7036 | . . . . . | Jacketed  |
| Y10T 137/7039 | . . . . . | Tank supports   |
| Y10T 137/7043 | . . . . . | Guards and shields                                    |
| Y10T 137/7047 | . . . . . | Resilient abutment for preventing breakage            |
| Y10T 137/7051 | . . . . . | Nozzle abutment for scratch or damage prevention      |
| Y10T 137/7054 | . . . . . | Cover for beer cooler aperture for faucet             |
| Y10T 137/7058 | . . . . . | Sanitary covers or shields                            |
| Y10T 137/7062 | . . . . . | Valve guards  |
| Y10T 137/7065 | . . . . . | With means for accommodating a detachable actuator    |
| Y10T 137/7069 | . . . . . | With lock or seal                                     |
| Y10T 137/71   | . . . . . | With seal   |
| Y10T 137/7131 | . . . . . | Common lock and valve actuator                        |
| Y10T 137/7162 | . . . . . | Combination lock                                      |
| Y10T 137/7194 | . . . . . | Biased valve  |
| Y10T 137/7225 | . . . . . | Mechanical movement between lock and valve            |
| Y10T 137/7256 | . . . . . | Locks against rotary motion                           |
| Y10T 137/7287 | . . . . . | Liquid level responsive or maintaining systems        |
| Y10T 137/729  | . . . . . | Washing machine cycle control                         |
| Y10T 137/7293 | . . . . . | Liquid excluding devices for gas inlet or outlets     |
| Y10T 137/7297 | . . . . . | With second diverse control                           |
| Y10T 137/73   | . . . . . | Manual control  |
| Y10T 137/7303 | . . . . . | Control of both inflow and outflow of tank            |
| Y10T 137/7306 | . . . . . | Electrical characteristic sensing                     |
| Y10T 137/731  | . . . . . | With control fluid connection at desired liquid level |
| Y10T 137/7313 | . . . . . | Control of outflow from tank                          |
| Y10T 137/7316 | . . . . . | Self-emptying tanks                                   |
| Y10T 137/7319 | . . . . . | By float  |
| Y10T 137/7323 | . . . . . | By float  |
| Y10T 137/7326 | . . . . . | Low level safety cut-off                              |
| Y10T 137/7329 | . . . . . | With supplemental or safety closing means or bias     |
| Y10T 137/7332 | . . . . . | Sinking or bucket type float                          |
| Y10T 137/7336 | . . . . . | Gravitating tank                                      |
| Y10T 137/7339 | . . . . . | By weight of accumulated fluid                        |
| Y10T 137/7342 | . . . . . | In sinking or bucket type float                       |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/7345 | . . .     | Oil burner fuel overflow preventing safety cut-offs                                |
| Y10T 137/7349 | . . .     | In communicating measuring vessel  |
| Y10T 137/7352 | . . . .   | Top and bottom connections   |
| Y10T 137/7355 | . . .     | In gravitating tank  |
| Y10T 137/7358 | . .       | By float controlled valve  |
| Y10T 137/7361 | . . .     | Valve opened by external means, closing or closing control by float                |
| Y10T 137/7365 | . . .     | Single float controls plural valves  |
| Y10T 137/7368 | . . .     | Servo relay operation of control   |
| Y10T 137/7371 | . . . .   | Fluid pressure   |
| Y10T 137/7374 | . . . . . | Flexible diaphragm valve   |
| Y10T 137/7378 | . . . . . | From tank  |
| Y10T 137/7381 | . . .     | Quick acting   |
| Y10T 137/7384 | . . . .   | Pilot float released   |
| Y10T 137/7387 | . . . .   | Over center mechanism  |
| Y10T 137/7391 | . . . . . | Shifting weight  |
| Y10T 137/7394 | . . . .   | Trip mechanism   |
| Y10T 137/7397 | . . . . . | Weight or spring bias  |
| Y10T 137/74   | . . . .   | Lost motion mechanism  |
| Y10T 137/7404 | . . .     | Plural floats  |
| Y10T 137/7407 | . . .     | With counter-balance   |
| Y10T 137/741  | . . . .   | Within tank  |
| Y10T 137/7413 | . . .     | Level adjustment or selection means  |
| Y10T 137/7417 | . . .     | With float leakage disposal  |
| Y10T 137/742  | . . .     | In separate communicating float chamber  |
| Y10T 137/7423 | . . .     | Rectilinearly traveling float  |
| Y10T 137/7426 | . . . .   | Float co-axial with valve or port  |
| Y10T 137/743  | . . . . . | Float is spreader or anti-splash means   |
| Y10T 137/7433 | . . . . . | Float surrounds inlet pipe   |
| Y10T 137/7436 | . . . . . | Float rigid with valve   |
| Y10T 137/7439 | . . .     | Float arm operated valve   |
| Y10T 137/7442 | . . . .   | With valve retarder or cushion means   |
| Y10T 137/7446 | . . . .   | With flow guide or restrictor  |
| Y10T 137/7449 | . . . . . | External hood or deflector or annular outlet surrounding the inlet pipe            |
| Y10T 137/7452 | . . . .   | Movable nozzle or inlet terminal   |
| Y10T 137/7455 | . . . .   | Valve removable from outside container   |
| Y10T 137/7459 | . . . .   | With U-shaped inlet pipe having terminal valve                                     |
| Y10T 137/7462 | . . . .   | With refill pipe   |
| Y10T 137/7465 | . . . .   | Assembly mounted on and having reciprocating valve element coaxial with inlet pipe |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/7468 | . . . . . | Horizontal or side entering pipe                     |
| Y10T 137/7472 | . . . . . | Vertical inlet riser                                 |
| Y10T 137/7475 | . . . . . | With toggle or second lever connected to valve       |
| Y10T 137/7478 | . . . . . | With interposed cam, gear or threaded connection     |
| Y10T 137/7481 | . . . . . | Rotary valve element                                 |
| Y10T 137/7485 | . . . . . | Pivoted valve  |
| Y10T 137/7488 | . . . . . | Ball valves  |
| Y10T 137/7491 | . . . . . | Balanced valves                                      |
| Y10T 137/7494 | . . . . . | Flexible valve                                       |
| Y10T 137/7498 | . . . . . | Barometric   |
| Y10T 137/7501 | . . . . . | With shut-off between supply tank and receiver       |
| Y10T 137/7504 | . . . . . | Removable valve head and seat unit                   |
| Y10T 137/7559 | . . . . . | Pump type  |
| Y10T 137/7613 | . . . . . | Threaded into valve casing                           |
| Y10T 137/7668 | . . . . . | Retained by bonnet or closure                        |
| Y10T 137/7722 | . . . . . | Line condition change responsive valves              |
| Y10T 137/7723 | . . . . . | Safety cut-off requiring reset                       |
| Y10T 137/7724 | . . . . . | Thermal  |
| Y10T 137/7725 | . . . . . | Responsive to both high and low pressure or velocity |
| Y10T 137/7726 | . . . . . | Responsive to change in rate of flow                 |
| Y10T 137/7727 | . . . . . | Excessive flow cut-off                               |
| Y10T 137/7728 | . . . . . | High pressure cut-off                                |
| Y10T 137/7729 | . . . . . | Reset by pressure equalization valve or by-pass      |
| Y10T 137/773  | . . . . . | Fluid released trip                                  |
| Y10T 137/7731 | . . . . . | Fluid counter-biased or unseated valve               |
| Y10T 137/7732 | . . . . . | With mechanical stop against reopening               |
| Y10T 137/7733 | . . . . . | With fluid pressure seating of valve                 |
| Y10T 137/7734 | . . . . . | Fluid opened valve requiring reset                   |
| Y10T 137/7736 | . . . . . | Consistency responsive                               |
| Y10T 137/7737 | . . . . . | Thermal responsive                                   |
| Y10T 137/7738 | . . . . . | Pop valves   |
| Y10T 137/7739 | . . . . . | Pop closing valves                                   |
| Y10T 137/774  | . . . . . | Pop pressure reactor in inflow to valve              |
| Y10T 137/7741 | . . . . . | Pop pressure reactor in branched released path       |
| Y10T 137/7742 | . . . . . | Separate relief valves or valves for each branch     |
| Y10T 137/7743 | . . . . . | Lost motion between pop pressure reactor and valve   |
| Y10T 137/7744 | . . . . . | Adjustable choke                                     |
| Y10T 137/7745 | . . . . . | Annular lip or baffle                                |
| Y10T 137/7746 | . . . . . | On movable valve part                                |
| Y10T 137/7747 | . . . . . | Screw threaded                                       |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/7748 | . .       | Combustion engine induction type                           |
| Y10T 137/7749 | . . .     | Valve in auxiliary inlet to induction line                 |
| Y10T 137/775  | . . .     | With manual modifier                                       |
| Y10T 137/7751 | . . .     | With suction compensator                                   |
| Y10T 137/7752 | . . .     | With separate reactor surface                              |
| Y10T 137/7753 | . . .     | Unbalanced pivoted valve [e.g., unbalanced butterfly type] |
| Y10T 137/7754 | . .       | Line flow effect assisted                                  |
| Y10T 137/7755 | . . .     | Reactor surface normal to flow                             |
| Y10T 137/7756 | . . .     | Reactor surface separated from flow by apertured partition |
| Y10T 137/7757 | . . . .   | Through separate aperture                                  |
| Y10T 137/7758 | . .       | Pilot or servo controlled                                  |
| Y10T 137/7759 | . . .     | Responsive to change in rate of fluid flow                 |
| Y10T 137/776  | . . . .   | Control by pressures across flow line valve                |
| Y10T 137/7761 | . . .     | Electrically actuated valve                                |
| Y10T 137/7762 | . . .     | Fluid pressure type  |
| Y10T 137/7764 | . . . .   | Choked or throttled pressure type                          |
| Y10T 137/7765 | . . . . . | Pilot valve within main valve head                         |
| Y10T 137/7766 | . . . . . | Choked passage through main valve head                     |
| Y10T 137/7767 | . . . . . | Loose fitting piston                                       |
| Y10T 137/7768 | . . . . . | Pilot controls supply to pressure chamber                  |
| Y10T 137/7769 | . . . . . | Single acting fluid servo                                  |
| Y10T 137/777  | . . . . . | Spring biased  |
| Y10T 137/7771 | . .       | Bi-directional flow valves                                 |
| Y10T 137/7772 | . . .     | One head and seat carried by head of another               |
| Y10T 137/7773 | . . . .   | Supporting valve only spring biased                        |
| Y10T 137/7774 | . . . .   | Supporting valve spring carried by supporting valve        |
| Y10T 137/7775 | . . . . . | Spring stop on supported valve stem                        |
| Y10T 137/7776 | . . . . . | Spring abuts guide for supported valve stem                |
| Y10T 137/7777 | . . . . . | Both valves spring biased                                  |
| Y10T 137/7778 | . . .     | Axes of ports perpendicular                                |
| Y10T 137/7779 | . . .     | Axes of ports parallel                                     |
| Y10T 137/778  | . . .     | Axes of ports co-axial                                     |
| Y10T 137/7781 | . .       | With separate connected fluid reactor surface              |
| Y10T 137/7782 | . . .     | With manual or external control for line valve             |
| Y10T 137/7783 | . . .     | Valve closes in responses to reverse flow                  |
| Y10T 137/7784 | . . .     | Responsive to change in rate of fluid flow                 |
| Y10T 137/7785 | . . . .   | Valve closes in response to excessive flow                 |
| Y10T 137/7786 | . . . .   | Turbine or swinging vane type reactor                      |
| Y10T 137/7787 | . . . .   | Expansible chamber subject to differential pressures       |
| Y10T 137/7788 | . . . . . | Pressures across fixed choke                               |

|               |           |   |
|---------------|-----------|---|
| Y10T 137/7789 | . . . . . | With Venturi tube having a connection to throat               |
| Y10T 137/7791 | . . . . . | Pressures across flow line valve                              |
| Y10T 137/7792 | . . . . . | Movable deflector or choke                                    |
| Y10T 137/7793 | . . . . . | With opening bias [e.g., pressure regulator]                  |
| Y10T 137/7794 | . . . . . | With relief valve   |
| Y10T 137/7795 | . . . . . | Multi-stage   |
| Y10T 137/7796 | . . . . . | Senses inlet pressure   |
| Y10T 137/7797 | . . . . . | Bias variable during operation                                |
| Y10T 137/7798 | . . . . . | Ancillary reactor surface responds to inlet pressure          |
| Y10T 137/7799 | . . . . . | Liquid transfer   |
| Y10T 137/78   | . . . . . | Weight  |
| Y10T 137/7801 | . . . . . | Balanced valve  |
| Y10T 137/7802 | . . . . . | Liquid level responsive gas flow control                      |
| Y10T 137/7803 | . . . . . | With protective separator                                     |
| Y10T 137/7804 | . . . . . | Main flow through isolated reactor chamber                    |
| Y10T 137/7805 | . . . . . | Through external pipe   |
| Y10T 137/7806 | . . . . . | Modified valve casing   |
| Y10T 137/7807 | . . . . . | Adjustable external lever                                     |
| Y10T 137/7808 | . . . . . | Apertured reactor surface surrounds flow line                 |
| Y10T 137/7809 | . . . . . | Reactor surface separated by apertured partition              |
| Y10T 137/781  | . . . . . | In valve stem   |
| Y10T 137/7811 | . . . . . | Also through reactor surface                                  |
| Y10T 137/7812 | . . . . . | Valve stem passes through the aperture                        |
| Y10T 137/7813 | . . . . . | Plural reactor surfaces                                       |
| Y10T 137/7814 | . . . . . | Reactor is an inverted cup having liquid seal                 |
| Y10T 137/7815 | . . . . . | With movement dampener  |
| Y10T 137/7816 | . . . . . | Valve head in inlet chamber                                   |
| Y10T 137/7818 | . . . . . | Valve head in inlet chamber                                   |
| Y10T 137/7819 | . . . . . | Rectilinear valve stem rigid with reactor surface             |
| Y10T 137/782  | . . . . . | Reactor surface is diaphragm                                  |
| Y10T 137/7821 | . . . . . | With valve closing bias                                       |
| Y10T 137/7822 | . . . . . | Reactor surface closes chamber                                |
| Y10T 137/7823 | . . . . . | Valve head in inlet chamber                                   |
| Y10T 137/7824 | . . . . . | Reactor surface is inverted cup [float]                       |
| Y10T 137/7825 | . . . . . | Rectilinear valve stem rigid with reactor surface             |
| Y10T 137/7826 | . . . . . | With valve closing bias                                       |
| Y10T 137/7827 | . . . . . | In reactor chamber  |
| Y10T 137/7828 | . . . . . | Valve head on yoke  |
| Y10T 137/7829 | . . . . . | Yoke has valve closing bias                                   |
| Y10T 137/783  | . . . . . | Reactor operatively connected to valve by mechanical movement |



|               |               |  |
|---------------|---------------|--|
| Y10T 137/7831 | . . . .       | With mechanical movement between actuator and valve              |
| Y10T 137/7832 | . . .         | Plural valves biased closed                                      |
| Y10T 137/7833 | . . .         | With means for mounting or connecting to system                  |
| Y10T 137/7834 | . . .         | Valve seat or external sleeve moves to open valve                |
| Y10T 137/7835 | . . .         | Valve seating in direction of flow                               |
| Y10T 137/7836 | . . . .       | Flexible diaphragm or bellows reactor                            |
| Y10T 137/7837 | . .           | Direct response valves [i.e., check valve type]                  |
| Y10T 137/7838 | . . .         | Plural   |
| Y10T 137/7839 | . . . .       | Dividing and recombining in a single flow path                   |
| Y10T 137/784  | . . . . .     | Integral resilient member forms plural valves                    |
| Y10T 137/7841 | . . . .       | One valve carries head and seat for second valve                 |
| Y10T 137/7842 | . . . .       | Diverse types  |
| Y10T 137/7843 | . . . .       | Integral resilient member forms plural valves                    |
| Y10T 137/7845 | . . . .       | With common biasing means  |
| Y10T 137/7846 | . . . .       | Mechanically interconnected                                      |
| Y10T 137/7847 | . . .         | With leak passage  |
| Y10T 137/7848 | . . . .       | Permits flow at valve interface                                  |
| Y10T 137/7849 | . . . .       | Bypass in valve casing   |
| Y10T 137/785  | . . .         | With retarder or dashpot   |
| Y10T 137/7851 | . . . .       | End of valve forms dashpot chamber                               |
| Y10T 137/7852 | . . . .       | End of valve moves inside dashpot chamber                        |
| Y10T 137/7853 | . . . . .     | Enlarged piston on end of valve stem                             |
| Y10T 137/7854 | . . .         | In couplings for coaxial conduits, e.g., drill pipe check valves |
| Y10T 137/7855 | . . . .       | Valve seat threaded into a coupling element                      |
| Y10T 137/7856 | . . . .       | Valve seat formed on or carried by a coupling element            |
| Y10T 137/7857 | . . . .       | Valve seat clamped between coupling elements                     |
| Y10T 137/7858 | . . .         | With means for selecting area of valve or seat                   |
| Y10T 137/7859 | . . .         | Single head, plural ports in parallel                            |
| Y10T 137/786  | . . . .       | Concentric ports   |
| Y10T 137/7861 | . . . .       | Annular head   |
| Y10T 137/7862 | . . . . .     | Central post on seat   |
| Y10T 137/7863 | . . . . . .   | Stop   |
| Y10T 137/7864 | . . . . . . . | With guide   |
| Y10T 137/7865 | . . . . . .   | Guide  |
| Y10T 137/7866 | . . .         | Plural seating   |
| Y10T 137/7867 | . . . .       | Sequential   |
| Y10T 137/7868 | . . . . .     | Resilient gasket   |
| Y10T 137/7869 | . . .         | Biased open  |
| Y10T 137/787  | . . . .       | Oppositely swinging vanes  |
| Y10T 137/7871 | . . . .       | Weight biased  |

|               |           |   |
|---------------|-----------|---|
| Y10T 137/7873 | . . . . . | Ball valves   |
| Y10T 137/7874 | . . . . . | Edge pivoted valve  |
| Y10T 137/7875 | . . . . . | Pivoted valves  |
| Y10T 137/7876 | . . . . . | With external means for opposing bias                             |
| Y10T 137/7877 | . . . . . | With means for retaining external means in bias opposing position |
| Y10T 137/7878 | . . . . . | With bias adjustment indicator                                    |
| Y10T 137/7879 | . . . . . | Resilient material valve  |
| Y10T 137/788  | . . . . . | Having expansible port  |
| Y10T 137/7881 | . . . . . | Apertured plate   |
| Y10T 137/7882 | . . . . . | Having exit lip   |
| Y10T 137/7883 | . . . . . | With biasing means  |
| Y10T 137/7884 | . . . . . | Side vent   |
| Y10T 137/7885 | . . . . . | Multiple slit   |
| Y10T 137/7886 | . . . . . | Internally extending mount  |
| Y10T 137/7887 | . . . . . | Center flexing strip  |
| Y10T 137/7888 | . . . . . | With valve member flexing about securement                        |
| Y10T 137/7889 | . . . . . | Sleeve  |
| Y10T 137/789  | . . . . . | Central mount   |
| Y10T 137/7891 | . . . . . | Flap or reed  |
| Y10T 137/7892 | . . . . . | With stop   |
| Y10T 137/7893 | . . . . . | With spring   |
| Y10T 137/7894 | . . . . . | With weight   |
| Y10T 137/7895 | . . . . . | Peripherally secured diaphragm                                    |
| Y10T 137/7896 | . . . . . | Annulus   |
| Y10T 137/7897 | . . . . . | Vacuum relief type  |
| Y10T 137/7898 | . . . . . | Pivoted valves  |
| Y10T 137/79   | . . . . . | Head retained by removable closure                                |
| Y10T 137/7901 | . . . . . | Valve head movably connected for accommodation to seat            |
| Y10T 137/7902 | . . . . . | Valve mounted on end of pipe                                      |
| Y10T 137/7903 | . . . . . | Weight biased   |
| Y10T 137/7904 | . . . . . | Reciprocating valves  |
| Y10T 137/7905 | . . . . . | Plural biasing means  |
| Y10T 137/7906 | . . . . . | Cam means for adjusting and fixing bias                           |
| Y10T 137/7907 | . . . . . | Varying effective lever arm                                       |
| Y10T 137/7908 | . . . . . | Weight biased   |
| Y10T 137/7909 | . . . . . | Valve body is the weight  |
| Y10T 137/791  | . . . . . | Ball valves   |
| Y10T 137/7911 | . . . . . | Removable cage  |
| Y10T 137/7912 | . . . . . | Separable seat  |
| Y10T 137/7913 | . . . . . | Guided head   |

|               |           |  |
|---------------|-----------|--|
| Y10T 137/7914 | . . . . . | Cage   |
| Y10T 137/7915 | . . . . . | Guide stem   |
| Y10T 137/7916 | . . . . . | With closing stop  |
| Y10T 137/7917 | . . . . . | Oppositely disposed  |
| Y10T 137/7918 | . . . . . | Head slidable on guide rod   |
| Y10T 137/7919 | . . . . . | Guide and seat integral unit   |
| Y10T 137/792  | . . . . . | Guide and closure integral unit  |
| Y10T 137/7921 | . . . . . | Weight coaxial with valve  |
| Y10T 137/7922 | . . . . . | Spring biased  |
| Y10T 137/7923 | . . . . . | With means to protect spring from fluid  |
| Y10T 137/7924 | . . . . . | Spring under tension   |
| Y10T 137/7925 | . . . . . | Piston-type valves   |
| Y10T 137/7927 | . . . . . | Ball valves  |
| Y10T 137/7928 | . . . . . | With follower  |
| Y10T 137/7929 | . . . . . | Spring coaxial with valve  |
| Y10T 137/793  | . . . . . | Broken valve parts retainer  |
| Y10T 137/7931 | . . . . . | Spring in inlet  |
| Y10T 137/7932 | . . . . . | Valve stem extends through fixed spring abutment                                     |
| Y10T 137/7933 | . . . . . | Yoke or cage-type support for valve stem   |
| Y10T 137/7934 | . . . . . | Spring abuts removable valve stem guide  |
| Y10T 137/7935 | . . . . . | Head slides on guide-rod concentric with spring                                      |
| Y10T 137/7936 | . . . . . | Spring guides valve head   |
| Y10T 137/7937 | . . . . . | Cage-type guide for stemless valves  |
| Y10T 137/7938 | . . . . . | Guide means integral and coplanar with valve disk                                    |
| Y10T 137/7939 | . . . . . | Head between spring and guide  |
| Y10T 137/794  | . . . . . | With means for separating solid material from the fluid                              |
| Y10T 137/7976 | . . . . . | Plural separating elements   |
| Y10T 137/8013 | . . . . . | Sediment chamber   |
| Y10T 137/8049 | . . . . . | Movable strainer   |
| Y10T 137/8085 | . . . . . | Hollow strainer, fluid inlet and outlet perpendicular to each other                  |
| Y10T 137/8122 | . . . . . | Planar strainer normal to flow path  |
| Y10T 137/8158 | . . . . . | With indicator, register, recorder, alarm or inspection means                        |
| Y10T 137/8175 | . . . . . | Plural   |
| Y10T 137/8192 | . . . . . | Unobvious - "combination lock" type  |
| Y10T 137/8208 | . . . . . | Time   |
| Y10T 137/8225 | . . . . . | Position or extent of motion indicator   |
| Y10T 137/8242 | . . . . . | Electrical   |
| Y10T 137/8259 | . . . . . | Selection from plural branches   |
| Y10T 137/8275 | . . . . . | Indicator element rigidly carried by the movable element whose position is indicated |

|                |  |
|----------------|--|
| Y10T 137/8292  | . . . . Movable indicator element is a pointer             |
| Y10T 137/8309  | . . . . . Pointer integral with handle                     |
| Y10T 137/8326  | . . Fluid pressure responsive indicator, recorder or alarm |
| Y10T 137/8342  | . . Liquid level responsive indicator, recorder or alarm   |
| Y10T 137/8359  | . . Inspection means                                       |
| Y10T 137/8376  | . Combined   |
| Y10T 137/8593  | . Systems  |
| Y10T 137/85938 | . . Non-valved flow dividers                               |
| Y10T 137/85946 | . . Faucet connected, sink drained                         |
| Y10T 137/85954 | . . Closed circulating system                              |
| Y10T 137/85962 | . . . With thermal circulating means [thermo-siphons]      |
| Y10T 137/8597  | . . Main line as motive fluid for follower-type feeder     |
| Y10T 137/85978 | . . With pump  |
| Y10T 137/85986 | . . . Pumped fluid control                                 |
| Y10T 137/85994 | . . . . Manual   |
| Y10T 137/86002 | . . . . Fluid pressure responsive                          |
| Y10T 137/8601  | . . . . . And pilot valve                                  |
| Y10T 137/86019 | . . . . . Direct response valve                            |
| Y10T 137/86027 | . . . . Electric   |
| Y10T 137/86035 | . . . Combined with fluid receiver                         |
| Y10T 137/86043 | . . . . Reserve or surge receiver                          |
| Y10T 137/86051 | . . . . Compressed air supply unit                         |
| Y10T 137/86059 | . . . . Hydraulic power unit                               |
| Y10T 137/86067 | . . . . Fluid sump   |
| Y10T 137/86075 | . . . And jet-aspiration type pump                         |
| Y10T 137/86083 | . . . Vacuum pump  |
| Y10T 137/86091 | . . . Resiliently mounted pump                             |
| Y10T 137/86099 | . . . Hand pump  |
| Y10T 137/86107 | . . . Multiple inlet with multiple outlet                  |
| Y10T 137/86115 | . . . Downstream cyclic distributor                        |
| Y10T 137/86123 | . . . . Distributor part unitary with movable pump part    |
| Y10T 137/86131 | . . . Plural   |
| Y10T 137/86139 | . . . . Serial   |
| Y10T 137/86147 | . . . . . With single motive input                         |
| Y10T 137/86155 | . . . . . . One pump driven by motive fluid from the other |
| Y10T 137/86163 | . . . . Parallel   |
| Y10T 137/86171 | . . . With pump bypass                                     |
| Y10T 137/86179 | . . . Drain valve actuator mounted on pump                 |
| Y10T 137/86187 | . . Plural tanks or compartments connected for serial flow |
| Y10T 137/86196 | . . . Separable with valved-connecting passage             |

|                |           |  |
|----------------|-----------|--|
| Y10T 137/86204 | . . .     | Fluid progresses by zigzag flow                                      |
| Y10T 137/86212 | . . .     | Plural compartments formed by baffles                                |
| Y10T 137/86222 | . . .     | Plural top-to-bottom connected tanks                                 |
| Y10T 137/86228 | . . .     | With communicating opening in common walls of tanks or compartments  |
| Y10T 137/86236 | . .       | Tank with movable or adjustable outlet or overflow pipe              |
| Y10T 137/86244 | . . .     | Horizontally traversing outlet                                       |
| Y10T 137/86252 | . . .     | Float-supported outlet   |
| Y10T 137/86266 | . . .     | Swinging outlet pipe or spout  |
| Y10T 137/86268 | . .       | With running joint between movable parts of system                   |
| Y10T 137/86276 | . .       | Movable tank   |
| Y10T 137/86284 | . .       | With antisplash means not in flow passage                            |
| Y10T 137/86292 | . .       | System with plural openings, one a gas vent or access opening        |
| Y10T 137/863   | . . .     | Access and outlet  |
| Y10T 137/86308 | . . . .   | Tank access opening and bottom outlet                                |
| Y10T 137/86316 | . . . . . | Access opening interlock or telltale on outlet valve actuator        |
| Y10T 137/86324 | . . .     | Tank with gas vent and inlet or outlet                               |
| Y10T 137/86332 | . . . .   | Vent and inlet or outlet in unitary mounting                         |
| Y10T 137/8634  | . . .     | With vented outlet   |
| Y10T 137/86348 | . .       | Tank with internally extending flow guide, pipe or conduit           |
| Y10T 137/86356 | . . .     | Nondraining overflow type  |
| Y10T 137/86364 | . . .     | Inverted "U" passage   |
| Y10T 137/86372 | . . .     | Inlet internally extending   |
| Y10T 137/86381 | . .       | Head-establishing standpipe or expansion chamber [e.g., surge tanks] |
| Y10T 137/86389 | . .       | Programmer or timer  |
| Y10T 137/86397 | . . .     | With independent valve controller                                    |
| Y10T 137/86405 | . . .     | Repeating cycle  |
| Y10T 137/86413 | . . . .   | Self-cycling   |
| Y10T 137/86421 | . . . .   | Variable   |
| Y10T 137/86429 | . . . . . | Attachable and removable element                                     |
| Y10T 137/86437 | . . . . . | Adjustable cam   |
| Y10T 137/86445 | . . .     | Plural, sequential, valve actuations                                 |
| Y10T 137/86453 | . . . .   | Plural trips or trip actuations                                      |
| Y10T 137/86461 | . . . .   | Variable cycle   |
| Y10T 137/86469 | . . .     | Clock alarm mechanism controlled                                     |
| Y10T 137/86477 | . . .     | Biased latch, cam operated   |
| Y10T 137/86485 | . .       | Line condition change responsive release of valve                    |
| Y10T 137/86493 | . .       | Multi-way valve unit   |
| Y10T 137/86501 | . . .     | Sequential distributor or collector type                             |
| Y10T 137/86509 | . . .     | Sequentially progressive opening or closing of plural ports          |
| Y10T 137/86517 | . . . .   | With subsequent closing of first port                                |

|                |           |   |
|----------------|-----------|---|
| Y10T 137/86525 | . . . . . | Flow combining with flow dividing                                 |
| Y10T 137/86533 | . . . . . | Rotary  |
| Y10T 137/86541 | . . . . . | Plug  |
| Y10T 137/86549 | . . . . . | Selective reciprocation or rotation                               |
| Y10T 137/86558 | . . . . . | Plural noncommunicating flow paths                                |
| Y10T 137/86566 | . . . . . | Rotary plug   |
| Y10T 137/86574 | . . . . . | Supply and exhaust  |
| Y10T 137/86582 | . . . . . | Pilot-actuated  |
| Y10T 137/8659  | . . . . . | Variable orifice-type modulator                                   |
| Y10T 137/86598 | . . . . . | Opposed orifices; interposed modulator                            |
| Y10T 137/86606 | . . . . . | Common to plural valve motor chambers                             |
| Y10T 137/86614 | . . . . . | Electric  |
| Y10T 137/86622 | . . . . . | Motor-operated  |
| Y10T 137/8663  | . . . . . | Fluid motor   |
| Y10T 137/86638 | . . . . . | Rotary valve  |
| Y10T 137/86646 | . . . . . | Plug type   |
| Y10T 137/86654 | . . . . . | For plural lines  |
| Y10T 137/86662 | . . . . . | Axial and radial flow   |
| Y10T 137/8667  | . . . . . | Reciprocating valve   |
| Y10T 137/86678 | . . . . . | Combined disk or plug and gate or piston                          |
| Y10T 137/86686 | . . . . . | Plural disk or plug   |
| Y10T 137/86694 | . . . . . | Piston valve  |
| Y10T 137/86702 | . . . . . | With internal flow passage  |
| Y10T 137/8671  | . . . . . | With annular passage [e.g., spool]                                |
| Y10T 137/86718 | . . . . . | Dividing into parallel flow paths with recombining                |
| Y10T 137/86726 | . . . . . | Valve with bypass connections                                     |
| Y10T 137/86734 | . . . . . | With metering feature   |
| Y10T 137/86743 | . . . . . | Rotary  |
| Y10T 137/86751 | . . . . . | Plug  |
| Y10T 137/86759 | . . . . . | Reciprocating   |
| Y10T 137/86767 | . . . . . | Spool   |
| Y10T 137/86775 | . . . . . | With internal passage   |
| Y10T 137/86783 | . . . . . | Unequal heads   |
| Y10T 137/86791 | . . . . . | Piston  |
| Y10T 137/86799 | . . . . . | With internal flow passage  |
| Y10T 137/86807 | . . . . . | Sequential opening or closing of serial ports in single flow line |
| Y10T 137/86815 | . . . . . | Multiple inlet with single outlet                                 |
| Y10T 137/86823 | . . . . . | Rotary valve  |
| Y10T 137/86831 | . . . . . | Selective opening of plural ports                                 |

|                |           |   |
|----------------|-----------|---|
| Y10T 137/86839 | . . .     | Four port reversing valves  |
| Y10T 137/86847 | . . .     | Pivoted valve unit  |
| Y10T 137/86855 | . . . .   | Gate  |
| Y10T 137/86863 | . . .     | Rotary valve unit   |
| Y10T 137/86871 | . . . .   | Plug  |
| Y10T 137/86879 | . . .     | Reciprocating valve unit  |
| Y10T 137/86887 | . . . .   | Combined disk or plug and gate or piston                              |
| Y10T 137/86895 | . . . .   | Plural disk or plug   |
| Y10T 137/86903 | . .       | Plural petcocks   |
| Y10T 137/86911 | . .       | Sequential distributor or collector type                              |
| Y10T 137/86919 | . .       | Sequentially closing and opening alternately seating flow controllers |
| Y10T 137/86928 | . .       | Sequentially progressive opening or closing of plural valves          |
| Y10T 137/86936 | . . .     | Pressure equalizing or auxiliary shunt flow                           |
| Y10T 137/86944 | . . . .   | One valve seats against other valve [e.g., concentric valves]         |
| Y10T 137/86952 | . . . . . | Locomotive throttle   |
| Y10T 137/8696  | . . . . . | Gate  |
| Y10T 137/86968 | . . . . . | With balancing chamber  |
| Y10T 137/86976 | . . . . . | First valve moves second valve  |
| Y10T 137/86984 | . . . . . | Actuator moves both valves  |
| Y10T 137/86992 | . . .     | With subsequent closing of first opened port                          |
| Y10T 137/87    | . . . .   | Simultaneously moved port controllers                                 |
| Y10T 137/87008 | . . .     | Screw-actuated differential valves                                    |
| Y10T 137/87016 | . . .     | Lost motion   |
| Y10T 137/87024 | . . . .   | Cam determines sequence   |
| Y10T 137/87032 | . . . .   | Rotary concentric valves  |
| Y10T 137/8704  | . . . .   | First valve actuates second valve                                     |
| Y10T 137/87048 | . .       | With preselecting means for plural valve actuator                     |
| Y10T 137/87056 | . .       | With selective motion for plural valve actuator                       |
| Y10T 137/87064 | . . .     | Oppositely movable cam surfaces                                       |
| Y10T 137/87072 | . . .     | Rotation about either of two pivotal axes                             |
| Y10T 137/8708  | . . .     | Rotation of actuator arm about its pivot and its axis                 |
| Y10T 137/87088 | . . .     | Reciprocation along and rotation about same axis                      |
| Y10T 137/87096 | . .       | Valves with separate, correlated, actuators                           |
| Y10T 137/87105 | . . .     | Correlated across separable flow path joint                           |
| Y10T 137/87113 | . . .     | Interlocked   |
| Y10T 137/87121 | . . .     | Coaxial stems   |
| Y10T 137/87129 | . . . .   | Rotary  |
| Y10T 137/87137 | . . . . . | And reciprocating   |
| Y10T 137/87145 | . . . . . | Concentric, central valve removable                                   |
| Y10T 137/87153 | . .       | Plural noncommunicating flow paths                                    |

|                |           |  |
|----------------|-----------|--|
| Y10T 137/87161 | . . .     | With common valve operator   |
| Y10T 137/87169 | . .       | Supply and exhaust   |
| Y10T 137/87177 | . . .     | With bypass  |
| Y10T 137/87185 | . . . .   | Controlled by supply or exhaust valve  |
| Y10T 137/87193 | . . .     | Pilot-actuated   |
| Y10T 137/87201 | . . . .   | Common to plural valve motor chambers  |
| Y10T 137/87209 | . . . .   | Electric   |
| Y10T 137/87217 | . . .     | Motor  |
| Y10T 137/87225 | . . . .   | Fluid motor  |
| Y10T 137/87233 | . . .     | Biased exhaust valve   |
| Y10T 137/87241 | . . . .   | Biased closed  |
| Y10T 137/87249 | . .       | Multiple inlet with multiple outlet  |
| Y10T 137/87257 | . .       | Hydraulic brake line [e.g., hill holders]  |
| Y10T 137/87265 | . .       | Dividing into parallel flow paths with recombining   |
| Y10T 137/87273 | . . .     | With fluid coupling [e.g., railway car hose coupling, truck-trailer oil system coupling, etc.] |
| Y10T 137/87281 | . . .     | System having plural inlets  |
| Y10T 137/8729  | . . . .   | Having digital flow controller   |
| Y10T 137/87298 | . . .     | Having digital flow controller   |
| Y10T 137/87306 | . . . .   | Having plural branches under common control for separate valve actuators                       |
| Y10T 137/87314 | . . . . . | Electromagnetic or electric control [e.g., digital control, bistable electro control, etc.]    |
| Y10T 137/87322 | . . .     | With multi way valve having serial valve in at least one branch                                |
| Y10T 137/8733  | . . .     | Fluid pressure regulator in at least one branch  |
| Y10T 137/87338 | . . .     | Flow passage with bypass   |
| Y10T 137/87346 | . . . .   | Including mixing feature   |
| Y10T 137/87354 | . . . .   | Including flowmeter  |
| Y10T 137/87362 | . . . .   | Including cleaning, treating, or heat transfer feature   |
| Y10T 137/8737  | . . . . . | Water treatment feature  |
| Y10T 137/87378 | . . .     | Second valve assembly carried by first valve head  |
| Y10T 137/87386 | . . . .   | With rotary plug having variable restrictor  |
| Y10T 137/87394 | . . . .   | Carried valve is direct response valve [e.g., check valve, etc.]                               |
| Y10T 137/87402 | . . .     | With foam controlling means [e.g., beer, soda faucets]   |
| Y10T 137/8741  | . . .     | With common operator   |
| Y10T 137/87418 | . . . .   | Balanced valve   |
| Y10T 137/87426 | . . . .   | Single resilient member actuates or forms plural passages                                      |
| Y10T 137/87434 | . . . .   | Valves deform to close passage   |
| Y10T 137/87442 | . . . .   | Rotary valve   |
| Y10T 137/8745  | . . . . . | Including rigid plate with flexible or resilient seal  |
| Y10T 137/87458 | . . . . . | Axes of rotation of valves intersect at point  |



|                |           |   |
|----------------|-----------|---|
| Y10T 137/87467 | . . . . . | Axes of rotation parallel   |
| Y10T 137/87475 | . . . . . | Adjacent plate valves always parallel   |
| Y10T 137/87483 | . . . . . | Adjacent plate valves counter rotate  |
| Y10T 137/87491 | . . . . . | Mechanical movement between actuator and non-rotary valve   |
| Y10T 137/87499 | . . . . . | Fluid actuated or retarded  |
| Y10T 137/87507 | . . . . . | Electrical actuator   |
| Y10T 137/87515 | . . . . . | Mechanical movement between actuator and valve  |
| Y10T 137/87523 | . . . . . | Rotary valve  |
| Y10T 137/87531 | . . . . . | Butterfly valve   |
| Y10T 137/87539 | . . . . . | Having guide or restrictor  |
| Y10T 137/87547 | . . . . . | Manually variable   |
| Y10T 137/87555 | . . . . . | Having direct response valve [e.g., check valve, etc.]  |
| Y10T 137/87563 | . . . . . | With reverse flow direction   |
| Y10T 137/87571 | . . . . . | Multiple inlet with single outlet   |
| Y10T 137/87579 | . . . . . | Faucet attachment   |
| Y10T 137/87587 | . . . . . | Combining by aspiration   |
| Y10T 137/87595 | . . . . . | Combining of three or more diverse fluids   |
| Y10T 137/87603 | . . . . . | Plural motivating fluid jets  |
| Y10T 137/87611 | . . . . . | Flow control by varying position of a fluid inlet relative to entrainment chamber                       |
| Y10T 137/87619 | . . . . . | With selectively operated flow control means in inlet   |
| Y10T 137/87627 | . . . . . | Flow control means is located in aspirated fluid inlet  |
| Y10T 137/87635 | . . . . . | Single actuator operates flow control means located in both motivating fluid and aspirated fluid inlets |
| Y10T 137/87643 | . . . . . | With condition responsive valve   |
| Y10T 137/87652 | . . . . . | With means to promote mixing or combining of plural fluids  |
| Y10T 137/8766  | . . . . . | With selectively operated flow control means  |
| Y10T 137/87668 | . . . . . | Single actuator operates plural flow control means  |
| Y10T 137/87676 | . . . . . | With flow control   |
| Y10T 137/87684 | . . . . . | Valve in each inlet   |
| Y10T 137/87692 | . . . . . | With common valve operator  |
| Y10T 137/877   | . . . . . | With flow control means for branched passages   |
| Y10T 137/87708 | . . . . . | With common valve operator  |
| Y10T 137/87716 | . . . . . | For valve having a flexible diaphragm valving member  |
| Y10T 137/87724 | . . . . . | For valve having a ball head  |
| Y10T 137/87732 | . . . . . | With gearing  |
| Y10T 137/8774  | . . . . . | Threaded actuator   |
| Y10T 137/87748 | . . . . . | Pivoted or rotary motion converted to reciprocating valve head motion                                   |
| Y10T 137/87756 | . . . . . | Spring biased   |
| Y10T 137/87764 | . . . . . | Having fluid actuator   |

|                |           |  |
|----------------|-----------|--|
| Y10T 137/87772 | . . . .   | With electrical actuation  |
| Y10T 137/8778  | . . . .   | Spring biased  |
| Y10T 137/87788 | . . .     | With valve or movable deflector at junction                              |
| Y10T 137/87796 | . . . .   | Movable deflector spout in lateral port                                  |
| Y10T 137/87804 | . . . .   | Valve or deflector is tubular passageway                                 |
| Y10T 137/87812 | . . . .   | Pivoted valve or deflector   |
| Y10T 137/8782  | . . . .   | Rotary valve or deflector  |
| Y10T 137/87829 | . . .     | Biased valve   |
| Y10T 137/87837 | . . . .   | Spring bias  |
| Y10T 137/87845 | . . . . . | For valve having a ball head   |
| Y10T 137/87853 | . . . . . | With threaded actuator   |
| Y10T 137/87861 | . . . . . | Spring coaxial with valve  |
| Y10T 137/87869 | . . . . . | Biased open  |
| Y10T 137/87877 | . . .     | Single inlet with multiple distinctly valved outlets                     |
| Y10T 137/87885 | . . .     | Sectional block structure  |
| Y10T 137/87893 | . . .     | With fluid actuator  |
| Y10T 137/87901 | . . .     | With threaded actuator   |
| Y10T 137/87909 | . . .     | Containing rotary valve  |
| Y10T 137/87917 | . .       | Flow path with serial valves and/or closures                             |
| Y10T 137/87925 | . . .     | Separable flow path section, valve or closure in each                    |
| Y10T 137/87933 | . . . .   | Common joint and valve seat faces, or sections joined by closing members |
| Y10T 137/87941 | . . . .   | Each valve and/or closure operated by coupling motion                    |
| Y10T 137/87949 | . . . . . | Linear motion of flow path sections operates both                        |
| Y10T 137/87957 | . . . . . | Valves actuate each other  |
| Y10T 137/87965 | . . . .   | Valve- or closure-operated by coupling motion                            |
| Y10T 137/87973 | . . . .   | Coupling interlocked with valve, or closure or actuator                  |
| Y10T 137/87981 | . . .     | Common actuator  |
| Y10T 137/87989 | . . . .   | Delivery cock with terminal valve  |
| Y10T 137/87997 | . . . .   | Alternately seating  |
| Y10T 137/88005 | . . . . . | Biased valve   |
| Y10T 137/88014 | . . . .   | Opposed screw  |
| Y10T 137/88022 | . . .     | One valve head provides seat for other head                              |
| Y10T 137/8803  | . . . .   | Also carries head of other valve   |
| Y10T 137/88038 | . . .     | One valve head carries other valve head                                  |
| Y10T 137/88046 | . . .     | Biased valve with external operator                                      |
| Y10T 137/88054 | . . .     | Direct response normally closed valve limits direction of flow           |
| Y10T 137/88062 | . . .     | Coaxial oppositely directed seats  |
| Y10T 137/8807  | . .       | Articulated or swinging flow conduit                                     |
| Y10T 137/88078 | . . .     | Actuates valve   |

|                |                                 |
|----------------|---------------------------------|
| Y10T 137/88086 | . . . . Plural motions of valve |
| Y10T 137/88094 | . . . . Reciprocating valve     |
| Y10T 137/88102 | . . . . Rotary valve            |
| Y10T 137/8811  | . Frangible                     |
| Y10T 137/9029  | . With coupling                 |
| Y10T 137/9138  | . . Flexible                    |
| Y10T 137/9247  | . With closure                  |
| Y10T 137/9464  | . Faucets and spouts            |
| Y10T 137/9682  | . Miscellaneous                 |

**Former US Class 152 Series**

|                    |                                    |
|--------------------|------------------------------------|
| <b>Y10T 152/00</b> | <b>Resilient tires and wheels</b>  |
| Y10T 152/10        | . Tires, resilient                 |
| Y10T 152/10009     | . . Emergency                      |
| Y10T 152/10018     | . . with splash guards             |
| Y10T 152/10027     | . . with wear indicating feature   |
| Y10T 152/10036     | . . Cushion and pneumatic combined |
| Y10T 152/10045     | . . . Metallic spring cushion      |
| Y10T 152/10054     | . . . Enclosed cushion             |
| Y10T 152/10063     | . . . Superimposed                 |
| Y10T 152/10072     | . . . . Plungers                   |
| Y10T 152/10081     | . . . . Edge-secured cushion       |
| Y10T 152/1009      | . . . . Guide flanges              |
| Y10T 152/10099     | . . . . . Radial stops             |
| Y10T 152/10108     | . . . . . Bolts or studs           |
| Y10T 152/10117     | . . . Integral                     |
| Y10T 152/10126     | . . . . with removable inner tube  |
| Y10T 152/10135     | . . Armored                        |
| Y10T 152/10144     | . . . Single tube tires internal   |
| Y10T 152/10153     | . . . . Metal                      |
| Y10T 152/10162     | . . . . . Plates                   |
| Y10T 152/10171     | . . . Casing construction          |
| Y10T 152/1018      | . . . . Embedded                   |
| Y10T 152/10189     | . . . . . Metal                    |
| Y10T 152/10198     | . . . . . Plates                   |
| Y10T 152/10207     | . . . . . Annular                  |
| Y10T 152/10216     | . . . . . Linked mat               |
| Y10T 152/10225     | . . . . . Woven                    |
| Y10T 152/10234     | . . . Interliners                  |

|                |           |  |
|----------------|-----------|--|
| Y10T 152/10243 | . . . .   | Cotton, fabric, or rubber  |
| Y10T 152/10252 | . . . .   | Metal  |
| Y10T 152/10261 | . . . . . | Scale armor  |
| Y10T 152/1027  | . . . . . | Annular  |
| Y10T 152/10279 | . .       | Cushion  |
| Y10T 152/10288 | . . .     | Sectional  |
| Y10T 152/10297 | . . . .   | Annular  |
| Y10T 152/10306 | . . . . . | Superimposed   |
| Y10T 152/10315 | . . . .   | Superimposed   |
| Y10T 152/10324 | . . . .   | with apertured external binders  |
| Y10T 152/10333 | . . . .   | Radial bolt secured  |
| Y10T 152/10342 | . . . .   | Abutting sections  |
| Y10T 152/10351 | . . . . . | with annular internal binders  |
| Y10T 152/1036  | . . . . . | Interfitting   |
| Y10T 152/10369 | . . . . . | Indented at joints   |
| Y10T 152/10378 | . . .     | Casing enclosed core   |
| Y10T 152/10387 | . . . .   | Separate core  |
| Y10T 152/10396 | . . . . . | Removable  |
| Y10T 152/10405 | . . . . . | Sponge rubber  |
| Y10T 152/10414 | . . . . . | with core compression  |
| Y10T 152/10423 | . . . . . | Superimposed rings   |
| Y10T 152/10432 | . . . . . | Sectional transversely   |
| Y10T 152/10441 | . . . . . | Balls  |
| Y10T 152/1045  | . . . . . | Integral structure   |
| Y10T 152/10459 | . . . . . | Recessed   |
| Y10T 152/10468 | . . . . . | Chambered  |
| Y10T 152/10477 | . . . . . | Perforated   |
| Y10T 152/10486 | . . . . . | Chambered  |
| Y10T 152/10495 | . .       | Pneumatic tire or inner tube   |
| Y10T 152/10504 | . . .     | Asymmetric tire  |
| Y10T 152/10513 | . . .     | Tire reinforcement material characterized by short length fibers or the like |
| Y10T 152/10522 | . . .     | Multiple chamber   |
| Y10T 152/10531 | . . . .   | Cylinder and piston  |
| Y10T 152/1054  | . . . .   | Mutually free walls  |
| Y10T 152/10549 | . . . . . | Interfitting   |
| Y10T 152/10558 | . . . . . | Balls  |
| Y10T 152/10567 | . . . . . | with simultaneous inflating means  |
| Y10T 152/10576 | . . . .   | Annular chambers   |
| Y10T 152/10585 | . . . . . | with simultaneous inflating means  |
| Y10T 152/10594 | . . . . . | Mutually free walls  |

|                |           |   |
|----------------|-----------|---|
| Y10T 152/10603 | . . . . . | with simultaneous inflating means   |
| Y10T 152/10612 | . . . . . | with simultaneous inflating means   |
| Y10T 152/10621 | . . .     | Sectional casings   |
| Y10T 152/1063  | . . . .   | Circumferential   |
| Y10T 152/10639 | . . . . . | Rigid inner sections  |
| Y10T 152/10648 | . . .     | with means restricting relative movement between tire and inner tube<br>[e.g., anti-creep feature, etc.]  |
| Y10T 152/10657 | . . .     | with means to protect inner tube from rim   |
| Y10T 152/10666 | . . .     | Automatic sealing of punctures [e.g., self-healing, etc.]   |
| Y10T 152/10675 | . . . .   | Using flowable coating or composition   |
| Y10T 152/10684 | . . . . . | On inner surface of tubeless tire   |
| Y10T 152/10693 | . . . . . | Sealant in plural layers or plural pockets  |
| Y10T 152/10702 | . . . . . | within or part of construction of inflating inner tube  |
| Y10T 152/10711 | . . . . . | Sealant in plural layers or plural pockets  |
| Y10T 152/1072  | . . . .   | by compression  |
| Y10T 152/10729 | . . . .   | with reinflating means  |
| Y10T 152/10738 | . . .     | with means to protect tire from rim   |
| Y10T 152/10747 | . . .     | Means other than rim closing the tire opening   |
| Y10T 152/10756 | . . . .   | Positive casing closure   |
| Y10T 152/10765 | . . .     | Characterized by belt or breaker structure  |
| Y10T 152/10774 | . . . .   | Consisting of only one ply  |
| Y10T 152/10783 | . . . .   | Reinforcing plies made up from wound narrow ribbons   |
| Y10T 152/10792 | . . . .   | Structure where each bias angle reinforcing cord ply has no<br>oppositely angled ply  |
| Y10T 152/10801 | . . . .   | Structure made up of two or more sets of plies wherein the reinforcing<br>cords in one set lie in a different angular position relative to those in<br>other sets |
| Y10T 152/1081  | . . . .   | Breaker or belt characterized by the chemical composition or physical<br>properties of elastomer or the like  |
| Y10T 152/10819 | . . .     | Characterized by the structure of the bead portion of the tire  |
| Y10T 152/10828 | . . . .   | Chafer or sealing strips  |
| Y10T 152/10837 | . . . .   | Bead characterized by the radial extent of apex, flipper or chafer into<br>tire sidewall  |
| Y10T 152/10846 | . . . .   | Bead characterized by the chemical composition and or physical<br>properties of elastomers or the like  |
| Y10T 152/10855 | . . .     | Characterized by the carcass, carcass material, or physical arrangement<br>of the carcass materials   |
| Y10T 152/10864 | . . . .   | Sidewall stiffening or reinforcing means other than main carcass plies<br>or foldups thereof about beads  |
| Y10T 152/10873 | . . . .   | with two or more differing cord materials   |
| Y10T 152/10882 | . .       | Patches   |
| Y10T 152/10891 | . . .     | Mechanically secured  |

- Y10T 152/109 . . . . Inside and outside, bolt connected
- Y10T 152/10909 . . . with plugs
- Y10T 152/10918 . . . Bandages
- Y10T 152/10927 . . . . Mechanically secured
- Y10T 152/10936 . . . . . to felly or rim

### **Former US Class 156 Series**

#### **Y10T 156/00**

#### **Adhesive bonding and miscellaneous chemical manufacture**

- Y10T 156/10 . Methods of surface bonding and/or assembly therefor
- Y10T 156/1002 . . with permanent bending or reshaping or surface deformation of self sustaining lamina
- Y10T 156/1003 . . . by separating laminae between spaced secured areas [e.g., honeycomb expanding]
- Y10T 156/1005 . . . by inward collapsing of portion of hollow body
- Y10T 156/1007 . . . Running or continuous length work
- Y10T 156/1008 . . . . Longitudinal bending
- Y10T 156/101 . . . . . Prior to or during assembly with additional lamina
- Y10T 156/1011 . . . . . Overedge bending or overedge folding
- Y10T 156/1013 . . . . . and edge-joining of one piece blank to form tube
- Y10T 156/1015 . . . . Folding
- Y10T 156/1016 . . . . Transverse corrugating
- Y10T 156/1018 . . . . . Subsequent to assembly of laminae
- Y10T 156/102 . . . . . with deformation or cutting of corrugated lamina
- Y10T 156/1021 . . . . . Treating material of corrugated lamina or dry adhesive thereon to render tacky
- Y10T 156/1023 . . . . Surface deformation only [e.g., embossing]
- Y10T 156/1025 . . . to form undulated to corrugated sheet and securing to base with parts of shaped areas out of contact
- Y10T 156/1026 . . . with slitting or removal of material at reshaping area prior to reshaping
- Y10T 156/1028 . . . by bending, drawing or stretch forming sheet to assume shape of configured lamina while in contact therewith
- Y10T 156/103 . . . . Encasing or enveloping the configured lamina
- Y10T 156/1031 . . . . with preshaping of lamina
- Y10T 156/1033 . . . . Flexible sheet to cylinder lamina
- Y10T 156/1034 . . . Overedge bending of lamina about edges of sheetlike base
- Y10T 156/1036 . . . Bending of one piece blank and joining edges to form article
- Y10T 156/1038 . . . . Hollow cylinder article
- Y10T 156/1039 . . . Surface deformation only of sandwich or lamina [e.g., embossed panels]
- Y10T 156/1041 . . . . Subsequent to lamination
- Y10T 156/1043 . . . Subsequent to assembly
- Y10T 156/1044 . . . . of parallel stacked sheets only

|               |           |   |
|---------------|-----------|---|
| Y10T 156/1046 | . . . . . | Bending of one lamina only  |
| Y10T 156/1048 | . . . . . | to form dished or receptacle-like product   |
| Y10T 156/1049 | . . . . . | Folding only  |
| Y10T 156/1051 | . . . . . | by folding  |
| Y10T 156/1052 | . . . . . | with cutting, punching, tearing or severing   |
| Y10T 156/1054 | . . . . . | and simultaneously bonding [e.g., cut-seaming]  |
| Y10T 156/1056 | . . . . . | Perforating lamina  |
| Y10T 156/1057 | . . . . . | Subsequent to assembly of laminae   |
| Y10T 156/1059 | . . . . . | Splitting sheet lamina in plane intermediate of faces   |
| Y10T 156/1061 | . . . . . | Spiral peeling  |
| Y10T 156/1062 | . . . . . | Prior to assembly   |
| Y10T 156/1064 | . . . . . | Partial cutting [e.g., grooving or incising]  |
| Y10T 156/1066 | . . . . . | Cutting to shape joining edge surfaces only   |
| Y10T 156/1067 | . . . . . | Continuous longitudinal slitting  |
| Y10T 156/1069 | . . . . . | Bonding face to face of laminae cut from single sheet   |
| Y10T 156/107  | . . . . . | Punching and bonding pressure application by punch  |
| Y10T 156/1072 | . . . . . | Closure cap liner applying type   |
| Y10T 156/1074 | . . . . . | Separate cutting of separate sheets or webs   |
| Y10T 156/1075 | . . . . . | of plural laminae from single stock and assembling to each other or to additional lamina                      |
| Y10T 156/1077 | . . . . . | Applying plural cut laminae to single face of additional lamina   |
| Y10T 156/1079 | . . . . . | Joining of cut laminae end-to-end   |
| Y10T 156/108  | . . . . . | Flash, trim or excess removal   |
| Y10T 156/1082 | . . . . . | Partial cutting bonded sandwich [e.g., grooving or incising]  |
| Y10T 156/1084 | . . . . . | of continuous or running length bonded web  |
| Y10T 156/1085 | . . . . . | One web only  |
| Y10T 156/1087 | . . . . . | Continuous longitudinal slitting  |
| Y10T 156/1089 | . . . . . | of discrete laminae to single face of additional lamina   |
| Y10T 156/109  | . . . . . | Embedding of laminae within face of additional laminae  |
| Y10T 156/1092 | . . . . . | All laminae planar and face to face   |
| Y10T 156/1093 | . . . . . | with covering of discrete laminae with additional lamina  |
| Y10T 156/1095 | . . . . . | Opposed laminae are running length webs   |
| Y10T 156/1097 | . . . . . | Lamina is running length web  |
| Y10T 156/1098 | . . . . . | Feeding of discrete laminae from separate sources   |
| Y10T 156/11   | . . . . . | Methods of delaminating, per se; i.e., separating at bonding face   |
| Y10T 156/1105 | . . . . . | Delaminating process responsive to feed or shape at delamination  |
| Y10T 156/1111 | . . . . . | Using solvent during delaminating [e.g., water dissolving adhesive at bonding face during delamination, etc.] |
| Y10T 156/1116 | . . . . . | Using specified organic delamination solvent  |
| Y10T 156/1121 | . . . . . | Using vibration during delaminating   |

- Y10T 156/1126 . . Using direct fluid current against work during delaminating
- Y10T 156/1132 . . . Using vacuum directly against work during delaminating
- Y10T 156/1137 . . . Using air blast directly against work during delaminating
- Y10T 156/1142 . . Changing dimension during delaminating [e.g., crushing, expanding, warping, etc.]
- Y10T 156/1147 . . . Using shrinking or swelling agent during delaminating
- Y10T 156/1153 . . Temperature change for delamination [e.g., heating during delaminating, etc.]
- Y10T 156/1158 . . . Electromagnetic radiation applied to work for delamination [e.g., microwave, uv, ir, etc.]
- Y10T 156/1163 . . . Sintering for delamination
- Y10T 156/1168 . . Gripping and pulling work apart during delaminating
- Y10T 156/1174 . . . Using roller for delamination [e.g., roller pairs operating at differing speeds or directions, etc.]
- Y10T 156/1179 . . . with poking during delaminating [e.g., jabbing, etc.]
- Y10T 156/1184 . . . . Piercing layer during delaminating [e.g., cutting, etc.]
- Y10T 156/1189 . . . with shearing during delaminating
- Y10T 156/1195 . . . Delaminating from release surface
- Y10T 156/12 . . Surface bonding means and/or assembly means with cutting, punching, piercing, severing or tearing
- Y10T 156/125 . . Plural severing means each acting on a different work piece
- Y10T 156/13 . . Severing followed by associating with part from same source
- Y10T 156/1304 . . Means making hole or aperture in part to be laminated
- Y10T 156/1309 . . . and securing separate part over hole or aperture
- Y10T 156/1313 . . Cutting element simultaneously bonds [e.g., cut seaming]
- Y10T 156/1317 . . Means feeding plural workpieces to be joined
- Y10T 156/1322 . . . Severing before bonding or assembling of parts
- Y10T 156/1326 . . . . Severing means or member secured thereto also bonds
- Y10T 156/133 . . . . Delivering cut part to indefinite or running length web
- Y10T 156/1335 . . . . . Cutter also delivers cut piece
- Y10T 156/1339 . . . . Delivering cut part in sequence to serially conveyed articles
- Y10T 156/1343 . . . Cutting indefinite length web after assembly with discrete article
- Y10T 156/1348 . . Work traversing type
- Y10T 156/1352 . . . with liquid applying means
- Y10T 156/1357 . . . . Slitting and severing
- Y10T 156/1361 . . . . Cutting after bonding
- Y10T 156/1365 . . . Fixed cutter
- Y10T 156/137 . . Stamp from multiple row sheet type
- Y10T 156/1374 . . with means projecting fluid against work
- Y10T 156/1378 . . Cutter actuated by or secured to bonding element
- Y10T 156/1383 . . . with liquid applicator



|               |   |
|---------------|---|
| Y10T 156/1387 | . . . . Common actuator for bonding and liquid applying means   |
| Y10T 156/1391 | . . . . . Liquid applied to web before cutting  |
| Y10T 156/1396 | . . . . . Roller applicator   |
| Y10T 156/14   | . Surface bonding means and/or assembly means with shaping, scarifying, or cleaning joining surface only                        |
| Y10T 156/15   | . Combined or convertible surface bonding means and/or assembly means   |
| Y10T 156/16   | . Surface bonding means and/or assembly means with bond interfering means [slip sheet, etc. ]                                   |
| Y10T 156/17   | . Surface bonding means and/or assembly means with work feeding or handling means   |
| Y10T 156/1702 | . . For plural parts or plural areas of single part   |
| Y10T 156/1705 | . . . Lamina transferred to base from adhered flexible web or sheet type carrier  |
| Y10T 156/1707 | . . . . Discrete spaced laminae on adhered carrier  |
| Y10T 156/171  | . . . . . Means serially presenting discrete base articles or separate portions of a single article                             |
| Y10T 156/1712 | . . . Indefinite or running length work   |
| Y10T 156/1715 | . . . . Means joining indefinite length work edge to edge   |
| Y10T 156/1717 | . . . . . Means applying adhesively secured tape to seam  |
| Y10T 156/172  | . . . . . Means applying fluid adhesive to work edge  |
| Y10T 156/1722 | . . . . Means applying fluent adhesive or adhesive activator material between layers  |
| Y10T 156/1724 | . . . . . At spaced areas   |
| Y10T 156/1727 | . . . . . Plural indefinite length or running length workpieces   |
| Y10T 156/1729 | . . . . . . Fluid applied to nip between indefinite length webs   |
| Y10T 156/1732 | . . . . . . Fluid applied to plural workpieces  |
| Y10T 156/1734 | . . . . Means bringing articles into association with web   |
| Y10T 156/1737 | . . . . Discontinuous, spaced area, and/or patterned pressing   |
| Y10T 156/1739 | . . . . Webs of different width, longitudinally aligned   |
| Y10T 156/1741 | . . . . Progressive continuous bonding press [e.g., roll couples]   |
| Y10T 156/1744 | . . . Means bringing discrete articles into assembled relationship  |
| Y10T 156/1746 | . . . . Plural lines and/or separate means assembling separate sandwiches   |
| Y10T 156/1749 | . . . . All articles from single source only  |
| Y10T 156/1751 | . . . . At least three articles   |
| Y10T 156/1754 | . . . . . At least two applied side by side to common base  |
| Y10T 156/1756 | . . . . . . Plural ranks  |
| Y10T 156/1759 | . . . . . . Sheet form common base  |
| Y10T 156/1761 | . . . . . Stacked serially  |
| Y10T 156/1763 | . . . . Magazine stack directly contacting separate work  |
| Y10T 156/1766 | . . . . . Magazine movable to work  |
| Y10T 156/1768 | . . . . Means simultaneously conveying plural articles from a single source and serially presenting them to an assembly station |

|               |   |
|---------------|---|
| Y10T 156/1771 | . . . . . Turret or rotary drum-type conveyor   |
| Y10T 156/1773 | . . . . . For flexible sheets   |
| Y10T 156/1776 | . . . . . Means separating articles from bulk source                                  |
| Y10T 156/1778 | . . . . . Stacked sheet source  |
| Y10T 156/178  | . . . . . Rotary or pivoted picker  |
| Y10T 156/1783 | . . . . . Translating picker  |
| Y10T 156/1785 | . . Magazine stack directly contacting work   |
| Y10T 156/1788 | . . Work traversing type and/or means applying work to wall or static structure       |
| Y10T 156/179  | . . . with liquid applying means  |
| Y10T 156/1793 | . . . Grip or clamp for web end   |
| Y10T 156/1795 | . . . Implement carried web supply  |
| Y10T 156/1798 | . . with liquid adhesive or adhesive activator applying means                         |
| Y10T 156/18   | . Surface bonding means and/or assembly means with handle or handgrip                 |
| Y10T 156/19   | . Delaminating means  |
| Y10T 156/1906 | . . Delaminating means responsive to feed or shape at delamination                    |
| Y10T 156/1911 | . . Heating or cooling delaminating means [e.g., melting means, freezing means, etc.] |
| Y10T 156/1917 | . . . Electromagnetic radiation delaminating means [e.g., microwave, uv, ir, etc.]    |
| Y10T 156/1922 | . . Vibrating delaminating means  |
| Y10T 156/1928 | . . Differential fluid pressure delaminating means                                    |
| Y10T 156/1933 | . . . Spraying delaminating means [e.g., atomizer, etc.]                              |
| Y10T 156/1939 | . . . . Air blasting delaminating means]  |
| Y10T 156/1944 | . . . Vacuum delaminating means [e.g., vacuum chamber, etc.]                          |
| Y10T 156/195  | . . Delaminating roller means   |
| Y10T 156/1956 | . . . Roller pair delaminating means  |
| Y10T 156/1961 | . . Severing delaminating means [e.g., chisel, etc.]                                  |
| Y10T 156/1967 | . . . Cutting delaminating means  |
| Y10T 156/1972 | . . . . Shearing delaminating means   |
| Y10T 156/1978 | . . Delaminating bending means  |
| Y10T 156/1983 | . . . Poking delaminating means   |
| Y10T 156/1989 | . . . Corner edge bending delaminating means  |
| Y10T 156/1994 | . . Means for delaminating from release surface                                       |

**Former US Class 225 series**

|                    |   |
|--------------------|---|
| <b>Y10T 225/00</b> | <b>Severing by tearing or breaking</b>    |
| Y10T 225/10        | . Methods                                 |
| Y10T 225/12        | . . With preliminary weakening            |
| Y10T 225/14        | . . Longitudinally of direction of feed   |
| Y10T 225/16        | . . Transversely of continuously fed work |

- Y10T 225/18 . . . Progressively to or from one side edge
- Y10T 225/20 . Severing by manually forcing against fixed edge
- Y10T 225/201 . . With other type severing means
- Y10T 225/202 . . With timer-released means for preventing work feed-out
- Y10T 225/203 . . Including means to effect bias cut
- Y10T 225/205 . . With feed-out of predetermined length from work supply
- Y10T 225/206 . . . Including means to select or adjust feed-out length
- Y10T 225/207 . . . Including feed-out stop for manually pulled work
- Y10T 225/208 . . . . Stop abuts work edge or work-mounted article
- Y10T 225/209 . . . . With feed-out of lead-end to aid initial grasping
- Y10T 225/21 . . . Merely to provide lead-end for manual grasping
- Y10T 225/211 . . . Manually operated feed-out mechanism
- Y10T 225/213 . . With indicator
- Y10T 225/214 . . . Indicates length to be severed from supply
- Y10T 225/215 . . With blade-edge guard
- Y10T 225/216 . . . Movable
- Y10T 225/217 . . Work stripped from blade by relatively movable means
- Y10T 225/218 . . . Including movable blade
- Y10T 225/22 . . With means to move work toward or into severing position
- Y10T 225/221 . . . With means to strip adhering work therefrom
- Y10T 225/222 . . With work-immobilizing paster surface
- Y10T 225/223 . . . With finger-access opening
- Y10T 225/224 . . With means to hold pad or stack of individual sheets
- Y10T 225/225 . . . With means to separate severed end of stub from supply package
- Y10T 225/226 . . . With changeable blade-edge contour
- Y10T 225/228 . . . . Slidable notcher
- Y10T 225/229 . . . Blade slidable along plane of work surface
- Y10T 225/23 . . Zigzag-folded supply package
- Y10T 225/231 . . Separate blades usable alternatively or sequentially on same work supply
- Y10T 225/232 . . Plural supply sources
- Y10T 225/233 . . . On turret-type support with single blade
- Y10T 225/234 . . . With movable blade registrable selectively with each source
- Y10T 225/236 . . . With plural blades
- Y10T 225/237 . . . . With individual blade for each source
- Y10T 225/238 . . With housing for work supply
- Y10T 225/239 . . . Liquid-, gas-, or light-tight work passage
- Y10T 225/24 . . . With inspection window or transparent panel
- Y10T 225/241 . . . With mounting means for housing
- Y10T 225/243 . . . Blade on pivoted closure for housing
- Y10T 225/244 . . . Sectional telescoping housing

|              |  |
|--------------|--|
| Y10T 225/245 | . . . . Including removable cap or sleeve enclosure for spooled work supply            |
| Y10T 225/246 | . . . Including special support for wound supply package                               |
| Y10T 225/247 | . . . . Bearing or trunnions to engage package core                                    |
| Y10T 225/248 | . . . Single blank container   |
| Y10T 225/249 | . . . . Blade unitary with container   |
| Y10T 225/251 | . . . . With closure fastener  |
| Y10T 225/252 | . . . With brake or tensioner  |
| Y10T 225/253 | . . . . Restricted or restrictable work outlet   |
| Y10T 225/254 | . . . With finger-access opening to facilitate work feed-out                           |
| Y10T 225/255 | . . . With internal guide  |
| Y10T 225/256 | . . Blade carrier bodily and slidably supported on running length work                 |
| Y10T 225/257 | . . Blade mounted on hand-held wound package   |
| Y10T 225/259 | . . . With lead-end stripper for tacky adhesive work                                   |
| Y10T 225/26  | . . . By resiliently embracing outer circumference of package                          |
| Y10T 225/261 | . . . Work supply nonrotatably wound on flanged spool                                  |
| Y10T 225/262 | . . . . Circumferentially movable blade radially retained by beaded or grooved flanges |
| Y10T 225/263 | . . . . Blade carrier supports hollow spool for rotation                               |
| Y10T 225/264 | . . . . Flange edge notched to provide or coact with cutter                            |
| Y10T 225/266 | . . . . With clamp for lead-end of strand-type work                                    |
| Y10T 225/267 | . . . . . Strand clamped against flange  |
| Y10T 225/268 | . . . By resiliently engaging package ends or interior of core                         |
| Y10T 225/269 | . . . Blade carrier supports package for rotation                                      |
| Y10T 225/27  | . . Movable blade continually biased toward wound web supply package                   |
| Y10T 225/271 | . . . Including temporary bias-disabling means   |
| Y10T 225/272 | . . . Including stripper to separate lead-end from package                             |
| Y10T 225/274 | . . . Weight of bodily movable package contributes to blade-biasing force              |
| Y10T 225/275 | . . . Blade slidably guided  |
| Y10T 225/276 | . . Blade movable to severing position by moving work                                  |
| Y10T 225/277 | . . . With simultaneous application of brake or clamp                                  |
| Y10T 225/278 | . . . . Applied to running length work   |
| Y10T 225/279 | . . . . . Opposed movable jaws   |
| Y10T 225/28  | . . Wound package bodily biased toward fixed blade                                     |
| Y10T 225/282 | . . With fixed blade and support for wound package                                     |
| Y10T 225/283 | . . . Body- or belt-attached   |
| Y10T 225/284 | . . . With brake applied to supply package   |
| Y10T 225/285 | . . . With guide spaced from blade edge to provide lead-end therebetween               |
| Y10T 225/286 | . . With work-abutment stop  |
| Y10T 225/287 | . . With brake or clamp  |
| Y10T 225/289 | . . . Thread cutter and clamp attachment for sewing machine presser foot               |

|              |   |
|--------------|---|
| Y10T 225/29  | . . . Applied to running length work                              |
| Y10T 225/291 | . . . . Spaced from blade edge to provide lead-end therebetween   |
| Y10T 225/292 | . . . . . Blade manually movable to expose lead-end               |
| Y10T 225/293 | . . . Manually applied, spring returned                           |
| Y10T 225/294 | . . With guide for running length work                            |
| Y10T 225/295 | . . Blade manually movable to or from severing position           |
| Y10T 225/297 | . . With means to facilitate lead-end grasping                    |
| Y10T 225/298 | . . Blades or severing devices                                    |
| Y10T 225/299 | . . . Adjustable blade-edge contour                               |
| Y10T 225/30  | . Breaking or tearing apparatus                                   |
| Y10T 225/304 | . . Including means to apply thermal shock to work                |
| Y10T 225/307 | . . Combined with preliminary weakener or with nonbreaking cutter |
| Y10T 225/314 | . . . Successively actuated sharp and dull tools                  |
| Y10T 225/321 | . . . Preliminary weakener  |
| Y10T 225/325 | . . . . With means to apply moment of force to weakened work      |
| Y10T 225/329 | . . Plural breakers   |
| Y10T 225/336 | . . Conveyor diverter for moving work                             |
| Y10T 225/343 | . . . Plural divergent work paths                                 |
| Y10T 225/35  | . . Work-parting pullers [burstors]                               |
| Y10T 225/357 | . . . Relatively movable clamps                                   |
| Y10T 225/364 | . . Axial twistors  |
| Y10T 225/371 | . . Movable breaking tool   |
| Y10T 225/379 | . . . Breaking tool intermediate spaced work supports             |
| Y10T 225/386 | . . . . Clamping supports   |
| Y10T 225/393 | . . Web restrainer  |

### **Former US Class 279 Series**

|                    |   |
|--------------------|---|
| <b>Y10T 279/00</b> | <b>Chucks or sockets</b>                              |
| Y10T 279/10        | . Expanding   |
| Y10T 279/1004      | . . Collet type                                       |
| Y10T 279/1008      | . . . Fixed jaws and moving cam                       |
| Y10T 279/1012      | . . . Fixed cam and moving jaws                       |
| Y10T 279/1016      | . . Jaws mounted on flexible member; i.e., diaphragm  |
| Y10T 279/1021      | . . Fluid-pressure actuator                           |
| Y10T 279/1024      | . . . Directly expanding jaws                         |
| Y10T 279/1029      | . . . . Jaw is expansible chamber; i.e., bladder type |
| Y10T 279/1033      | . . . Expanding jaws via mechanical connection        |
| Y10T 279/1037      | . . Axially moving actuator                           |
| Y10T 279/1041      | . . . Wedge   |

|                |  |
|----------------|--|
| Y10T 279/1045  | . . . . Internal cone  |
| Y10T 279/1049  | . . . . with jaw positively interlocked with wedge; e.g., dovetail or T-slot |
| Y10T 279/1054  | . . . . with resilient means contacting nonresilient jaw                     |
| Y10T 279/1058  | . . . . . Constricting band, annulus, or clip                                |
| Y10T 279/1062  | . . . Toggle   |
| Y10T 279/1066  | . . . Axially compressible element expands radially                          |
| Y10T 279/1071  | . . . Lever  |
| Y10T 279/1074  | . . Rotary actuator  |
| Y10T 279/1079  | . . . Clutch or self-actuating type  |
| Y10T 279/1083  | . . Jaw structure  |
| Y10T 279/1087  | . . . Resilient  |
| Y10T 279/1091  | . . . Ball or roller   |
| Y10T 279/1095  | . . . Pivoted  |
| Y10T 279/11    | . Vacuum   |
| Y10T 279/12    | . with fluid-pressure actuator   |
| Y10T 279/1208  | . . with measuring, indicating or control means                              |
| Y10T 279/1216  | . . Jaw is expansible chamber; i.e., bladder type                            |
| Y10T 279/1224  | . . Pneumatic type   |
| Y10T 279/1233  | . . Jaws mounted on flexible member; i.e., diaphragm                         |
| Y10T 279/1241  | . . Socket type  |
| Y10T 279/1249  | . . . Collet   |
| Y10T 279/1258  | . . . . Fixed cam and moving jaws  |
| Y10T 279/1266  | . . . . Moving cam and fixed jaws  |
| Y10T 279/1274  | . . Radially reciprocating jaws  |
| Y10T 279/1283  | . . . Fluid pressure directly moves jaws                                     |
| Y10T 279/1291  | . . . Fluid pressure moves jaws via mechanical connection                    |
| Y10T 279/13    | . Angularly adjustable or indexing   |
| Y10T 279/14    | . Eccentric  |
| Y10T 279/15    | . Threaded grip  |
| Y10T 279/16    | . Longitudinal screw clamp   |
| Y10T 279/17    | . Socket type  |
| Y10T 279/17008 | . . Multiple alternative   |
| Y10T 279/17017 | . . Self-centering of floating   |
| Y10T 279/17025 | . . . Radially reciprocating jaws  |
| Y10T 279/17034 | . . . Transverse holder and setscrew   |
| Y10T 279/17042 | . . Lost motion  |
| Y10T 279/17051 | . . . Swinging external yoke or detent                                       |
| Y10T 279/17059 | . . . . Rotary socket  |
| Y10T 279/17068 | . . . Rotary socket  |
| Y10T 279/17076 | . . . Spreading elements   |

|                |           |   |
|----------------|-----------|---|
| Y10T 279/17085 | . . .     | Key retainer  |
| Y10T 279/17094 | . . .     | Sleeve type retainer                                    |
| Y10T 279/17102 | . . . .   | Sleeve in socket  |
| Y10T 279/17111 | . .       | Fluid-conduit drill holding                             |
| Y10T 279/17119 | . .       | Feed type   |
| Y10T 279/17128 | . .       | Self-grasping   |
| Y10T 279/17136 | . . .     | Yielding grasping jaws                                  |
| Y10T 279/17145 | . . . .   | Ball or roller  |
| Y10T 279/17153 | . . . .   | Spring jaws   |
| Y10T 279/17162 | . . .     | Yielding detent   |
| Y10T 279/17171 | . . .     | One-way-clutch type                                     |
| Y10T 279/17179 | . . . .   | Wedge   |
| Y10T 279/17188 | . . . .   | Side detent   |
| Y10T 279/17196 | . . . . . | Ball or roller  |
| Y10T 279/17205 | . .       | Conical clamp threaded in socket                        |
| Y10T 279/17213 | . .       | Transversely oscillating jaws                           |
| Y10T 279/17222 | . . .     | Screw actuated  |
| Y10T 279/17231 | . .       | Pivoted jaws  |
| Y10T 279/17239 | . . .     | Moving-cam actuator                                     |
| Y10T 279/17247 | . . . .   | Threaded cam sleeve                                     |
| Y10T 279/17256 | . . . .   | Reciprocating cam sleeve                                |
| Y10T 279/17264 | . . .     | Fixed cam and moving jaws                               |
| Y10T 279/17273 | . . . .   | Axial screw actuator                                    |
| Y10T 279/17282 | . . . .   | Threaded-sleeve actuator                                |
| Y10T 279/17291 | . .       | Resilient split socket                                  |
| Y10T 279/17299 | . . .     | Threaded cam sleeve                                     |
| Y10T 279/17307 | . . .     | Reciprocating cam sleeve                                |
| Y10T 279/17316 | . . .     | Unitary   |
| Y10T 279/17324 | . . . .   | Split at one end only                                   |
| Y10T 279/17333 | . . . . . | Transverse screw actuator                               |
| Y10T 279/17341 | . . . . . | Cam actuator  |
| Y10T 279/17351 | . . . .   | Split end to end  |
| Y10T 279/17358 | . . . .   | with jaw pads or insert                                 |
| Y10T 279/17367 | . . .     | Nonresilient member biased by a resilient member        |
| Y10T 279/17376 | . . .     | Resilient member reinforced by another resilient member |
| Y10T 279/17384 | . .       | with means to exclude contaminants; e.g., seal, shield  |
| Y10T 279/17393 | . .       | One movable side  |
| Y10T 279/17401 | . . .     | Sleeved   |
| Y10T 279/17411 | . .       | Spring biased jaws                                      |
| Y10T 279/17418 | . . .     | Unitary   |

|                |           |   |
|----------------|-----------|---|
| Y10T 279/17427 | . . . .   | Split at one end only                                   |
| Y10T 279/17435 | . . . .   | Split at both ends                                      |
| Y10T 279/17444 | . . . .   | Split end to end  |
| Y10T 279/17452 | . . . .   | with jaw pads or insert                                 |
| Y10T 279/17461 | . . .     | Nonresilient member biased by a resilient member        |
| Y10T 279/17471 | . . .     | Resilient member reinforced by another resilient member |
| Y10T 279/17478 | . . .     | with means to exclude contaminants; e.g., seal, shield  |
| Y10T 279/17487 | . . .     | Moving-cam actuator                                     |
| Y10T 279/17495 | . . . .   | Threaded sleeve and wedge                               |
| Y10T 279/17504 | . . . .   | Threaded cam sleeve                                     |
| Y10T 279/17512 | . . . . . | Loose jaws  |
| Y10T 279/17521 | . . . .   | Reciprocating cam sleeve                                |
| Y10T 279/17529 | . . .     | Fixed cam and moving jaws                               |
| Y10T 279/17538 | . . . .   | Threaded-sleeve actuator                                |
| Y10T 279/17547 | . . . .   | Axial screw actuator                                    |
| Y10T 279/17555 | . . .     | Loose jaws  |
| Y10T 279/17564 | . .       | Loose jaws  |
| Y10T 279/17572 | . . .     | Moving-cam actuator                                     |
| Y10T 279/17581 | . . . .   | Threaded cam sleeve                                     |
| Y10T 279/17589 | . . . .   | Reciprocating cam sleeve                                |
| Y10T 279/17598 | . . .     | Fixed cam and moving jaws                               |
| Y10T 279/17606 | . . . .   | Threaded sleeve and body                                |
| Y10T 279/17615 | . .       | Obliquely guided reciprocating jaws                     |
| Y10T 279/17623 | . . .     | Threaded sleeve and jaw                                 |
| Y10T 279/17632 | . . . .   | Conical sleeve  |
| Y10T 279/17641 | . . .     | Threaded central cone and jaw                           |
| Y10T 279/17649 | . . .     | Threaded sleeve and body                                |
| Y10T 279/17658 | . . .     | Reciprocating jaw advancing sleeve                      |
| Y10T 279/17666 | . .       | Radially reciprocating jaws                             |
| Y10T 279/17675 | . . .     | Transverse-screw actuated                               |
| Y10T 279/17683 | . . . .   | Interlaced jaws   |
| Y10T 279/17692 | . . .     | Moving-cam actuator                                     |
| Y10T 279/17701 | . . . .   | Threaded cam sleeve                                     |
| Y10T 279/17709 | . . . .   | Threaded sleeve and wedge                               |
| Y10T 279/17717 | . . . .   | Rotary eccentric-cam sleeve                             |
| Y10T 279/17726 | . . . . . | Roller and rocking jaw                                  |
| Y10T 279/17735 | . . . . . | Worm actuated   |
| Y10T 279/17743 | . . . .   | Reciprocating cam sleeve                                |
| Y10T 279/17752 | . . . . . | Ball or roller jaws                                     |
| Y10T 279/17761 | . .       | Side detent   |



|                |         |                               |
|----------------|---------|-------------------------------|
| Y10T 279/17769 | . . .   | Pivoted or rotary             |
| Y10T 279/17777 | . . . . | Sleeved                       |
| Y10T 279/17786 | . . .   | Spring                        |
| Y10T 279/17794 | . . . . | Sleeved                       |
| Y10T 279/17803 | . . .   | Rotary cam sleeve             |
| Y10T 279/17811 | . . .   | Reciprocating sleeve          |
| Y10T 279/17821 | . . .   | Set screw                     |
| Y10T 279/17829 | . . .   | U-clamp                       |
| Y10T 279/17837 | . . .   | Plural bolt                   |
| Y10T 279/17846 | . . .   | Single transverse bolt        |
| Y10T 279/17854 | . . .   | Longitudinal clamping wedge   |
| Y10T 279/17863 | . .     | Shouldered-tang holding       |
| Y10T 279/17871 | . . .   | Cap                           |
| Y10T 279/17881 | . . . . | Screw                         |
| Y10T 279/17888 | . .     | Tang offset within socket     |
| Y10T 279/17897 | . .     | Tang offset without socket    |
| Y10T 279/17905 | . .     | Bottomless                    |
| Y10T 279/17914 | . . .   | Friction grip                 |
| Y10T 279/17923 | . .     | Transverse pin                |
| Y10T 279/17931 | . .     | Screw threaded                |
| Y10T 279/17941 | . . .   | Nut lock                      |
| Y10T 279/17948 | . . . . | Threaded sleeve               |
| Y10T 279/17957 | . .     | Friction grip                 |
| Y10T 279/17965 | . . .   | Drill type                    |
| Y10T 279/17974 | . .     | Barbed or pronged tang        |
| Y10T 279/17982 | . .     | Molded or cast-in tang        |
| Y10T 279/17991 | . .     | Adjustable length or size     |
| Y10T 279/18    | . .     | Pivoted jaw                   |
| Y10T 279/182   | . .     | Cam-sleeve actuated           |
| Y10T 279/185   | . .     | Internal-cone actuated        |
| Y10T 279/188   | . .     | Toggle actuated               |
| Y10T 279/19    | . .     | Radially reciprocating jaws   |
| Y10T 279/1906  | . .     | with indicator                |
| Y10T 279/1913  | . .     | Transverse-screw actuated     |
| Y10T 279/1921  | . . .   | Annular rack                  |
| Y10T 279/1926  | . .     | Spiral cam or scroll actuated |
| Y10T 279/1933  | . . .   | Worm                          |
| Y10T 279/1941  | . . .   | Bevel pinion                  |
| Y10T 279/1946  | . .     | Rack-and-pinion actuated      |
| Y10T 279/1953  | . .     | Toggle actuated               |

- Y10T 279/1961
  - . . Lever actuated
- Y10T 279/1966
  - . . . Internal cone
- Y10T 279/1973
  - . . Wedge actuated
- Y10T 279/1981
  - . . External-cone actuated
- Y10T 279/1986
  - . . Jaws
- Y10T 279/1993
  - . . . with means to facilitate jaw removal
- Y10T 279/20
  - . with safety feature
- Y10T 279/21
  - . with measuring, indicating or control means
- Y10T 279/22
  - . Double acting
- Y10T 279/23
  - . with magnetic or electrostatic means
- Y10T 279/24
  - . by centrifugal force
- Y10T 279/243
  - . . to counterbalance jaws
- Y10T 279/247
  - . . to grip tool or workpiece
- Y10T 279/25
  - . Compensation for eccentricity
- Y10T 279/26
  - . with centering means
- Y10T 279/27
  - . Separate chuck-actuating power source
- Y10T 279/275
  - . . Self-contained
- Y10T 279/28
  - . for gear or spline molding
- Y10T 279/29
  - . More than one set of gripping means
- Y10T 279/30
  - . Torsion mandrel
- Y10T 279/31
  - . Jaws mounted on flexible member; i.e. , diaphragm
- Y10T 279/32
  - . Means to prevent jaw loosening
- Y10T 279/33
  - . Member applies axial force component
- Y10T 279/34
  - . Accessory or component
- Y10T 279/3406
  - . . Adapter
- Y10T 279/3412
  - . . . Drive conversion
- Y10T 279/3418
  - . . . for particular tool or workpiece
- Y10T 279/3425
  - . . Sliding cam chuck actuator
- Y10T 279/3431
  - . . Chuck key
- Y10T 279/3437
  - . . . Safety feature; e.g., ejector, interlock
- Y10T 279/3443
  - . . . Key holding or attaching means
- Y10T 279/3451
  - . . . Nonseparable or built-in
- Y10T 279/3456
  - . . Padded or cushioned jaw
- Y10T 279/3462
  - . . Jaw insert
- Y10T 279/3468
  - . . . Machinable jaw
- Y10T 279/3475
  - . . . . Locking or positioning means
- Y10T 279/3481
  - . . Tool or workpiece ejector
- Y10T 279/3487
  - . . Tool or work stop or locator
- Y10T 279/3493
  - . . Protection means; e.g., cover, seal, overstress prevention, air blast
- Y10T 279/35
  - . Miscellaneous

**Former US Class 292 series****Y10T 292/00****Closure fasteners**

|               |                                      |
|---------------|--------------------------------------|
| Y10T 292/03   | . Miscellaneous                      |
| Y10T 292/06   | . Adjustable backset                 |
| Y10T 292/08   | . Bolts                              |
| Y10T 292/0801 | . . Multiple                         |
| Y10T 292/0802 | . . . Sliding and rotary             |
| Y10T 292/0803 | . . . Sliding and swinging           |
| Y10T 292/0805 | . . . . Combined motion              |
| Y10T 292/0806 | . . . . . Lever-operating means      |
| Y10T 292/0807 | . . . Sliding and hooked end         |
| Y10T 292/0808 | . . . Sliding and roller             |
| Y10T 292/0809 | . . . Sliding and spring arm         |
| Y10T 292/081  | . . . Swinging and hooked end        |
| Y10T 292/0811 | . . . Swinging and roller            |
| Y10T 292/0813 | . . . Swinging and spring arm        |
| Y10T 292/0814 | . . . Double acting                  |
| Y10T 292/0815 | . . . . Roller                       |
| Y10T 292/0816 | . . . . Sliding                      |
| Y10T 292/0817 | . . . . Spring arm                   |
| Y10T 292/0818 | . . . . Swinging                     |
| Y10T 292/082  | . . . Spring arm                     |
| Y10T 292/0821 | . . . . Combined motion              |
| Y10T 292/0822 | . . . Emergency operating means      |
| Y10T 292/0823 | . . . Gear                           |
| Y10T 292/0824 | . . . Roller                         |
| Y10T 292/0825 | . . . Hooked end                     |
| Y10T 292/0826 | . . . . Operating means              |
| Y10T 292/0828 | . . . . . Link and lever             |
| Y10T 292/0829 | . . . . . Cam                        |
| Y10T 292/083  | . . . . . Flexible                   |
| Y10T 292/0831 | . . . . . Lever                      |
| Y10T 292/0832 | . . . . . Push or pull rod           |
| Y10T 292/0833 | . . . . . Rigid                      |
| Y10T 292/0834 | . . . Sliding                        |
| Y10T 292/0836 | . . . . Operating means              |
| Y10T 292/0837 | . . . . . Cam and lever              |
| Y10T 292/0838 | . . . . . Lever and push or pull rod |

|               |           |   |
|---------------|-----------|---|
| Y10T 292/0839 | . . . . . | Link and lever                              |
| Y10T 292/084  | . . . . . | Cam   |
| Y10T 292/0841 | . . . . . | Flexible                                    |
| Y10T 292/0843 | . . . . . | Gear  |
| Y10T 292/0844 | . . . . . | Lever                                       |
| Y10T 292/0845 | . . . . . | Push or pull rod                            |
| Y10T 292/0846 | . . . . . | Rigid                                       |
| Y10T 292/0847 | . . . . . | Screw                                       |
| Y10T 292/0848 | . . .     | Swinging                                    |
| Y10T 292/0849 | . . . . . | Operating means                             |
| Y10T 292/0851 | . . . . . | Cam and lever                               |
| Y10T 292/0852 | . . . . . | Link and cam                                |
| Y10T 292/0853 | . . . . . | Link and lever                              |
| Y10T 292/0854 | . . . . . | Cam   |
| Y10T 292/0855 | . . . . . | Flexible                                    |
| Y10T 292/0856 | . . . . . | Gear  |
| Y10T 292/0857 | . . . . . | Lever                                       |
| Y10T 292/0859 | . . . . . | Push or pull rod                            |
| Y10T 292/086  | . . . . . | Rigid                                       |
| Y10T 292/0861 | . . . . . | Screw                                       |
| Y10T 292/0862 | . .       | Swinging and hooked end, multiple head      |
| Y10T 292/0863 | . .       | Sliding and rotary                          |
| Y10T 292/0864 | . . .     | Combined motion                             |
| Y10T 292/0866 | . . .     | Multiple head                               |
| Y10T 292/0867 | . . .     | Spring projected                            |
| Y10T 292/0868 | . . . . . | Combined motion                             |
| Y10T 292/0869 | . . .     | Spring retracted                            |
| Y10T 292/087  | . .       | Loops                                       |
| Y10T 292/0871 | . . .     | Sliding and swinging, lever-operating means |
| Y10T 292/0872 | . . .     | Sliding catch                               |
| Y10T 292/0874 | . . .     | Spring-arm catch                            |
| Y10T 292/0875 | . . .     | Swinging catch                              |
| Y10T 292/0876 | . .       | Double acting                               |
| Y10T 292/0877 | . . .     | Sliding and swinging                        |
| Y10T 292/0878 | . . .     | Sliding                                     |
| Y10T 292/0879 | . . . . . | Roller                                      |
| Y10T 292/088  | . . .     | Spring arm                                  |
| Y10T 292/0882 | . . . . . | Roller                                      |
| Y10T 292/0883 | . . .     | Swinging                                    |
| Y10T 292/0884 | . . . . . | Roller                                      |

|               |           |                           |
|---------------|-----------|---------------------------|
| Y10T 292/0885 | . . .     | Roller                    |
| Y10T 292/0886 | . .       | Sliding and swinging      |
| Y10T 292/0887 | . . .     | Operating means           |
| Y10T 292/0889 | . . . .   | Cam                       |
| Y10T 292/089  | . . . .   | Lever                     |
| Y10T 292/0891 | . . . .   | Rigid                     |
| Y10T 292/0892 | . . .     | Multiple head             |
| Y10T 292/0893 | . . .     | Spring retracted          |
| Y10T 292/0894 | . .       | Spring arm                |
| Y10T 292/0895 | . . .     | Operating means           |
| Y10T 292/0897 | . . . .   | Link and lever            |
| Y10T 292/0898 | . . . .   | Cam                       |
| Y10T 292/0899 | . . . .   | Flexible                  |
| Y10T 292/09   | . . . .   | Lever                     |
| Y10T 292/0901 | . . . .   | Push or pull rod          |
| Y10T 292/0902 | . . . .   | Rigid                     |
| Y10T 292/0903 | . . . . . | Seal catch                |
| Y10T 292/0905 | . . . . . | Swinging catch            |
| Y10T 292/0906 | . . . .   | Screw                     |
| Y10T 292/0907 | . . .     | Multiple head             |
| Y10T 292/0908 | . .       | Emergency operating means |
| Y10T 292/0909 | . . .     | Panel                     |
| Y10T 292/091  | . . .     | Platform                  |
| Y10T 292/0911 | . .       | Hooked end                |
| Y10T 292/0913 | . . .     | Sliding and swinging      |
| Y10T 292/0914 | . . . .   | Operating means           |
| Y10T 292/0915 | . . . . . | Cam                       |
| Y10T 292/0916 | . . . . . | Gear                      |
| Y10T 292/0917 | . . . . . | Lever                     |
| Y10T 292/0918 | . . . . . | Rigid                     |
| Y10T 292/092  | . . . . . | Screw                     |
| Y10T 292/0921 | . . .     | Multiple head             |
| Y10T 292/0922 | . . . .   | Operating means           |
| Y10T 292/0923 | . . . . . | Lever                     |
| Y10T 292/0924 | . . . . . | Push or pull rod          |
| Y10T 292/0925 | . . . . . | Rigid                     |
| Y10T 292/0926 | . . .     | Spring projected          |
| Y10T 292/0928 | . . . .   | Operating means           |
| Y10T 292/0929 | . . . . . | Link and lever            |
| Y10T 292/093  | . . . . . | Cam                       |

|               |           |                            |
|---------------|-----------|----------------------------|
| Y10T 292/0931 | . . . . . | Flexible                   |
| Y10T 292/0932 | . . . . . | Lever                      |
| Y10T 292/0933 | . . . . . | Push or pull rod           |
| Y10T 292/0934 | . . . . . | Rigid                      |
| Y10T 292/0936 | . . . . . | Spring retracted           |
| Y10T 292/0937 | . . . . . | Gravity actuated           |
| Y10T 292/0938 | . . . . . | Operating means            |
| Y10T 292/0939 | . . . . . | Cam                        |
| Y10T 292/094  | . . . . . | Flexible                   |
| Y10T 292/0941 | . . . . . | Lever                      |
| Y10T 292/0943 | . . . . . | Push or pull rod           |
| Y10T 292/0944 | . . . . . | Rigid                      |
| Y10T 292/0945 | . . . . . | Operating means            |
| Y10T 292/0946 | . . . . . | Link and lever             |
| Y10T 292/0947 | . . . . . | Cam                        |
| Y10T 292/0948 | . . . . . | Closure                    |
| Y10T 292/0949 | . . . . . | Lever                      |
| Y10T 292/0951 | . . . . . | Rigid                      |
| Y10T 292/0952 | . . . . . | Closure catch              |
| Y10T 292/0953 | . . . . . | Friction catch             |
| Y10T 292/0954 | . . . . . | Padlock or seal catch      |
| Y10T 292/0955 | . . . . . | Screw catch                |
| Y10T 292/0956 | . . . . . | Sliding catch              |
| Y10T 292/0957 | . . . . . | Spring-arm catch           |
| Y10T 292/0959 | . . . . . | Swinging catch             |
| Y10T 292/096  | . . . . . | Sliding                    |
| Y10T 292/0961 | . . . . . | Multiple head              |
| Y10T 292/0962 | . . . . . | Operating means            |
| Y10T 292/0963 | . . . . . | Link and lever             |
| Y10T 292/0964 | . . . . . | Cam                        |
| Y10T 292/0966 | . . . . . | Gear                       |
| Y10T 292/0967 | . . . . . | Lever                      |
| Y10T 292/0968 | . . . . . | Rigid                      |
| Y10T 292/0969 | . . . . . | Spring projected           |
| Y10T 292/097  | . . . . . | Operating means            |
| Y10T 292/0971 | . . . . . | Cam and lever              |
| Y10T 292/0972 | . . . . . | Lever and push or pull rod |
| Y10T 292/0974 | . . . . . | Link and lever             |
| Y10T 292/0975 | . . . . . | Link and push or pull rod  |
| Y10T 292/0976 | . . . . . | Sliding cam                |

|               |           |  |
|---------------|-----------|--|
| Y10T 292/0977 | . . . . . | Cam  |
| Y10T 292/0978 | . . . . . | Specifically related to vehicle closure                      |
| Y10T 292/0979 | . . . . . | Bolt disabled by contraretractive movement of inside handle  |
| Y10T 292/098  | . . . . . | Auxiliary bolt   |
| Y10T 292/0982 | . . . . . | Bolt blocking or disabling means                             |
| Y10T 292/0983 | . . . . . | Involves rollback  |
| Y10T 292/0984 | . . . . . | Rollback members located on separate spindles                |
| Y10T 292/0985 | . . . . . | Discrete pivotable or rotatable actuator                     |
| Y10T 292/0986 | . . . . . | Discrete push or pull actuator                               |
| Y10T 292/0987 | . . . . . | Bolt has ancillary projection spring                         |
| Y10T 292/0989 | . . . . . | Plural rollback elements directionally selectively effective |
| Y10T 292/099  | . . . . . | On separate spindles   |
| Y10T 292/0991 | . . . . . | On a tubular member  |
| Y10T 292/0992 | . . . . . | Flexible   |
| Y10T 292/0993 | . . . . . | Gear   |
| Y10T 292/0994 | . . . . . | Lever  |
| Y10T 292/0995 | . . . . . | Push or pull rod   |
| Y10T 292/0997 | . . . . . | Rigid  |
| Y10T 292/0998 | . . . . . | Screw  |
| Y10T 292/0999 | . . . . . | Spring retracted   |
| Y10T 292/10   | . . . . . | Friction catch   |
| Y10T 292/1001 | . . . . . | Sliding catch  |
| Y10T 292/1002 | . . . . . | Spring-arm catch   |
| Y10T 292/1003 | . . . . . | Swinging catch   |
| Y10T 292/1005 | . . . . . | Cam-operating means  |
| Y10T 292/1006 | . . . . . | Gravity actuated   |
| Y10T 292/1007 | . . . . . | Operating means  |
| Y10T 292/1008 | . . . . . | Cam and lever  |
| Y10T 292/1009 | . . . . . | Link and lever   |
| Y10T 292/101  | . . . . . | Cam  |
| Y10T 292/1011 | . . . . . | Lever  |
| Y10T 292/1013 | . . . . . | Rigid  |
| Y10T 292/1014 | . . . . . | Operating means  |
| Y10T 292/1015 | . . . . . | Link and lever   |
| Y10T 292/1016 | . . . . . | Cam  |
| Y10T 292/1017 | . . . . . | Flexible   |
| Y10T 292/1018 | . . . . . | Gear   |
| Y10T 292/102  | . . . . . | Lever  |
| Y10T 292/1021 | . . . . . | Motor  |
| Y10T 292/1022 | . . . . . | Rigid  |

|                |           |                            |
|----------------|-----------|----------------------------|
| Y10T 292/1023  | . . . . . | Closure catch              |
| Y10T 292/1024  | . . . . . | Friction catch             |
| Y10T 292/1025  | . . . . . | Padlock or seal catch      |
| Y10T 292/1026  | . . . . . | Screw catch                |
| Y10T 292/1028  | . . . . . | Sliding catch              |
| Y10T 292/1029  | . . . . . | Seal                       |
| Y10T 292/103   | . . . . . | Spring-arm catch           |
| Y10T 292/1031  | . . . . . | Swinging catch             |
| Y10T 292/1032  | . . . . . | Seal                       |
| Y10T 292/1033  | . . . . . | Screw                      |
| Y10T 292/1034  | . . . . . | Curved                     |
| Y10T 292/1036  | . . . . . | End lever                  |
| Y10T 292/1037  | . . . . . | Pivoted end                |
| Y10T 292/1038  | . . . . . | Roller                     |
| Y10T 292/1039  | . . . . . | Swinging and camming       |
| Y10T 292/10395 | . . . . . | Spring projected           |
| Y10T 292/104   | . . . . . | Rigid operating means      |
| Y10T 292/1041  | . . . . . | Rigid operating means      |
| Y10T 292/1043  | . . . . . | Swinging                   |
| Y10T 292/1044  | . . . . . | Multiple head              |
| Y10T 292/1045  | . . . . . | Operating means            |
| Y10T 292/1046  | . . . . . | Cam                        |
| Y10T 292/1047  | . . . . . | Closure                    |
| Y10T 292/1048  | . . . . . | Lever                      |
| Y10T 292/1049  | . . . . . | Rigid                      |
| Y10T 292/1051  | . . . . . | Spring projected           |
| Y10T 292/1052  | . . . . . | Operating means            |
| Y10T 292/1053  | . . . . . | Lever and push or pull rod |
| Y10T 292/1054  | . . . . . | Link and cam               |
| Y10T 292/1055  | . . . . . | Link and lever             |
| Y10T 292/1056  | . . . . . | Cam                        |
| Y10T 292/1057  | . . . . . | Flexible                   |
| Y10T 292/1059  | . . . . . | Lever                      |
| Y10T 292/106   | . . . . . | Push or pull rod           |
| Y10T 292/1061  | . . . . . | Rigid                      |
| Y10T 292/1062  | . . . . . | Spring retracted           |
| Y10T 292/1063  | . . . . . | Gravity actuated           |
| Y10T 292/1064  | . . . . . | Operating means            |
| Y10T 292/1066  | . . . . . | Cam and lever              |
| Y10T 292/1067  | . . . . . | Link and lever             |



|               |           |                                     |
|---------------|-----------|-------------------------------------|
| Y10T 292/1068 | . . . . . | Cam                                 |
| Y10T 292/1069 | . . . . . | Flexible                            |
| Y10T 292/107  | . . . . . | Lever                               |
| Y10T 292/1071 | . . . . . | Push or pull rod                    |
| Y10T 292/1072 | . . . . . | Rigid                               |
| Y10T 292/1074 | . . . . . | Roller                              |
| Y10T 292/1075 | . . . . . | Operating means                     |
| Y10T 292/1076 | . . . . . | Link and lever                      |
| Y10T 292/1077 | . . . . . | Cam                                 |
| Y10T 292/1078 | . . . . . | Closure                             |
| Y10T 292/1079 | . . . . . | Gear                                |
| Y10T 292/108  | . . . . . | Lever                               |
| Y10T 292/1082 | . . . . . | Motor                               |
| Y10T 292/1083 | . . . . . | Rigid                               |
| Y10T 292/1084 | . . . . . | Closure catch                       |
| Y10T 292/1085 | . . . . . | Friction catch                      |
| Y10T 292/1086 | . . . . . | Padlock or seal catch               |
| Y10T 292/1087 | . . . . . | Screw catch                         |
| Y10T 292/1089 | . . . . . | Sliding catch                       |
| Y10T 292/109  | . . . . . | Seal                                |
| Y10T 292/1091 | . . . . . | Spring-arm catch                    |
| Y10T 292/1092 | . . . . . | Swinging catch                      |
| Y10T 292/1093 | . . . . . | Seal                                |
| Y10T 292/1094 | . . . . . | Screw                               |
| Y10T 292/1095 | . . . . . | Seal-rupturing devices              |
| Y10T 292/1097 | . . . . . | Reversible                          |
| Y10T 292/1098 | . . . . . | Cam and lever operating means       |
| Y10T 292/1099 | . . . . . | Screw                               |
| Y10T 292/11   | . . . . . | Magnetic                            |
| Y10T 292/14   | . . . . . | Ball                                |
| Y10T 292/17   | . . . . . | Bendable securers                   |
| Y10T 292/175  | . . . . . | Bolt releasers                      |
| Y10T 292/18   | . . . . . | Free-end-engaging means             |
| Y10T 292/19   | . . . . . | Foot operated                       |
| Y10T 292/20   | . . . . . | Clamps                              |
| Y10T 292/202  | . . . . . | Hatch fastener                      |
| Y10T 292/205  | . . . . . | Ring                                |
| Y10T 292/207  | . . . . . | Permanently deformed                |
| Y10T 292/209  | . . . . . | Resilient wedge                     |
| Y10T 292/212  | . . . . . | With expanding or contracting means |

|               |                               |
|---------------|-------------------------------|
| Y10T 292/214  | . . . . Screw                 |
| Y10T 292/216  | . . . . Toggle lever          |
| Y10T 292/218  | . . Screw against closure     |
| Y10T 292/221  | . . Screw and nut             |
| Y10T 292/223  | . . . Swingable               |
| Y10T 292/225  | . . Cam-operating means       |
| Y10T 292/228  | . . Portable                  |
| Y10T 292/23   | . Cross bars                  |
| Y10T 292/237  | . . Screw-operating means     |
| Y10T 292/243  | . . Vehicle door latches      |
| Y10T 292/25   | . Cylinder                    |
| Y10T 292/28   | . Extension link              |
| Y10T 292/282  | . . Multiple                  |
| Y10T 292/283  | . . Chain                     |
| Y10T 292/285  | . . Notched bar               |
| Y10T 292/286  | . . . Sliding catch           |
| Y10T 292/288  | . . . Swinging catch          |
| Y10T 292/289  | . . Slotted bar               |
| Y10T 292/291  | . . . Sliding catch           |
| Y10T 292/293  | . . . Swinging catch          |
| Y10T 292/2935 | . . Slotted or notched keeper |
| Y10T 292/294  | . . . Sliding catch           |
| Y10T 292/296  | . . . Swinging catch          |
| Y10T 292/297  | . . Notched keeper            |
| Y10T 292/299  | . . Slotted keeper            |
| Y10T 292/301  | . . Friction catch            |
| Y10T 292/302  | . . Screw catch               |
| Y10T 292/304  | . . Sliding catch             |
| Y10T 292/305  | . . Swinging catch            |
| Y10T 292/306  | . Gear                        |
| Y10T 292/307  | . . Sliding catch             |
| Y10T 292/308  | . . Swinging catch            |
| Y10T 292/31   | . Hasps                       |
| Y10T 292/314  | . . Sliding catch             |
| Y10T 292/319  | . . . Seal                    |
| Y10T 292/323  | . . Swinging catch            |
| Y10T 292/327  | . . . Seal                    |
| Y10T 292/331  | . . Seal catch                |
| Y10T 292/336  | . . Seal-rupturing devices    |
| Y10T 292/34   | . Portable                    |

|               |   |
|---------------|---|
| Y10T 292/37   | . Portable securer plate or bar                   |
| Y10T 292/373  | . . Sliding and swinging holding member           |
| Y10T 292/376  | . . Screw-holding member                          |
| Y10T 292/379  | . . Sliding holding member                        |
| Y10T 292/382  | . . . Screw-operating means                       |
| Y10T 292/385  | . . . Screw catch                                 |
| Y10T 292/388  | . . . Sliding catch                               |
| Y10T 292/391  | . . . Swinging catch                              |
| Y10T 292/394  | . . Swinging holding member                       |
| Y10T 292/397  | . . . Catch devices                               |
| Y10T 292/40   | . Rings   |
| Y10T 292/42   | . Rigid engaging means                            |
| Y10T 292/426  | . . Screw catch                                   |
| Y10T 292/432  | . . Sliding catch                                 |
| Y10T 292/438  | . . Spring-arm catch                              |
| Y10T 292/444  | . . Swinging catch                                |
| Y10T 292/45   | . Rod clamps                                      |
| Y10T 292/47   | . . Friction-plate catch                          |
| Y10T 292/48   | . Seals   |
| Y10T 292/481  | . . Compressible disk                             |
| Y10T 292/483  | . . . Reinforced                                  |
| Y10T 292/484  | . . . Multiple                                    |
| Y10T 292/485  | . . . . Sheet metal                               |
| Y10T 292/487  | . . . . Hard and soft metal                       |
| Y10T 292/488  | . . . Sheet metal                                 |
| Y10T 292/49   | . . Compressible rivets and eyelets               |
| Y10T 292/491  | . . Distorted shackle                             |
| Y10T 292/492  | . . Driving                                       |
| Y10T 292/494  | . . Interengaging shackle ends, inclosing housing |
| Y10T 292/4945 | . . Rigid shackle ends                            |
| Y10T 292/495  | . . . Resilient and rigid engaging means          |
| Y10T 292/496  | . . . Resilient engaging means                    |
| Y10T 292/497  | . . Resilient shackle ends                        |
| Y10T 292/498  | . . . Rigid engaging means                        |
| Y10T 292/499  | . . . Resilient engaging means                    |
| Y10T 292/50   | . . Single piece, spring catch                    |
| Y10T 292/502  | . . Shiftable catch shackle operated              |
| Y10T 292/503  | . . Split-ring catch, shackle operated            |
| Y10T 292/505  | . . Strap-end fasteners                           |
| Y10T 292/506  | . . Rigid disk, distorted shackle                 |

|              |   |
|--------------|---|
| Y10T 292/507 | . . Tag type                            |
| Y10T 292/509 | . . Encasing                            |
| Y10T 292/51  | . Seal bolts                            |
| Y10T 292/513 | . Shackles                              |
| Y10T 292/516 | . . Sliding catch, seal                 |
| Y10T 292/522 | . . Swinging catch, seal                |
| Y10T 292/528 | . . Seal catch                          |
| Y10T 292/534 | . . Seal-rupturing devices              |
| Y10T 292/54  | . Trippers                              |
| Y10T 292/546 | . . Sliding detent                      |
| Y10T 292/552 | . . Spring-arm detent                   |
| Y10T 292/558 | . . Sliding bolt, swinging detent       |
| Y10T 292/564 | . . Swinging bolt, swinging detent      |
| Y10T 292/57  | . Operators with knobs or handles       |
| Y10T 292/59  | . Rollback and spindle connection       |
| Y10T 292/62  | . Bolt casings                          |
| Y10T 292/65  | . Braces                                |
| Y10T 292/67  | . . Portable                            |
| Y10T 292/68  | . Keepers                               |
| Y10T 292/683 | . . Segment                             |
| Y10T 292/685 | . . With anti-friction means            |
| Y10T 292/688 | . . With silencing or anti-rattle means |
| Y10T 292/691 | . . . Take-up                           |
| Y10T 292/694 | . . Covers                              |
| Y10T 292/696 | . . With movable dog, catch or striker  |
| Y10T 292/699 | . . . Motor controlled                  |
| Y10T 292/702 | . . . Pivoted or swinging               |
| Y10T 292/705 | . . Adjustable                          |
| Y10T 292/707 | . . . Vertically                        |
| Y10T 292/71  | . Wedges                                |
| Y10T 292/73  | . . Portable                            |
| Y10T 292/74  | . Weights                               |
| Y10T 292/76  | . Blind-slat holders                    |
| Y10T 292/79  | . Bolt guards                           |
| Y10T 292/82  | . Knobs                                 |
| Y10T 292/85  | . Knob-attaching devices                |
| Y10T 292/854 | . . Friction                            |
| Y10T 292/858 | . . Screw                               |
| Y10T 292/861 | . . . Guards                            |
| Y10T 292/865 | . . Sliding                             |

- Y10T 292/869 . . Spring arm
- Y10T 292/873 . . Swinging
- Y10T 292/876 . . Wedge
- Y10T 292/88 . Knob bearings
- Y10T 292/91 . Knob rose plates
- Y10T 292/93 . Latch spindles
- Y10T 292/96 . Latch-spindle catches

### **Former US Class 307 series**

- |                    |   |
|--------------------|---|
| <b>Y10T 307/00</b> | <b>Electrical transmission or interconnection systems</b> |
| Y10T 307/25        | . Plural load circuit systems                             |
| Y10T 307/258       | . . Common conductor or return type                       |
| Y10T 307/266       | . . . Polyphase   |
| Y10T 307/273       | . . . . Phase balancing                                   |
| Y10T 307/281       | . . . Voltage divider type                                |
| Y10T 307/289       | . . . Plural output generators                            |
| Y10T 307/297       | . . Transformer connections                               |
| Y10T 307/305       | . . Plural sources of supply                              |
| Y10T 307/313       | . . . Interconnected for energy transfer                  |
| Y10T 307/32        | . . . . With control of magnitude of energy transfer      |
| Y10T 307/328       | . . . . Diverse sources                                   |
| Y10T 307/336       | . . . . . AC and DC                                       |
| Y10T 307/344       | . . . Substitute or alternate source                      |
| Y10T 307/352       | . . . With control of magnitude of current or power       |
| Y10T 307/359       | . . . Diverse sources                                     |
| Y10T 307/367       | . . . . AC and DC   |
| Y10T 307/375       | . . . . Different frequencies                             |
| Y10T 307/383       | . . . . Different voltages                                |
| Y10T 307/391       | . . . Selectively connected loads and/or sources          |
| Y10T 307/398       | . . Anticoupling of load circuits through same source     |
| Y10T 307/406       | . . Control of current or power                           |
| Y10T 307/414       | . . . Load current proportioning or dividing              |
| Y10T 307/422       | . . . Constant magnitude control                          |
| Y10T 307/43        | . . . . By control of one or more load circuits           |
| Y10T 307/438       | . . . Limit control                                       |
| Y10T 307/445       | . . Serially connected load circuits                      |
| Y10T 307/453       | . . . Selective series-parallel connections               |
| Y10T 307/461       | . . Selectively connected or controlled load circuits     |
| Y10T 307/469       | . . . Condition responsive                                |

|              |  |
|--------------|--|
| Y10T 307/477 | . . . Code-controlled  |
| Y10T 307/484 | . . . Sequential or alternating                              |
| Y10T 307/492 | . . Circuit arrangements or layouts                          |
| Y10T 307/50  | . Plural supply circuits or sources                          |
| Y10T 307/505 | . . One source floats across or compensates for other source |
| Y10T 307/511 | . . . With intervening converter                             |
| Y10T 307/516 | . . . . Storage battery or accumulator-type source           |
| Y10T 307/522 | . . . Dynamoelectric-type source                             |
| Y10T 307/527 | . . . Storage battery or accumulator-type source             |
| Y10T 307/533 | . . . . With series-connected auxiliary source               |
| Y10T 307/538 | . . . . Tap-changing or variable number of cells             |
| Y10T 307/544 | . . Circulating- or inter-current control or prevention      |
| Y10T 307/549 | . . Load current control                                     |
| Y10T 307/555 | . . . Load current division                                  |
| Y10T 307/56  | . . . . Serially connected sources                           |
| Y10T 307/565 | . . . . Fixed or predetermined ratio                         |
| Y10T 307/571 | . . . . . Diverse-or unlike-type sources                     |
| Y10T 307/576 | . . . . . Plural generators                                  |
| Y10T 307/582 | . . . . . Plural converters                                  |
| Y10T 307/587 | . . . . Peak or excess load                                  |
| Y10T 307/593 | . . . Constant load or current                               |
| Y10T 307/598 | . . . . Serially connected sources                           |
| Y10T 307/604 | . . . Load-limiting  |
| Y10T 307/609 | . . . Serially connected sources                             |
| Y10T 307/615 | . . Substitute or emergency source                           |
| Y10T 307/62  | . . . Plural substitute sources                              |
| Y10T 307/625 | . . . Storage battery or accumulator                         |
| Y10T 307/631 | . . . . With intervening dynamoelectric machine              |
| Y10T 307/636 | . . . Dynamoelectric   |
| Y10T 307/642 | . . Sources distributed along load circuit                   |
| Y10T 307/647 | . . Load transfer without paralleling sources                |
| Y10T 307/653 | . . Series-parallel connection of sources                    |
| Y10T 307/658 | . . Diverse or unlike electrical characteristics             |
| Y10T 307/664 | . . . Differing frequencies                                  |
| Y10T 307/669 | . . . Differing capacities                                   |
| Y10T 307/675 | . . . Differing voltages                                     |
| Y10T 307/68  | . . . . Generator sources                                    |
| Y10T 307/685 | . . Series-connected sources                                 |
| Y10T 307/691 | . . . Generator sources                                      |
| Y10T 307/696 | . . Selective or optional sources                            |

|              |  |
|--------------|--|
| Y10T 307/702 | . . . Predetermined sequence                                   |
| Y10T 307/707 | . . Plural converters  |
| Y10T 307/713 | . . Plural transformers  |
| Y10T 307/718 | . . Plural generators  |
| Y10T 307/724 | . . Connecting or disconnecting                                |
| Y10T 307/729 | . . . Condition responsive                                     |
| Y10T 307/735 | . . . . Attainment of voltage, frequency or phase relationship |
| Y10T 307/74  | . Switching systems  |
| Y10T 307/747 | . . Plural switches  |
| Y10T 307/753 | . . . Lazy-man switch type                                     |
| Y10T 307/76  | . . . Selectively actuated                                     |
| Y10T 307/766 | . . Condition responsive                                       |
| Y10T 307/773 | . . . Light, heat, vibratory or radiant energy                 |
| Y10T 307/779 | . . . Fluid pressure, density, level, velocity or humidity     |
| Y10T 307/786 | . . . Mechanical force   |
| Y10T 307/793 | . . . . Speed, centrifugal or kinetic force                    |
| Y10T 307/799 | . . . . . Inertia or acceleration                              |
| Y10T 307/806 | . . . . . Direction of rotation                                |
| Y10T 307/812 | . . . . . Differential speed between two bodies                |
| Y10T 307/819 | . . . . . Torque   |
| Y10T 307/826 | . . . Electrical   |
| Y10T 307/832 | . . . . Power or energy  |
| Y10T 307/839 | . . . . Polarity, phase sequence or reverse flow               |
| Y10T 307/845 | . . . . AC or DC discriminating                                |
| Y10T 307/852 | . . . . Frequency  |
| Y10T 307/858 | . . . . Voltage  |
| Y10T 307/865 | . . . . Current  |
| Y10T 307/872 | . . Repetitive make and break                                  |
| Y10T 307/878 | . . . Electronically controlled relay                          |
| Y10T 307/885 | . . . . Responsive to physical condition                       |
| Y10T 307/891 | . . . Thermal relay  |
| Y10T 307/898 | . . . Vibrating relay  |
| Y10T 307/904 | . . . Miscellaneous  |
| Y10T 307/911 | . . With operation facilitating feature                        |
| Y10T 307/918 | . . . Preliminary reduction in current or voltage of system    |
| Y10T 307/924 | . . . Switch contact conditioning                              |
| Y10T 307/931 | . . . . Polarity reversing                                     |
| Y10T 307/937 | . . Switch actuation   |
| Y10T 307/944 | . . . Power circuit controlled                                 |
| Y10T 307/951 | . . . With time delay or retardation means                     |

- Y10T 307/957 . . . . Electrically initiated
- Y10T 307/964 . . . . Series connected switches
- Y10T 307/97 . . . With locking, holding or braking means
- Y10T 307/977 . . . Electrical actuator
- Y10T 307/983 . . . Fluid-pressure actuator

### **Former US Class 403 Series**

#### **Y10T 403/00**

#### **Joints and connections**

- Y10T 403/10 . Selectively engageable hub to shaft connection
- Y10T 403/11 . including frangible component
- Y10T 403/12 . Selectively assembled, e.g. , convertible, etc.
- Y10T 403/125 . . Selective orientation
- Y10T 403/13 . Inflatable connector
- Y10T 403/14 . with opening for access to connector or operator
- Y10T 403/142 . . to threaded component
- Y10T 403/145 . . . Transverse to thread axis
- Y10T 403/148 . . to biased component
- Y10T 403/15 . Closure or plug spaced from joint
- Y10T 403/16 . with adjunctive protector, broken parts retainer, repair, assembly or disassembly feature
- Y10T 403/1608 . . Holding means or protector functioning only during transportation, assembly or disassembly
- Y10T 403/1616 . . Position or guide means
- Y10T 403/1624 . . . Related to joint component
- Y10T 403/1633 . . Utilizing fluid pressure
- Y10T 403/1641 . . Back-off means, e.g., separator, etc.
- Y10T 403/1649 . . Handle or handwheel
- Y10T 403/1658 . . . Actuates retainer or blocker
- Y10T 403/1666 . . tool-engaging or accommodating means or with tool
- Y10T 403/1674 . . . for latch or retainer
- Y10T 403/1683 . . Releasably captive nut or bolt
- Y10T 403/1691 . . Means to lock bolt or nut when other is turned
- Y10T 403/17 . with adjunctive shield
- Y10T 403/18 . Structurally installed in diverse art device
- Y10T 403/185 . . Head or base
- Y10T 403/19 . Coupling supported by independent bearing
- Y10T 403/20 . with indicator or inspection means
- Y10T 403/21 . Utilizing thermal characteristic, e.g. , expansion or contraction, etc.
- Y10T 403/213 . . Interposed material of intermediate coefficient of expansion
- Y10T 403/217 . . Members having different coefficients of expansion



- Y10T 403/22 . with fluid pressure responsive component
- Y10T 403/23 . with ambient condition responsive control means
- Y10T 403/24 . with independent handle or operator
- Y10T 403/25 . with distinct fluid or article handling or directing feature
- Y10T 403/251 . . External reservoir
- Y10T 403/253 . . Pressure fitting
- Y10T 403/255 . . including port or reservoir communicating with joint
- Y10T 403/257 . . . Articulated member
- Y10T 403/259 . . . . At joint interface
- Y10T 403/26 . Non-adhering fluent material at joint
- Y10T 403/27 . with strain-limiting means
- Y10T 403/28 . Combined
- Y10T 403/29 . Rotarily connected, differentially translatable members, e.g. , turn-buckle, etc.
- Y10T 403/291 . . having tool-engaging means or operating handle
- Y10T 403/293 . . having operating mechanism
- Y10T 403/295 . . having locking means
- Y10T 403/297 . . Differential pitch, similar hand
- Y10T 403/299 . . Externally threaded actuator
- Y10T 403/30 . Laterally related members connected by latch means, e.g. , scaffold connectors
- Y10T 403/31 . Flexible diaphragm or bellows
- Y10T 403/315 . . with additional connection or packing
- Y10T 403/32 . Articulated members
- Y10T 403/32008 . . Plural distinct articulation axes
- Y10T 403/32016 . . . Three or more parallel axes
- Y10T 403/32024 . . . Single adjustment for plural axes
- Y10T 403/32032 . . . Plural ball and socket
- Y10T 403/32041 . . . Universal
- Y10T 403/32049 . . . . Non-coplanar axes
- Y10T 403/32057 . . . Angular and linear
- Y10T 403/32065 . . . . Screw and swivel
- Y10T 403/32073 . . . . Pivot stud slidable in elongated opening
- Y10T 403/32081 . . . Parallel rotary
- Y10T 403/32091 . . . Plural translating connections
- Y10T 403/32098 . . Branched
- Y10T 403/32106 . . Member pivoted at rigid corner
- Y10T 403/32114 . . including static joint
- Y10T 403/32122 . . . Trunnion assembly to side of rod
- Y10T 403/32131 . . . One member is plate or side
- Y10T 403/32139 . . . . Secant, i.e., rod extending through plate
- Y10T 403/32147 . . . . Plate or side forms bearing surface

|                |           |   |
|----------------|-----------|---|
| Y10T 403/32155 | . . . .   | Bearing component clamped to plate or side, e.g., bolted, etc.          |
| Y10T 403/32163 | . . .     | Articulate joint intermediate end joints                                |
| Y10T 403/32172 | . . . .   | Variable angle  |
| Y10T 403/32181 | . . . . . | Universal   |
| Y10T 403/32188 | . . .     | Angled or offset members  |
| Y10T 403/32196 | . . .     | Articulate joint is ball and socket                                     |
| Y10T 403/32204 | . . . .   | with threaded joint   |
| Y10T 403/32213 | . . .     | Articulate joint is a swivel  |
| Y10T 403/32221 | . . .     | Articulate joint comprises pivoted clevis or channel bar                |
| Y10T 403/32229 | . . .     | Articulate joint is a slide   |
| Y10T 403/32237 | . .       | including operator  |
| Y10T 403/32245 | . .       | Arcuate shank moves in complementary guide                              |
| Y10T 403/32254 | . .       | Lockable at fixed position  |
| Y10T 403/32262 | . . .     | At selected angle   |
| Y10T 403/32271 | . . . .   | Movable brace between members   |
| Y10T 403/32278 | . . . .   | Members rotatable about oblique axes                                    |
| Y10T 403/32286 | . . . .   | Clamping screw traverses sliding complementary arcuate bearing surfaces |
| Y10T 403/32295 | . . . .   | Securing yoke or ring spaced radially from locking means                |
| Y10T 403/32303 | . . . . . | Eyebolt   |
| Y10T 403/32311 | . . . .   | Ball and socket   |
| Y10T 403/32319 | . . . .   | including pivot stud  |
| Y10T 403/32327 | . . . . . | including radially spaced detent or latch component                     |
| Y10T 403/32336 | . . . . . | Engaging notch or recess in outer periphery of component                |
| Y10T 403/32344 | . . . . . | Side of rod engages recess in radial face                               |
| Y10T 403/32352 | . . . . . | Pivoted detent  |
| Y10T 403/32361 | . . . . . | Engaging recess in radial face  |
| Y10T 403/32368 | . . . . . | including radial interengaging tongue and slot or serrations            |
| Y10T 403/32377 | . . . . . | Radially spaced arcuate slot engages fastener                           |
| Y10T 403/32385 | . . . . . | Locked by plural motions of one member                                  |
| Y10T 403/32393 | . . . . . | including bridging keeper   |
| Y10T 403/32401 | . . . . . | Locked by nesting parts   |
| Y10T 403/32409 | . . . . . | Members locked in axial alignment                                       |
| Y10T 403/32418 | . . . .   | Plural distinct positions   |
| Y10T 403/32426 | . . .     | Plural distinct positions   |
| Y10T 403/32434 | . . . .   | Unidirectional movement, e.g., ratchet, etc.                            |
| Y10T 403/32442 | . . . .   | At least one discrete position  |
| Y10T 403/32451 | . . . . . | Step-by-step adjustment   |
| Y10T 403/32459 | . . . . . | Retainer extends through aligned recesses                               |
| Y10T 403/32467 | . . .     | Telescoping members   |

|                |           |   |
|----------------|-----------|---|
| Y10T 403/32475 | . . . .   | having detent   |
| Y10T 403/32483 | . . . . . | Spring biased   |
| Y10T 403/32491 | . . . . . | Threaded  |
| Y10T 403/32501 | . . . . . | Cam or wedge  |
| Y10T 403/32508 | . . . . . | having transverse pin                                   |
| Y10T 403/32516 | . . . . . | Remotely actuated                                       |
| Y10T 403/32524 | . . . . . | Self-locking  |
| Y10T 403/32532 | . . . .   | Clamped members   |
| Y10T 403/32541 | . . . .   | Rotatable members resiliently biased to one position    |
| Y10T 403/32549 | . . . .   | including limit means                                   |
| Y10T 403/32557 | . . . .   | for pivotal motion                                      |
| Y10T 403/32565 | . . . . . | Ball and socket with restricted movement about one axis |
| Y10T 403/32573 | . . . . . | Ball stud passes through confining opening              |
| Y10T 403/32581 | . . . . . | Pin and slot  |
| Y10T 403/32591 | . . . . . | Opposed stops on one member                             |
| Y10T 403/32598 | . . . .   | Threaded interface                                      |
| Y10T 403/32606 | . . . .   | Pivoted   |
| Y10T 403/32614 | . . . . . | including circumferential biasing or damping means      |
| Y10T 403/32622 | . . . . . | Rocking or rolling contact                              |
| Y10T 403/32631 | . . . . . | Universal ball and socket                               |
| Y10T 403/32639 | . . . . . | including internal tie means                            |
| Y10T 403/32647 | . . . . . | Plural concave surfaces with diverse curvature          |
| Y10T 403/32655 | . . . . . | Interposed concavo-convex component                     |
| Y10T 403/32663 | . . . . . | Outer surfaces  |
| Y10T 403/32672 | . . . . . | Swiveled ball parts or seat                             |
| Y10T 403/32681 | . . . . . | Composite ball  |
| Y10T 403/32688 | . . . . . | Spring biased segments                                  |
| Y10T 403/32696 | . . . . . | Nonmetallic part  |
| Y10T 403/32704 | . . . . . | Stud extends into ball                                  |
| Y10T 403/32713 | . . . . . | Elastomerically biased or backed components             |
| Y10T 403/32721 | . . . . . | Elastomeric seat  |
| Y10T 403/32729 | . . . . . | Externally packed                                       |
| Y10T 403/32737 | . . . . . | including liner, shim, or discrete seat                 |
| Y10T 403/32745 | . . . . . | Spring acts through wedging surfaces                    |
| Y10T 403/32754 | . . . . . | Variably preloaded                                      |
| Y10T 403/32762 | . . . . . | Spring-biased seat opposite ball stud                   |
| Y10T 403/32771 | . . . . . | Porous  |
| Y10T 403/32778 | . . . . . | Completely spacing the members                          |
| Y10T 403/32786 | . . . . . | Divided socket-type coupling                            |
| Y10T 403/32795 | . . . . . | Bifurcated socket                                       |

|                |           |   |
|----------------|-----------|---|
| Y10T 403/32803 | . . . .   | Separable socket sections                             |
| Y10T 403/32811 | . . . .   | Spring-biased   |
| Y10T 403/32819 | . . . .   | including tension or take-up means                    |
| Y10T 403/32827 | . . . .   | Interposed spring means coaxial with pivot            |
| Y10T 403/32836 | . . . .   | Acting through tapered surface on bearing component   |
| Y10T 403/32844 | . . . .   | Manually variable                                     |
| Y10T 403/32852 | . . . .   | External of bearing assembly, e.g., antirattler, etc. |
| Y10T 403/32861 | . . . .   | T-pivot, e.g., wrist pin, etc.                        |
| Y10T 403/32868 | . . . .   | Floating pin  |
| Y10T 403/32877 | . . . .   | Pin is integral with or secured to inner member       |
| Y10T 403/32885 | . . . .   | Expanded pin or end                                   |
| Y10T 403/32893 | . . . .   | including distinct pin retainer                       |
| Y10T 403/32901 | . . . . . | Unitary clip or plug                                  |
| Y10T 403/32909 | . . . . . | Threaded pin end                                      |
| Y10T 403/32918 | . . . . . | fork and tongue                                       |
| Y10T 403/32926 | . . . . . | with interposed antifriction means                    |
| Y10T 403/32934 | . . . . . | Oppositely laterally movable tines                    |
| Y10T 403/32942 | . . . .   | On oblique interface                                  |
| Y10T 403/32951 | . . . .   | Transverse pin or stud                                |
| Y10T 403/32959 | . . . . . | Traverses interposed facing component                 |
| Y10T 403/32967 | . . . . . | Attached to or integral with one member               |
| Y10T 403/32975 | . . . .   | Rotatable   |
| Y10T 403/32983 | . . . .   | Rod in socket   |
| Y10T 403/32991 | . . . .   | Axially spring-biased coaxial members                 |
| Y10T 403/33    | . . . .   | Transverse rod to spaced plate surfaces               |
| Y10T 403/335   | . . . .   | Retainer utilizes or abuts plural plates              |
| Y10T 403/34    | . . . .   | Branched  |
| Y10T 403/341   | . . . .   | Three or more radiating members                       |
| Y10T 403/342   | . . . .   | Polyhedral  |
| Y10T 403/343   | . . . . . | Unilateral of plane                                   |
| Y10T 403/344   | . . . . . | Plural pairs of axially aligned members               |
| Y10T 403/345   | . . . .   | Coplanar  |
| Y10T 403/346   | . . . . . | Additional rod held by encompassing means             |
| Y10T 403/347   | . . . .   | Polyhedral  |
| Y10T 403/348   | . . . .   | Parallel rods   |
| Y10T 403/349   | . . . .   | Coplanar  |
| Y10T 403/35    | . . . .   | Diverse material coupling member                      |
| Y10T 403/36    | . . . .   | Three or more serial joints, at least one diverse     |
| Y10T 403/362   | . . . .   | Nonaligned axes                                       |
| Y10T 403/364   | . . . .   | Separable intermediate joint                          |

- Y10T 403/366 . . . Axially acting connector
- Y10T 403/368 . . . Screw or cam
- Y10T 403/37 . Joint involving plural layers of single rod
- Y10T 403/38 . Laterally related rods independently joined to transverse surface
- Y10T 403/39 . Rod to member to side, e.g. , plate, rod side, etc.
- Y10T 403/3906 . . Rod side to member to side
- Y10T 403/3913 . . Unilateral of side
- Y10T 403/3921 . . Arcuate or multiplanar side
- Y10T 403/3926 . . . Encompassed side
- Y10T 403/3933 . . Intermediate member includes tubular part
- Y10T 403/3941 . . . Side or tubular part deformed in situ
- Y10T 403/3946 . . . Intermediate member extends through side
- Y10T 403/3953 . . . . Split or divided tubular part and coacting compressor
- Y10T 403/3961 . . . . Transverse clamp secures rod and tubular part
- Y10T 403/3966 . . . . Rod also extends through side
- Y10T 403/3973 . . . Oblique rod
- Y10T 403/3981 . . . Intermediate member secured to side by radial flange
- Y10T 403/3986 . . . Internally threaded tubular part
- Y10T 403/3993 . . Intermediate member extends completely through side
- Y10T 403/40 . Radially spaced members joined by independent coupling
- Y10T 403/405 . . Flexible intermediate member
- Y10T 403/41 . Coacting connection between inner member and plural parts of outer member
- Y10T 403/42 . Rigid angle coupling, e.g. , elbow or u, etc.
- Y10T 403/43 . Axially curved or bent portion of rod is joint component
- Y10T 403/4309 . . Interfitted crossing rods
- Y10T 403/4318 . . Joined to laterally related transverse surface at axially spaced points
- Y10T 403/4327 . . Reversely bent portion
- Y10T 403/4336 . . . Around eye-forming thimble
- Y10T 403/4345 . . . with wedge clamp
- Y10T 403/4354 . . . Held by crimped collar
- Y10T 403/4363 . . . Open U
- Y10T 403/4372 . . Intertwisted ends
- Y10T 403/4381 . . End of rod is deflected laterally within connector
- Y10T 403/4391 . . Plural rods distorted by single component
- Y10T 403/44 . Three or more members connected at single locus
- Y10T 403/443 . . All encompassed
- Y10T 403/447 . . Mutually contacting
- Y10T 403/45 . Flexibly connected rigid members
- Y10T 403/451 . . Rigid sleeve encompasses flexible bushing
- Y10T 403/452 . . . Longitudinally divided sleeve

|               |  |
|---------------|--|
| Y10T 403/453  | . . Flexible sleeve-type coupling                              |
| Y10T 403/454  | . . Connecting pin traverses radially interposed elastomer     |
| Y10T 403/455  | . . Elastomer interposed between radially spaced members       |
| Y10T 403/456  | . . . Elastomer encompasses shoulder on inner member           |
| Y10T 403/457  | . . . including axially acting compressing means               |
| Y10T 403/458  | . . . Composite bushing with elastomeric component             |
| Y10T 403/459  | . . Helical spring type coupling                               |
| Y10T 403/46   | . Rod end to transverse side of member                         |
| Y10T 403/4602 | . . Corner joint   |
| Y10T 403/4605 | . . Stirrup  |
| Y10T 403/4608 | . . Structure attached to rod end encompasses side             |
| Y10T 403/4611 | . . . Clamped saddle   |
| Y10T 403/4614 | . . . Yoke or ring   |
| Y10T 403/4617 | . . . . having radial screw at bight                           |
| Y10T 403/4621 | . . including saddle   |
| Y10T 403/4622 | . . Gland type   |
| Y10T 403/4625 | . . . Rod and side gripped simultaneously by single actuation  |
| Y10T 403/4628 | . . Rod clamped to hole edge                                   |
| Y10T 403/4631 | . . Rod to open edge of side, e.g., wrap-around connection     |
| Y10T 403/4634 | . . Rod and side deformingly interlocked                       |
| Y10T 403/4637 | . . Radially interposed, side-engaging shim or bushing         |
| Y10T 403/4641 | . . Socket formed by shaping or deforming side                 |
| Y10T 403/4642 | . . Integral transverse projection on side, e.g., necked, etc. |
| Y10T 403/4645 | . . . From rod side  |
| Y10T 403/4648 | . . Utilizing opposite sides of member                         |
| Y10T 403/4651 | . . . Rod is expanded by component inserted from distal side   |
| Y10T 403/4654 | . . . . Separate and deformable component                      |
| Y10T 403/4657 | . . . . Plural contacting components                           |
| Y10T 403/4661 | . . . . Barbed component                                       |
| Y10T 403/4662 | . . . Inserted, blind-side-engaging, retaining portion on rod  |
| Y10T 403/4665 | . . . Stepped or tapered recess in side                        |
| Y10T 403/4668 | . . . . Terminal, rod-attached retainer engages distal side    |
| Y10T 403/4671 | . . . . . Inserted into rod                                    |
| Y10T 403/4674 | . . . Clamped member   |
| Y10T 403/4677 | . . . . Clamping component engages recessed side               |
| Y10T 403/4681 | . . . . Bolted to rod  |
| Y10T 403/4682 | . . . . Between rod shoulder and terminal nut                  |
| Y10T 403/4685 | . . . . Bolted through member                                  |
| Y10T 403/4688 | . . . . Coaxial collar or shoulder or rod is clamp element     |
| Y10T 403/4691 | . . Flange on rod bolted to side                               |

- Y10T 403/4694 . . Rod received in recessed side, e.g., socket or tapered opening, etc.
- Y10T 403/4697 . . Utilizing internal rod structure
- Y10T 403/47 . Molded joint
- Y10T 403/471 . . And independent connection
- Y10T 403/472 . . including mechanical interlock
- Y10T 403/473 . . Socket or open cup for bonding material
- Y10T 403/475 . . Member cast in situ
- Y10T 403/477 . . Fusion bond, e.g., weld, etc.
- Y10T 403/478 . . . Metallic fusion material
- Y10T 403/479 . . . . Added bonding material, e.g., solder, braze, etc.
- Y10T 403/48 . Shrunken fit
- Y10T 403/49 . Member deformed in situ
- Y10T 403/4908 . . Separating element between strands of member
- Y10T 403/4916 . . Interposed deforming element contacts socket bottom
- Y10T 403/4924 . . Inner member is expanded by longitudinally inserted element
- Y10T 403/4933 . . by separate, deformable element
- Y10T 403/4941 . . Deformation occurs simultaneously with action of separate, diverse function, joint component
- Y10T 403/4949 . . Deforming component is inserted section
- Y10T 403/4958 . . Separate deforming means remains with joint assembly
- Y10T 403/4966 . . Deformation occurs simultaneously with assembly
- Y10T 403/4974 . . by piercing
- Y10T 403/4983 . . Diverse resistance to lateral deforming force
- Y10T 403/4991 . . Both members deformed
- Y10T 403/50 . Bridged by diverse connector
- Y10T 403/51 . including spaced, diverse connections
- Y10T 403/52 . including distinct packing
- Y10T 403/53 . Split end with laterally movable opposed portions
- Y10T 403/535 . . with separate force-applying means
- Y10T 403/54 . Flexible member is joint component
- Y10T 403/55 . Member ends joined by inserted section
- Y10T 403/551 . . Externally bridged
- Y10T 403/553 . . Laterally inserted section
- Y10T 403/555 . . Angle section
- Y10T 403/556 . . Section threaded to member
- Y10T 403/557 . . Expansible section
- Y10T 403/559 . . Fluted or splined section
- Y10T 403/56 . Thread adaptor
- Y10T 403/57 . Distinct end coupler
- Y10T 403/5706 . . Diverse serial connections

|               |   |
|---------------|---|
| Y10T 403/5713 | . . . Axially cleft coupler                                 |
| Y10T 403/5721 | . . Single actuator for plural connections                  |
| Y10T 403/5726 | . . . Axially biased end portions                           |
| Y10T 403/5733 | . . Plural opposed sockets                                  |
| Y10T 403/5741 | . . Separate screw or pin-type connections                  |
| Y10T 403/5746 | . . Continuous thread                                       |
| Y10T 403/5753 | . . having separable end caps or plugs                      |
| Y10T 403/5761 | . . Interrupted periphery, e.g., split or segmental, etc.   |
| Y10T 403/5766 | . . . Axially divided segments                              |
| Y10T 403/5773 | . . . . Interfitting  |
| Y10T 403/5781 | . . . . Bolted  |
| Y10T 403/5786 | . . . Split   |
| Y10T 403/5793 | . . including member wedging or camming means               |
| Y10T 403/58   | . including ancillary means blocking disconnection of joint |
| Y10T 403/581  | . . Blocker for assembled joint retainer                    |
| Y10T 403/583  | . . . Blocker keeper  |
| Y10T 403/585  | . . . Blocked key   |
| Y10T 403/587  | . . Blocker is catch or key                                 |
| Y10T 403/589  | . . Cam or thread lock                                      |
| Y10T 403/59   | . Manually releaseable latch type                           |
| Y10T 403/591  | . . having operating mechanism                              |
| Y10T 403/592  | . . . Ball detent   |
| Y10T 403/593  | . . . Remotely actuated                                     |
| Y10T 403/595  | . . . Lever   |
| Y10T 403/597  | . . Swiveled bolt   |
| Y10T 403/598  | . . Transversely sliding pin                                |
| Y10T 403/599  | . . Spring biased manipulator                               |
| Y10T 403/60   | . Biased catch or latch                                     |
| Y10T 403/602  | . . by separate spring                                      |
| Y10T 403/604  | . . . Radially sliding catch                                |
| Y10T 403/606  | . . Leaf spring   |
| Y10T 403/608  | . . Pivoted   |
| Y10T 403/61   | . Side slide: elongated co-linear members                   |
| Y10T 403/62   | . Annular recess is joint component                         |
| Y10T 403/63   | . Convergent interface                                      |
| Y10T 403/635  | . . Tapered   |
| Y10T 403/64   | . Interconnected flanges or shoulders                       |
| Y10T 403/642  | . . Separate flange or shoulder                             |
| Y10T 403/645  | . . Axially bolted or riveted                               |
| Y10T 403/648  | . . Clamped   |



|               |   |
|---------------|---|
| Y10T 403/65   | . Scarf   |
| Y10T 403/655  | . . Mirror images   |
| Y10T 403/66   | . Interfitted members with external bridging piece  |
| Y10T 403/67   | . Thimble: screw or cam   |
| Y10T 403/68   | . Screw or cam  |
| Y10T 403/69   | . Axially split or separable member   |
| Y10T 403/70   | . Interfitted members   |
| Y10T 403/7001 | . . Crossed rods  |
| Y10T 403/7003 | . . . One rod is encompassed by the other   |
| Y10T 403/7005 | . . Lugged member, rotary engagement  |
| Y10T 403/7007 | . . . Bayonet joint   |
| Y10T 403/7009 | . . Rotary binding cam or wedge   |
| Y10T 403/7011 | . . . Radially interposed shim or bushing   |
| Y10T 403/7013 | . . . . Arcuate slip  |
| Y10T 403/7015 | . . Assembled by plural manipulations of member   |
| Y10T 403/7016 | . . Diametric end slot is joint component   |
| Y10T 403/7018 | . . including separably interposed key  |
| Y10T 403/7021 | . . . Axially extending   |
| Y10T 403/7022 | . . . . Resilient   |
| Y10T 403/7024 | . . . . Longitudinally stepped or tapered   |
| Y10T 403/7026 | . . Longitudinally splined or fluted rod  |
| Y10T 403/7028 | . . . Splayed or having a cam surface for anti-backlash                                     |
| Y10T 403/7031 | . . . Rod designed to be manipulable, e.g., twistable, within coupling for quick disconnect |
| Y10T 403/7032 | . . . including a means, e.g., spring biased portion, for misalignment correction           |
| Y10T 403/7033 | . . . including a lock or retainer  |
| Y10T 403/7035 | . . . Specific angle or shape of rib, key, groove, or shoulder                              |
| Y10T 403/7037 | . . Externally shouldered or headed rod   |
| Y10T 403/7039 | . . Socket  |
| Y10T 403/7041 | . . including set screw   |
| Y10T 403/7043 | . . Interfitted angle or channel bars   |
| Y10T 403/7045 | . . Interdigitated ends   |
| Y10T 403/7047 | . . Radially interposed shim or bushing   |
| Y10T 403/7049 | . . . Biased by distinct radially acting means  |
| Y10T 403/7051 | . . . Wedging or camming  |
| Y10T 403/7052 | . . . . Engaged by axial movement   |
| Y10T 403/7054 | . . . . . Plural, circumferentially related shims between members                           |
| Y10T 403/7056 | . . . . . Threaded actuator   |
| Y10T 403/7058 | . . . . . Split or slotted bushing  |

|               |   |
|---------------|---|
| Y10T 403/7061 | . . . Resilient   |
| Y10T 403/7062 | . . Clamped members   |
| Y10T 403/7064 | . . . by wedge or cam   |
| Y10T 403/7066 | . . . . having actuator   |
| Y10T 403/7067 | . . . . . Threaded actuator   |
| Y10T 403/7069 | . . . . . Axially oriented  |
| Y10T 403/7071 | . . . . . Lever actuator  |
| Y10T 403/7073 | . . Peripheral enlargement, depression, or slot on one member is joint component                |
| Y10T 403/7075 | . . including discrete retainer   |
| Y10T 403/7077 | . . . for telescoping members   |
| Y10T 403/7079 | . . . . Transverse pin  |
| Y10T 403/7081 | . . . . . Multiple retainers  |
| Y10T 403/7083 | . . . . . having means to prevent removal of retainer   |
| Y10T 403/7084 | . . . . . Bolt, rivet, or screw   |
| Y10T 403/7086 | . . . . . Wedge pin   |
| Y10T 403/7088 | . . . . . Sliding pin   |
| Y10T 403/7091 | . . . . . Expansible retainer   |
| Y10T 403/7092 | . . . for interfitted side faces  |
| Y10T 403/7094 | . . Enlarged head in complementary recess, e.g., dovetail, etc.                                 |
| Y10T 403/7096 | . . Rigid angle   |
| Y10T 403/7098 | . . Non-circular rod section is joint component   |
| Y10T 403/71   | . Rod side to plate or side   |
| Y10T 403/7105 | . . Connected by double clamp   |
| Y10T 403/7111 | . . Shackle is integral with or independently attached to proximate side of plate or other side |
| Y10T 403/7117 | . . Flanged or grooved rod  |
| Y10T 403/7123 | . . Traversed by connector  |
| Y10T 403/7129 | . . Laterally spaced rods   |
| Y10T 403/7135 | . . . by separable shim or bushing in connector   |
| Y10T 403/7141 | . . . Plural channels in connector  |
| Y10T 403/7147 | . . Connected by flexible tie   |
| Y10T 403/7152 | . . Lapped rod ends   |
| Y10T 403/7158 | . . Diagonal connector  |
| Y10T 403/7164 | . . One rod held between bight and other rod extending through aperture in leg of connector     |
| Y10T 403/7171 | . . Two rods encompassed by single connector  |
| Y10T 403/7176 | . . Resilient clip  |
| Y10T 403/7182 | . . Yoke or ring-type connector   |
| Y10T 403/7188 | . . . Rod received in open channel  |
| Y10T 403/7194 | . . Crossed rods  |

- Y10T 403/72 . Miter joint
- Y10T 403/725 . . Connector bridges inner or outer periphery
- Y10T 403/73 . Rigid angle
- Y10T 403/74 . Particular configuration or material of member
- Y10T 403/75 . having a joining piece extending through aligned openings in plural members
- Y10T 403/76 . having a cam, wedge, or tapered portion
- Y10T 403/77 . Miscellaneous

### **Former US Class 407 Series**

- Y10T 407/00** **Cutters, for shaping**
- Y10T 407/10 . including noncutting work modifying means
- Y10T 407/11 . including chip breaker, guide or deflector detachable from tool and tool holder
- Y10T 407/112 . . Adjustable relative to cutting edge
- Y10T 407/114 . . . including adjusting means
- Y10T 407/116 . . Attached to or integral with tool clamping jaw
- Y10T 407/118 . . Chip breaker
- Y10T 407/12 . Freely movable cutting edge
- Y10T 407/13 . Yieldable tool
- Y10T 407/134 . . Resiliently mounted tool
- Y10T 407/137 . . . including yield stress or flexure limit adjusting means
- Y10T 407/14 . with means to apply fluid to cutting tool
- Y10T 407/15 . Rotary broach
- Y10T 407/16 . Rectilinear broach
- Y10T 407/1614 . . Hollow tool for surrounding workpiece
- Y10T 407/1628 . . including holder having seat for inserted tool
- Y10T 407/1642 . . . Annular tool
- Y10T 407/1657 . . . including single tooth
- Y10T 407/1671 . . Plural tooth groups
- Y10T 407/1685 . . including sequentially acting teeth of stepped cutting width
- Y10T 407/17 . Gear cutting tool
- Y10T 407/1705 . . Face mill gear cutting tool
- Y10T 407/171 . . . Adjustable teeth
- Y10T 407/1715 . . Hob
- Y10T 407/172 . . . Thread cutting
- Y10T 407/1725 . . . including holder having seat for inserted tool
- Y10T 407/173 . . . for cutting involute gear tooth
- Y10T 407/1735 . . Rotary, gear shaving cutting tool
- Y10T 407/174 . . Gear generating, revolving shaper cutting tool
- Y10T 407/1745 . . Rotary, tooth form cutting tool

|               |   |
|---------------|---|
| Y10T 407/18   | . File or rasp  |
| Y10T 407/1805 | . . Flexible blade or carrier therefor  |
| Y10T 407/181  | . . Tire rasp   |
| Y10T 407/1815 | . . Rotary file or round disc   |
| Y10T 407/182  | . . Composite, diverse sector, or assembled   |
| Y10T 407/1825 | . . Handle or holder, per se  |
| Y10T 407/19   | . Rotary cutting tool   |
| Y10T 407/1902 | . . Gang  |
| Y10T 407/1904 | . . Composite body of diverse material  |
| Y10T 407/1906 | . . including holder [i.e., head] having seat for inserted tool   |
| Y10T 407/1908 | . . . Face or end mill  |
| Y10T 407/191  | . . . . Plural simultaneously usable separable tools in common seat or common clamp actuator for plural simultaneously usable tools |
| Y10T 407/1912 | . . . . Tool adjustable relative to holder  |
| Y10T 407/1914 | . . . . . Radially  |
| Y10T 407/1916 | . . . . . And axially   |
| Y10T 407/1918 | . . . . . Selectively   |
| Y10T 407/192  | . . . . with separate means to fasten tool to holder  |
| Y10T 407/1922 | . . . . . Wedge clamp element   |
| Y10T 407/1924 | . . . . Specified tool shape  |
| Y10T 407/1926 | . . . Plural simultaneously usable separable tools in common seat or common clamp actuator for plural simultaneously usable tools   |
| Y10T 407/1928 | . . . Tool adjustable relative to holder  |
| Y10T 407/193  | . . . . Radially  |
| Y10T 407/1932 | . . . with means to fasten tool seat to holder  |
| Y10T 407/1934 | . . . with separate means to fasten tool to holder  |
| Y10T 407/1936 | . . . . Apertured tool  |
| Y10T 407/1938 | . . . . Wedge clamp element   |
| Y10T 407/194  | . . . . . Resilient clamp jaw   |
| Y10T 407/1942 | . . . Peripherally spaced tools   |
| Y10T 407/1944 | . . . . Sectional support   |
| Y10T 407/1946 | . . Face or end mill  |
| Y10T 407/1948 | . . . with cutting edge entirely across end of tool [e.g., router bit, end mill, etc.]  |
| Y10T 407/195  | . . Compound tooth arrangement  |
| Y10T 407/1952 | . . Having peripherally spaced teeth  |
| Y10T 407/1954 | . . . Axially tapering tool   |
| Y10T 407/1956 | . . . Circumferentially staggered   |
| Y10T 407/1958 | . . . . Plural teeth spaced about a helix   |
| Y10T 407/196  | . . . Varying in cutting edge profile   |
| Y10T 407/1962 | . . . Specified tooth shape or spacing  |

|               |   |
|---------------|---|
| Y10T 407/1964 | . . . . Arcuate cutting edge  |
| Y10T 407/1966 | . . . . Helical tooth   |
| Y10T 407/20   | . Profiled circular tool  |
| Y10T 407/21   | . Arc segment tool  |
| Y10T 407/22   | . including holder having seat for inserted tool  |
| Y10T 407/2202 | . . Plural spaced seats and common holder   |
| Y10T 407/2204 | . . . Relatively adjustable seats   |
| Y10T 407/2206 | . . . Simultaneously usable   |
| Y10T 407/2208 | . . Plural simultaneously usable separable tools in common seat or common clamp actuator for plural simultaneously usable tools |
| Y10T 407/221  | . . . Adjustable tool   |
| Y10T 407/2212 | . . with tool ejector   |
| Y10T 407/2214 | . . with separate means to adjust tool to and fro relative to holder  |
| Y10T 407/2216 | . . . with indicator  |
| Y10T 407/2218 | . . . Plural provisions for adjustment  |
| Y10T 407/222  | . . . by moving tool seat   |
| Y10T 407/2222 | . . Tool adjustable relative to holder  |
| Y10T 407/2224 | . . . with indicator  |
| Y10T 407/2226 | . . . Plural provisions for adjustment  |
| Y10T 407/2228 | . . . . Plural interfering seats  |
| Y10T 407/223  | . . . . including pivotable seat or tool  |
| Y10T 407/2232 | . . . . . with detent   |
| Y10T 407/2234 | . . . . . Pivoted seat  |
| Y10T 407/2236 | . . . . . And pivotable tool  |
| Y10T 407/2238 | . . . by adjustable or replaceable stop   |
| Y10T 407/224  | . . . . Adjustable  |
| Y10T 407/2242 | . . . . . Screw   |
| Y10T 407/2244 | . . . by movement of seat relative to holder  |
| Y10T 407/2246 | . . . . Pivoted seat  |
| Y10T 407/2248 | . . . Pivoted tool  |
| Y10T 407/225  | . . . Resiliently biased tool clamping jaw  |
| Y10T 407/2252 | . . . Rectilinearly   |
| Y10T 407/2254 | . . . . including rotatable cam clamp element   |
| Y10T 407/2256 | . . . . including wedge clamp element   |
| Y10T 407/2258 | . . . . . And guide or detent   |
| Y10T 407/226  | . . . . including detent  |
| Y10T 407/2262 | . . . . Tool gripped directly by set screw  |
| Y10T 407/2264 | . . . . Slidable jaw  |
| Y10T 407/2266 | . . Holder adapted for tools of different shape   |
| Y10T 407/2268 | . . with chip breaker, guide or deflector   |

- Y10T 407/227 . . with separate means to fasten tool seat to holder
- Y10T 407/2272 . . with separate means to fasten tool to holder
- Y10T 407/2274 . . . Apertured tool
- Y10T 407/2276 . . . . with means projecting through aperture to force tool laterally against reaction surface
- Y10T 407/2278 . . . . . Tilting clamp element and separate means to tilt same
- Y10T 407/228 . . . Rotatable cam clamp element
- Y10T 407/2282 . . . including tool holding clamp and clamp actuator
- Y10T 407/2284 . . . . Wedge clamp element
- Y10T 407/2286 . . . . Resiliently biased clamp jaw
- Y10T 407/2288 . . . . . Integral with holder
- Y10T 407/229 . . . . Pivoted jaw
- Y10T 407/2292 . . . . Slidable jaw
- Y10T 407/23 . . including tool having plural alternatively usable cutting edges
- Y10T 407/235 . . with integral chip breaker, guide or deflector
- Y10T 407/24 . . with chip breaker, guide or deflector
- Y10T 407/245 . . comprising concave surface in cutting face of tool
- Y10T 407/25 . . including cut off tool
- Y10T 407/26 . . comprising cutting edge bonded to tool shank
- Y10T 407/27 . . comprising tool of specific chemical composition
- Y10T 407/28 . . Miscellaneous

### **Former US Class 408 Series**

- Y10T 408/00      Cutting by use of rotating axially moving tool**
- Y10T 408/03 . . Processes
- Y10T 408/04 . . . Bit detachable
- Y10T 408/05 . . with means to weigh or test work or product
- Y10T 408/08 . . with means to regulate operation by use of templet, tape, card, or other replaceable information supply
- Y10T 408/10 . . with interlock between machine elements
- Y10T 408/13 . . with randomly-actuated stopping means
- Y10T 408/14 . . . Responsive to condition of Tool or tool-drive
- Y10T 408/15 . . . Responsive to condition of work or product
- Y10T 408/16 . . with control means energized in response to activator stimulated by condition sensor
- Y10T 408/165 . . . to control Tool rotation
- Y10T 408/17 . . . to control infeed
- Y10T 408/172 . . . . Responsive to Tool
- Y10T 408/173 . . . . Responsive to work
- Y10T 408/175 . . . to control relative positioning of Tool and work

- Y10T 408/18 . with stopping upon completion of prescribed operation
- Y10T 408/20 . . Responsive to condition of work or product
- Y10T 408/21 . with signal, indicator, illuminator or optical means
- Y10T 408/23 . including means to cause Tool to progressively vibrate toward work
- Y10T 408/26 . with means to condition tool
- Y10T 408/29 . with means to deForm work temporarily
- Y10T 408/31 . Convertible cutting means
- Y10T 408/33 . . Utilizing common cutting Tool
- Y10T 408/34 . Combined cutting means
- Y10T 408/344 . . including Tool operating on rotating work
- Y10T 408/348 . . Plural other type cutting means
- Y10T 408/35 . . . including plural rotating tools
- Y10T 408/352 . . including rotating cutter other than rotating, axially moving Tool
- Y10T 408/353 . . . Crystalline cutter
- Y10T 408/355 . . . Utilized in cutting work or product to length
- Y10T 408/3555 . . . . Adapted to cut entire thickness of work at one pass
- Y10T 408/356 . . including plunging [single stroke] cutter
- Y10T 408/36 . Machine including plural tools
- Y10T 408/365 . . Axes of tools moving with work during operation
- Y10T 408/367 . . . including means to infeed Tool and means to infeed work or including coaxial tools
- Y10T 408/368 . . . Plural work stations
- Y10T 408/37 . . Turret of tools
- Y10T 408/375 . . Coaxial tools
- Y10T 408/378 . . . Coaxial, opposed tools
- Y10T 408/3784 . . . . with additional, converging Tool
- Y10T 408/3788 . . . . Plural pairs of coaxial, opposed tools
- Y10T 408/3792 . . . . with means to sequentially feed tools toward work
- Y10T 408/3796 . . . . with interconnected means to simultaneously feed tools
- Y10T 408/38 . . Plural, simultaneously operational tools
- Y10T 408/3806 . . . with plural simultaneously operational work stations
- Y10T 408/3809 . . . . Successively acting on workpiece
- Y10T 408/381 . . . . . Pivotaly mounted, work-advancing, work-supporting means, pivot-axis parallel to tool-axis
- Y10T 408/3811 . . . with provision for adjustment of relationship of axes
- Y10T 408/3817 . . . at least one Tool driven by orbiting wrist plate
- Y10T 408/3822 . . . at least one Tool including flexible drive connection
- Y10T 408/3828 . . . with work-infeed
- Y10T 408/3833 . . . with means to advance work relative to Tool
- Y10T 408/3839 . . . with presser-foot

- Y10T 408/3844 . . . with tool-opposing, work-engaging surface
- Y10T 408/385 . . Rotatable about parallel axes
- Y10T 408/39 . with radially outer limit of cutting edge moving to define cylinder partially, but not entirely encircled by work
- Y10T 408/42 . Axis of Tool moving with work during operation
- Y10T 408/44 . with means to apply transient, fluent medium to work or product
- Y10T 408/45 . . including Tool with duct
- Y10T 408/453 . . . and means to move gaseous fluid by application of vacuum
- Y10T 408/455 . . . Conducting channel extending to end of Tool
- Y10T 408/458 . . . including nozzle
- Y10T 408/46 . . including nozzle
- Y10T 408/47 . with work-infeed means
- Y10T 408/476 . . Driven by fluid motor
- Y10T 408/482 . . Driven by means having sliding engagement therewith
- Y10T 408/488 . . Driven by lever or connecting link
- Y10T 408/494 . . and gear to drive infeed means
- Y10T 408/50 . with product handling or receiving means
- Y10T 408/51 . . Ejector
- Y10T 408/52 . with work advancing or guiding means
- Y10T 408/54 . . Means to intermittently advance work
- Y10T 408/545 . . . Rotary, work-supporting means
- Y10T 408/55 . with work-engaging structure other than Tool or tool-support
- Y10T 408/551 . . with means actuated by work to release Tool from fixed position in Tool support
- Y10T 408/552 . . . Adapted to engage work at tool-axis
- Y10T 408/553 . . Centering means adapted to be replaced by Tool
- Y10T 408/554 . . Magnetic or suction means
- Y10T 408/556 . . Tool supporting wheel
- Y10T 408/5565 . . . Wheel-axis parallel to tool-axis
- Y10T 408/557 . . Frictionally engaging sides of opening in work
- Y10T 408/558 . . . Opening coaxial with Tool
- Y10T 408/5583 . . . . Engaging sides of opening being enlarged by Tool
- Y10T 408/5584 . . . . . Engaging surface axially advanced of tool-action
- Y10T 408/5586 . . . . . Engaging surface subsequent to tool-action on that surface
- Y10T 408/5587 . . . . Valve fitting
- Y10T 408/559 . . Funnel like work-engaging surface cooperating with protuberance on work
- Y10T 408/56 . . Adapted to "form" recession in work
- Y10T 408/5605 . . . Recession at tool-axis
- Y10T 408/561 . . Having tool-opposing, work-engaging surface
- Y10T 408/5612 . . . Tool having shiftable tool-axis



|                |           |   |
|----------------|-----------|---|
| Y10T 408/5614  | . . .     | Angularly adjustable surface  |
| Y10T 408/5616  | . . . .   | Adjustable about axis that is parallel to tool-axis                               |
| Y10T 408/5617  | . . .     | Laterally adjustable surface  |
| Y10T 408/5619  | . . .     | Flexible or concatenated member   |
| Y10T 408/5621  | . . .     | Connected to Tool through opening being enlarged by Tool                          |
| Y10T 408/5622  | . . . .   | Plural, coaxially opposing, work-engaging means                                   |
| Y10T 408/5623  | . . .     | with presser foot   |
| Y10T 408/56238 | . . . .   | Encompassed by Tool during cut  |
| Y10T 408/56245 | . . . .   | including tool-guide [or bushing]   |
| Y10T 408/56253 | . . . .   | Base supported machine  |
| Y10T 408/5626  | . . .     | with means to move Tool relative to other work-engaging structure along tool-axis |
| Y10T 408/5627  | . . . .   | Having sliding engagement therewith   |
| Y10T 408/56275 | . . . . . | Screw coaxial with Tool   |
| Y10T 408/5628  | . . .     | Tool having screw-thread engaging frame to cause infeed                           |
| Y10T 408/563   | . .       | Work-gripping clamp   |
| Y10T 408/5633  | . . .     | Adapted to coaxially grip round work  |
| Y10T 408/56337 | . . . .   | Oppositely moving lateral clamps  |
| Y10T 408/5634  | . . . . . | Three or more moving clamps   |
| Y10T 408/56343 | . . . .   | Base supported clamp  |
| Y10T 408/5635  | . . .     | Oppositely moving lateral clamps  |
| Y10T 408/5638  | . . .     | Adjustable relative to tool-axis  |
| Y10T 408/564   | . .       | Movable relative to Tool along tool-axis  |
| Y10T 408/5647  | . . .     | including means to move Tool  |
| Y10T 408/5653  | . . .     | with means to bias Tool away from work  |
| Y10T 408/566   | . .       | Axially fixed to Tool   |
| Y10T 408/5665  | . . .     | Work-engaging surface parallel to tool-axis                                       |
| Y10T 408/567   | . .       | Adjustable, tool-guiding jig  |
| Y10T 408/568   | . . .     | Guide bushing   |
| Y10T 408/569   | . .       | Bushing   |
| Y10T 408/57    | . .       | Tool-support with means to receive tool-position indicator                        |
| Y10T 408/60    | . .       | Plural tool-assemblages   |
| Y10T 408/62    | . .       | Coaxial   |
| Y10T 408/625   | . . .     | Spring biased   |
| Y10T 408/63    | . .       | Tool or tool-support with torque-applying ratchet                                 |
| Y10T 408/637   | . .       | with thrust applying means  |
| Y10T 408/639   | . . .     | Reversible ratchet  |
| Y10T 408/641   | . . .     | Double-acting ratchet   |
| Y10T 408/643   | . .       | Reversible ratchet  |
| Y10T 408/65    | . .       | Means to drive tool   |

- Y10T 408/655 . . with specific Tool structure
- Y10T 408/66 . . Friction gearing
- Y10T 408/665 . . Universal or flexible drive connection to rotate Tool
- Y10T 408/67 . . Belt and pulley
- Y10T 408/675 . . including means to move Tool along tool-axis
- Y10T 408/6757 . . . Fluid means
- Y10T 408/6764 . . . Laterally adjustable Tool
- Y10T 408/6771 . . . with clutch means
- Y10T 408/6774 . . . . including plural speed drive
- Y10T 408/6776 . . . . Actuated by Tool movement
- Y10T 408/6779 . . . Rack and pinion
- Y10T 408/6786 . . . Manually moved lever
- Y10T 408/6793 . . . Screw coaxial with Tool
- Y10T 408/68 . Tool or tool-support with thrust-applying machine-engaging screw
- Y10T 408/70 . Tool or tool-support with torque-applying clutch
- Y10T 408/72 . . Friction clutch
- Y10T 408/73 . Tool or tool-support with torque-applying spline
- Y10T 408/75 . . Relative motion of splined shaft and tool-support causing release of Tool from operating position
- Y10T 408/76 . Tool-carrier with vibration-damping means
- Y10T 408/78 . Tool of specific diverse material
- Y10T 408/81 . Tool having crystalline cutting edge
- Y10T 408/83 . Tool-support with means to move Tool relative to tool-support
- Y10T 408/85 . . to move radially
- Y10T 408/852 . . . with Tool releasing trigger
- Y10T 408/853 . . . . and separate Tool setting means
- Y10T 408/854 . . . to move eccentrically mounted Tool
- Y10T 408/855 . . . . Tool-support including plural, adjustable sections
- Y10T 408/856 . . . Moving means including pinion engaging rack-like surface of Tool
- Y10T 408/858 . . . Moving means including wedge, screw or cam
- Y10T 408/8583 . . . . with resiliently urged Tool
- Y10T 408/85837 . . . . . with spring retainer
- Y10T 408/85843 . . . . . Resilient Tool or tool-support
- Y10T 408/8585 . . . . including oppositely moving, diverging tools
- Y10T 408/8588 . . . . Axially slidable moving-means
- Y10T 408/85884 . . . . . Tool pivotally mounted on support
- Y10T 408/85888 . . . . . Having axially spaced shoulders
- Y10T 408/85892 . . . . . Screw driven wedge or cam
- Y10T 408/85893 . . . . . . Screw with axis radially spaced from tool-axis
- Y10T 408/85894 . . . . . . Annular wedge-collar

|                 |           |   |
|-----------------|-----------|---|
| Y10T 408/858945 | . . . . . | Axially spaced tool-retaining collars   |
| Y10T 408/858946 | . . . . . | with travelling wedge   |
| Y10T 408/858948 | . . . . . | Tool having axially facing, collar-receiving groove                           |
| Y10T 408/858949 | . . . . . | including two-piece collar  |
| Y10T 408/85895  | . . . . . | Traveling wedge   |
| Y10T 408/858953 | . . . . . | Interfitting, tool-retaining wedge  |
| Y10T 408/858955 | . . . . . | including separable interfitting element                                      |
| Y10T 408/858957 | . . . . . | Having externally threaded shank connected to tool-support                    |
| Y10T 408/85896  | . . . . . | Annular wedge-collar  |
| Y10T 408/859    | . . . . . | Rotary cam  |
| Y10T 408/8591   | . . . . . | Scroll plate  |
| Y10T 408/85913  | . . . . . | Volute scroll   |
| Y10T 408/85915  | . . . . . | with means to rotate scroll   |
| Y10T 408/85918  | . . . . . | with adjustable means to limit scroll movement                                |
| Y10T 408/8592   | . . . . . | Coaxial with tool-axis  |
| Y10T 408/8593   | . . . . . | Wedge moving perpendicular to tool-axis                                       |
| Y10T 408/8595   | . . . . . | Pivotable tool-support  |
| Y10T 408/8598   | . . . . . | Screw extending perpendicular to tool-axis                                    |
| Y10T 408/85985  | . . . . . | Plural tools moved by diametrically opposed screws                            |
| Y10T 408/85988  | . . . . . | Screws mounted on common shaft  |
| Y10T 408/8599   | . . . . . | Tool having pitch-stabilizing ridge   |
| Y10T 408/85995  | . . . . . | with tool-holding clamp and clamp actuator                                    |
| Y10T 408/86     | . . . . . | Tool-support with means to permit positioning of the Tool relative to support |
| Y10T 408/865    | . . . . . | Pivotable Tool  |
| Y10T 408/868    | . . . . . | with multiple cutting positions   |
| Y10T 408/87     | . . . . . | Tool having stepped cutting edges   |
| Y10T 408/8713   | . . . . . | including means to permit both radial and axial positioning of edge           |
| Y10T 408/8725   | . . . . . | including means to permit relative axial positioning of edges                 |
| Y10T 408/8729   | . . . . . | with work-engaging structure other than cutting edge                          |
| Y10T 408/8734   | . . . . . | including central Tool axially movable relative to support                    |
| Y10T 408/8738   | . . . . . | including inverse cutting edge  |
| Y10T 408/875    | . . . . . | including means to "form" depression in work                                  |
| Y10T 408/88     | . . . . . | including central-lead  |
| Y10T 408/885    | . . . . . | including tool-holding clamp and clamp actuator                               |
| Y10T 408/888    | . . . . . | Movable along tool-axis   |
| Y10T 408/89     | . . . . . | Tool or Tool with support   |
| Y10T 408/892    | . . . . . | with work-engaging structure detachable from cutting edge                     |
| Y10T 408/8923   | . . . . . | Removable central lead  |
| Y10T 408/8925   | . . . . . | Depth-limiting member   |
| Y10T 408/8928   | . . . . . | Adjustable  |

- Y10T 408/893 . . Hollow milling Tool
- Y10T 408/895 . . Having axial, core-receiving central portion
- Y10T 408/8953 . . . with lateral outlet
- Y10T 408/8957 . . . and having stepped cutting edges
- Y10T 408/896 . . Having product-receiving chamber
- Y10T 408/8967 . . . and central lead-screw
- Y10T 408/8973 . . . and central lead
- Y10T 408/898 . . Helical ribbon Tool
- Y10T 408/899 . . Having inversely angled cutting edge
- Y10T 408/90 . . . and axially extending peripheral cutting spur
- Y10T 408/901 . . Having axially extending peripheral cutting spur
- Y10T 408/902 . . Having central lead-screw
- Y10T 408/904 . . with pitch-stabilizing ridge
- Y10T 408/9042 . . . and radially spaced cutting edge
- Y10T 408/9044 . . . including cutting teeth of different width
- Y10T 408/9045 . . . . and different root circles
- Y10T 408/9046 . . . including tapered section
- Y10T 408/90467 . . . . and relieved cutting edge
- Y10T 408/90473 . . . . including work-embracing cutting edges
- Y10T 408/9048 . . . Extending outwardly from tool-axis
- Y10T 408/905 . . Having stepped cutting edges
- Y10T 408/906 . . . Axially spaced
- Y10T 408/9065 . . . . with central lead
- Y10T 408/907 . . including detailed shank
- Y10T 408/909 . . Having peripherally spaced cutting edges
- Y10T 408/9093 . . . Each formed by a pair of axially facing facets
- Y10T 408/9095 . . . with axially extending relief channel
- Y10T 408/9097 . . . . Spiral channel
- Y10T 408/9098 . . . with means to retain Tool to support
- Y10T 408/90987 . . . . Wedge means
- Y10T 408/90993 . . . . Screw driven means
- Y10T 408/91 . . Machine frame
- Y10T 408/92 . . with counterweight mechanism
- Y10T 408/93 . . including pivotally mounted tool-carrier
- Y10T 408/935 . . . including laterally movable tool-carrier
- Y10T 408/94 . . Tool-support
- Y10T 408/95 . . with tool-retaining means
- Y10T 408/953 . . . Clamping jaws
- Y10T 408/957 . . . Tool adapter
- Y10T 408/96 . . Miscellaneous

- Y10T 408/97 . . Drill bushings
- Y10T 408/98 . . Drill guide
- Y10T 408/99 . . Adjustable stop

### **Former US Class 409 Series**

#### **Y10T 409/00 Gear cutting, milling, or planing**

- Y10T 409/10 . Gear cutting
- Y10T 409/100159 . . with regulation of operation by use of templet, card, or other replaceable information supply
- Y10T 409/100318 . . . including follower for templet
- Y10T 409/100477 . . and burnishing simultaneously
- Y10T 409/100636 . . with compensation for backlash in drive means
- Y10T 409/100795 . . with work or product advancing
- Y10T 409/100954 . . . Utilizing transfer arm
- Y10T 409/101113 . . Gear chamfering or deburring
- Y10T 409/101272 . . . Using relatively reciprocating or oscillating cutter
- Y10T 409/101431 . . Gear tooth shape generating
- Y10T 409/10159 . . . Hobbing
- Y10T 409/101749 . . . . Process
- Y10T 409/101908 . . . . . Generating tooth for bevel gear
- Y10T 409/102067 . . . . including means to shift hob between cutting passes
- Y10T 409/102226 . . . . with control means energized in response to activator stimulated by condition sensor
- Y10T 409/102385 . . . . Plural hobs
- Y10T 409/102544 . . . . including infeed means
- Y10T 409/102703 . . . . . to infeed along axis of work rotation
- Y10T 409/102862 . . . . . Infeed of cutter
- Y10T 409/103021 . . . . . and infeed radially of axis of work rotation
- Y10T 409/10318 . . . . . Vertically
- Y10T 409/103339 . . . . . to infeed radially of axis of work rotation
- Y10T 409/103498 . . . . . Infeed of cutter
- Y10T 409/103657 . . . . . and infeed tangentially of work axis
- Y10T 409/103816 . . . Milling with radial faced tool
- Y10T 409/103975 . . . . Process
- Y10T 409/104134 . . . . Adapted to cut bevel gear
- Y10T 409/104293 . . . . with means to continuously rotate work and means to co-form all teeth of gear
- Y10T 409/104452 . . . . . Bevel gear having nonparallel opposing tooth flanks
- Y10T 409/104611 . . . . . including rotary cutter cradle

|                 |           |   |
|-----------------|-----------|---|
| Y10T 409/10477  | . . .     | by relative axial movement between synchronously indexing or rotating work and cutter             |
| Y10T 409/104929 | . . . .   | Crowning  |
| Y10T 409/105088 | . . . .   | Displacing cutter axially relative to work [e.g., gear shaving, etc.]                             |
| Y10T 409/105247 | . . . . . | Using gear shaper-cutter  |
| Y10T 409/105406 | . . . . . | Plural distinct cutting edges   |
| Y10T 409/105565 | . . . . . | Cutting rotating work, the axis of which lies in a plane intersecting the cutter axis             |
| Y10T 409/105724 | . . .     | Gear shaving  |
| Y10T 409/105883 | . . .     | Using rotary cutter   |
| Y10T 409/106042 | . . . .   | having axially directed cutting edge  |
| Y10T 409/106201 | . . . .   | Plural rotary cutters   |
| Y10T 409/10636  | . . . .   | On reciprocating carriage   |
| Y10T 409/106519 | . . .     | Using reciprocating or oscillating cutter   |
| Y10T 409/106678 | . . . .   | Bevel gear cutting  |
| Y10T 409/106837 | . . . . . | Dual cutters  |
| Y10T 409/106996 | . . . . . | Double acting cutter  |
| Y10T 409/107155 | . . . .   | Rectilinearly reciprocating cutter  |
| Y10T 409/107314 | . . . . . | Cutter comprising a rack  |
| Y10T 409/107473 | . . .     | Making a noncircular gear, worm, rotor, or a planar-faced gear                                    |
| Y10T 409/107632 | . .       | Gear shaving  |
| Y10T 409/107791 | . .       | Using rotary cutter   |
| Y10T 409/10795  | . . .     | Process   |
| Y10T 409/108109 | . . .     | End mill  |
| Y10T 409/108268 | . . . .   | Radially faced  |
| Y10T 409/108427 | . . . . . | Using plural, selectively usable tools  |
| Y10T 409/108586 | . . .     | Plural rotary cutters   |
| Y10T 409/108745 | . . .     | Cutting action along work axis  |
| Y10T 409/108904 | . . . .   | Cutting action intersecting work axis   |
| Y10T 409/109063 | . .       | Using reciprocating or oscillating cutter   |
| Y10T 409/109222 | . . .     | Broach  |
| Y10T 409/109381 | . . .     | including circumferentially disposed cutting edges  |
| Y10T 409/10954  | . .       | Work dividing or checking of work position or division  |
| Y10T 409/109699 | . .       | with work clamping  |
| Y10T 409/20     | . .       | with refurbishing of cutter   |
| Y10T 409/30     | . .       | Milling   |
| Y10T 409/300056 | . .       | Thread or helix generating  |
| Y10T 409/300112 | . . .     | Process   |
| Y10T 409/300168 | . . .     | with means to regulate operation by use of templet, card, or other replaceable information supply |
| Y10T 409/300224 | . . . .   | Complete cycle  |

|                 |           |  |
|-----------------|-----------|--|
| Y10T 409/30028  | . . . .   | to regulate cutting depth [e.g., relief, taper, etc.]  |
| Y10T 409/300336 | . . . .   | to regulate rate of motion [e.g., stopping, etc.]  |
| Y10T 409/300392 | . . .     | with nonthread or nonhelix generating, milling cutter  |
| Y10T 409/300448 | . . .     | with means to advance work or product  |
| Y10T 409/300504 | . . .     | Plural cutters or work holders   |
| Y10T 409/30056  | . . .     | with planetary cutter  |
| Y10T 409/300616 | . . .     | Work means to move work axially and means to interrelate work movement with cutter rotation  |
| Y10T 409/300672 | . . .     | with means to rotate work and means to interrelatedly infeed the work relative to the cutter   |
| Y10T 409/300728 | . . . .   | Means to infeed the cutter   |
| Y10T 409/300784 | . . .     | with means to circumferentially adjust the position of the cutter with respect to the work   |
| Y10T 409/30084  | . .       | with regulation of operation by templet, card, or other replaceable information supply   |
| Y10T 409/300896 | . . .     | with sensing of numerical information and regulation without mechanical connection between sensing means and regulated means [i.e., numerical control] |
| Y10T 409/300952 | . . .     | to cut lock key  |
| Y10T 409/301008 | . . . .   | Using templet other than a key   |
| Y10T 409/301064 | . . . .   | Complete cycle   |
| Y10T 409/30112  | . . .     | Process  |
| Y10T 409/301176 | . . .     | Reproducing means  |
| Y10T 409/301232 | . . . .   | including pantograph cutter-carrier  |
| Y10T 409/301288 | . . . . . | and means to move work at work station   |
| Y10T 409/301344 | . . . . . | About work axis  |
| Y10T 409/3014   | . . . . . | Pivotally supported for vertical movement  |
| Y10T 409/301456 | . . . . . | and means to counterbalance carrier  |
| Y10T 409/301512 | . . . . . | including plural cutters   |
| Y10T 409/301568 | . . . . . | by use of pivotally supported tracer   |
| Y10T 409/301624 | . . . . . | Duplicating means  |
| Y10T 409/30168  | . . . . . | with means for operation without manual intervention   |
| Y10T 409/301736 | . . . . . | to make a double curvature foil  |
| Y10T 409/301792 | . . . . . | including means to sense optical or magnetic image   |
| Y10T 409/301848 | . . . . . | with means to support templet above or under work  |
| Y10T 409/301904 | . . . . . | including tracer adapted to trigger electrical energy  |
| Y10T 409/30196  | . . . . . | to actuate electrically driven work or tool moving means   |
| Y10T 409/302016 | . . . . . | to actuate fluid driven work or tool moving means  |
| Y10T 409/302072 | . . . . . | including tracer adapted to trigger fluid energy   |
| Y10T 409/302128 | . . . . . | to actuate fluid driven work or tool moving means  |
| Y10T 409/302184 | . . . . . | including cutter and tracer fixed to move laterally together   |

|                 |           |   |
|-----------------|-----------|---|
| Y10T 409/30224  | . . . . . | and provision for circumferential relative movement of cutter and work  |
| Y10T 409/302296 | . . . . . | including plural cutters  |
| Y10T 409/302352 | . . . . . | including plural cutters  |
| Y10T 409/302408 | . . . . . | including cross-slide tool carrier  |
| Y10T 409/302464 | . . . . . | including plural cutters  |
| Y10T 409/30252  | . . . . . | including cross-slide tool carrier  |
| Y10T 409/302576 | . . . . . | with means to support templet above or under work   |
| Y10T 409/302632 | . . . . . | with provision for circumferential relative movement of cutter and work   |
| Y10T 409/302688 | . . . . . | with provision for circumferential relative movement of cutter and work   |
| Y10T 409/302744 | . . . . . | and means for operation without manual intervention   |
| Y10T 409/3028   | . . . . . | including tracer adapted to trigger electrical or fluid energy  |
| Y10T 409/302856 | . . . . . | For using planar templet in cutting profile [e.g., contour map from planar map, etc.]                             |
| Y10T 409/302912 | . . . . . | including means for operation without manual intervention   |
| Y10T 409/302968 | . . . . . | including means for operation without manual intervention   |
| Y10T 409/303024 | . . . . . | including simultaneously usable plural tracers or including tracer adapted to simultaneously use plural templates |
| Y10T 409/30308  | . . . . . | to make a double curvature foil   |
| Y10T 409/303136 | . . . . . | to make a double curvature foil   |
| Y10T 409/303192 | . . . . . | including cutter and tracer fixed to move together  |
| Y10T 409/303248 | . . . . . | with provision for circumferential relative movement of cutter and work   |
| Y10T 409/303304 | . . . . . | and provision for circumferential relative movement of cutter and work  |
| Y10T 409/30336  | . . . . . | including cutter and tracer fixed to move together  |
| Y10T 409/303416 | . . . . . | Templet, tracer, or cutter  |
| Y10T 409/303472 | . . . . . | Tracer  |
| Y10T 409/303528 | . . . . . | Adapted to trigger electrical energy  |
| Y10T 409/303584 | . . . . . | Photocell   |
| Y10T 409/30364  | . . . . . | Adapted to trigger fluid energy   |
| Y10T 409/303696 | . . . . . | Templet   |
| Y10T 409/303752 | . . . . . | Process   |
| Y10T 409/303808 | . . . . . | including infeeding   |
| Y10T 409/303864 | . . . . . | with means to weigh or test work or product   |
| Y10T 409/30392  | . . . . . | with means to protect operative or machine [e.g., guard, safety device, etc.]                                     |
| Y10T 409/303976 | . . . . . | with means to control temperature or lubricate  |
| Y10T 409/304032 | . . . . . | Cutter or work  |
| Y10T 409/304088 | . . . . . | with means to remove chip   |
| Y10T 409/304144 | . . . . . | Means to trim edge  |
| Y10T 409/3042   | . . . . . | Means to remove scale or raised surface imperfection  |
| Y10T 409/304256 | . . . . . | Means to remove flash or burr   |



|                 |           |  |
|-----------------|-----------|--|
| Y10T 409/304312 | . .       | with means to dampen vibration   |
| Y10T 409/304368 | . .       | Means to mill epitrochoidal shape  |
| Y10T 409/304424 | . .       | Means for internal milling   |
| Y10T 409/30448  | . .       | with detachable or auxiliary cutter support to convert cutting action                |
| Y10T 409/304536 | . .       | including means to infeed work to cutter   |
| Y10T 409/304592 | . . .     | with compensation for backlash in drive means  |
| Y10T 409/304648 | . . .     | with control means energized in response to activator stimulated by condition sensor |
| Y10T 409/304704 | . . . .   | In response to cutter or cutter carriage   |
| Y10T 409/30476  | . . . .   | In response to work or work carriage   |
| Y10T 409/304816 | . . . . . | to control rate of infeed or return  |
| Y10T 409/304872 | . . . . . | to control limit of infeed   |
| Y10T 409/304928 | . . . . . | Adapted to hydraulically or pneumatically stimulate control                          |
| Y10T 409/304984 | . . . . . | Adapted to electrically stimulate control  |
| Y10T 409/30504  | . . . .   | to control rate of infeed or return  |
| Y10T 409/305096 | . . . .   | to effect stopping of infeed   |
| Y10T 409/305152 | . . .     | with means to change rate of infeed  |
| Y10T 409/305208 | . . .     | Means to mill indeterminate length work  |
| Y10T 409/305264 | . . .     | Multiple work stations   |
| Y10T 409/30532  | . . .     | with means to advance work or product  |
| Y10T 409/305376 | . . . .   | Vertically   |
| Y10T 409/305432 | . . . .   | Endless or orbital work or product advancing means                                   |
| Y10T 409/305488 | . . .     | to reciprocate or oscillate work   |
| Y10T 409/305544 | . . .     | with work holder   |
| Y10T 409/3056   | . . . .   | and means to selectively position work   |
| Y10T 409/305656 | . . . .   | including means to support work for rotation during operation                        |
| Y10T 409/305712 | . . . . . | and including means to infeed cutter toward work axis                                |
| Y10T 409/305768 | . . . . . | with linear movement of work   |
| Y10T 409/305824 | . . . . . | with angular movement of work  |
| Y10T 409/30588  | . . .     | including friction gearing drive   |
| Y10T 409/305936 | . . .     | including fluid drive  |
| Y10T 409/305992 | . .       | with means to effect stopping upon completion of operation                           |
| Y10T 409/306048 | . .       | with means to advance work or product  |
| Y10T 409/306104 | . . .     | Endless or orbital work or product advancing means                                   |
| Y10T 409/30616  | . .       | with means to precisely reposition work  |
| Y10T 409/306216 | . .       | Randomly manipulated, work supported, or work following device                       |
| Y10T 409/306272 | . . .     | For machining commutator   |
| Y10T 409/306328 | . . .     | For cutting longitudinal groove in shaft [e.g., keyway, etc.]                        |
| Y10T 409/306384 | . . .     | with work supported guide means  |
| Y10T 409/30644  | . . . .   | to guide tool to move in arcuate path  |

|                 |           |   |
|-----------------|-----------|---|
| Y10T 409/306496 | . . .     | with work follower  |
| Y10T 409/306552 | . . .     | Randomly manipulated  |
| Y10T 409/306608 | . . . .   | End mill [e.g., router, etc.]   |
| Y10T 409/306664 | . .       | including means to infeed rotary cutter toward work   |
| Y10T 409/30672  | . . .     | with means to limit penetration into work   |
| Y10T 409/306776 | . . .     | Axially   |
| Y10T 409/306832 | . . . .   | with infeed control means energized in response to activator stimulated by condition sensor |
| Y10T 409/306888 | . . . . . | In response to cutter condition   |
| Y10T 409/306944 | . . . . . | In response to work condition   |
| Y10T 409/307    | . . . .   | with work holder  |
| Y10T 409/307056 | . . . .   | and laterally   |
| Y10T 409/307112 | . . . . . | Simultaneously  |
| Y10T 409/307168 | . . . .   | Plural cutters  |
| Y10T 409/307224 | . . .     | with infeed control means energized in response to activator stimulated by condition sensor |
| Y10T 409/30728  | . . . .   | In response to cutter condition   |
| Y10T 409/307336 | . . . .   | In response to work condition   |
| Y10T 409/307392 | . . .     | with means to change rate of infeed   |
| Y10T 409/307448 | . . .     | with work holder  |
| Y10T 409/307504 | . . . .   | Indexable   |
| Y10T 409/30756  | . . .     | Machining arcuate surface   |
| Y10T 409/307616 | . . . .   | with means to move cutter eccentrically   |
| Y10T 409/307672 | . . .     | Angularly adjustable cutter head  |
| Y10T 409/307728 | . . .     | including gantry-type cutter-carrier  |
| Y10T 409/307784 | . . .     | Plural cutters  |
| Y10T 409/30784  | . .       | including means to adjustably position cutter   |
| Y10T 409/307896 | . . .     | with work holder or guide   |
| Y10T 409/307952 | . . .     | Linear adjustment   |
| Y10T 409/308008 | . . . .   | with control for adjustment means responsive to activator stimulated by condition sensor    |
| Y10T 409/308064 | . . . . . | Responsive to position of cutter  |
| Y10T 409/30812  | . . . . . | and means to clamp cutter support in adjusted position                                      |
| Y10T 409/308176 | . . . .   | with position indicator or limit means  |
| Y10T 409/308232 | . . . .   | and angular adjustment  |
| Y10T 409/308288 | . . . .   | including gantry-type cutter-carrier  |
| Y10T 409/308344 | . . . .   | Plural cutters  |
| Y10T 409/3084   | . . .     | with position indicator or limit means  |
| Y10T 409/308456 | . . .     | with right angle cutter drive   |
| Y10T 409/308512 | . . .     | Compound angular adjustment   |
| Y10T 409/308568 | . . .     | Plural cutters  |

- Y10T 409/308624 . . with limit means to aid in positioning of cutter bit or work [e.g., gauge, stop, etc.]
- Y10T 409/30868 . . Work support
- Y10T 409/308736 . . . with position indicator or stop
- Y10T 409/308792 . . . Indexable
- Y10T 409/308848 . . . . including dividing head
- Y10T 409/308904 . . . . . Multiple row dividing head
- Y10T 409/30896 . . . with angular adjustment
- Y10T 409/309016 . . . with work holder or guide
- Y10T 409/309072 . . . . including cutter limited to rotary motion
- Y10T 409/309128 . . . with means to adjust work support vertically
- Y10T 409/309184 . . including cutter limited to rotary motion
- Y10T 409/30924 . . . Cutter turning about vertical axis
- Y10T 409/309296 . . Detachable or repositionable tool head
- Y10T 409/309352 . . Cutter spindle or spindle support
- Y10T 409/309408 . . . with cutter holder
- Y10T 409/309464 . . . . and draw bar
- Y10T 409/30952 . . with cutter holder
- Y10T 409/309576 . . Machine frame
- Y10T 409/309632 . . . Overarm harness structure
- Y10T 409/309688 . . . including counterbalancing means
- Y10T 409/309744 . . . including means to compensate for deformation
- Y10T 409/3098 . . . . Deflection of cutter spindle
- Y10T 409/309856 . . . Convertible from lathe
- Y10T 409/309912 . . . including relatively movable components and means to relatively immobilize these components
- Y10T 409/309968 . . Tailstock
- Y10T 409/40 . . Broaching
- Y10T 409/400175 . . Process
- Y10T 409/40035 . . with control means energized in response to activator stimulated by condition sensor
- Y10T 409/400525 . . . Responsive to condition of work or product
- Y10T 409/4007 . . with means to distribute cutter infeed force
- Y10T 409/400875 . . with means to select cutter or to select or modify cutter drive
- Y10T 409/40105 . . with means to clean, lubricate, or modify temperature of work or cutter
- Y10T 409/401225 . . with product handling means
- Y10T 409/4014 . . . Between plural broaching stations
- Y10T 409/401575 . . . Means to eject broached product
- Y10T 409/40175 . . . Chip removal means
- Y10T 409/401925 . . with means to protect operative or machine [e.g., guard, safety device, etc.]
- Y10T 409/4021 . . . with safety means for overload or safety interlock

- Y10T 409/402275 . . with work immobilizer and means to activate work immobilizer interrelated with cutter infeed, work infeed, or work advance
- Y10T 409/40245 . . with work infeed or advancing means and means to clamp the work thereto, which clamping means is interrelated with work or cutter infeed
- Y10T 409/402625 . . Means to remove flash or burr
- Y10T 409/4028 . . Means for cutting groove
- Y10T 409/402975 . . . Arcuate groove in cylindrical surface
- Y10T 409/40315 . . . . Rifling
- Y10T 409/403325 . . Orbital carrier for cutter
- Y10T 409/4035 . . Orbital carrier for work
- Y10T 409/403675 . . with means to cyclically manipulate cutter or cutter support
- Y10T 409/40385 . . . to reorient, introduce, or remove cutter
- Y10T 409/404025 . . . Cutter released to interim support at termination of cutting stroke
- Y10T 409/4042 . . . to remove and return cutter to cutter support
- Y10T 409/404375 . . with plural cutters
- Y10T 409/40455 . . with means to advance, infeed, or manipulate work
- Y10T 409/404725 . . . Interrelated with cutter infeed
- Y10T 409/4049 . . . . including means supporting work and additional means opposing infeed force
- Y10T 409/405075 . . . . including work indexing means for sequential cutting of different surfaces of a single workpiece
- Y10T 409/40525 . . . . including work indexing means for sequential cutting of surfaces of different workpieces
- Y10T 409/405425 . . . . with means to retract work from path of tool's idle return stroke
- Y10T 409/4056 . . . to infeed work past cutter
- Y10T 409/405775 . . with means to hold work during cutting
- Y10T 409/40595 . . . including work clamping means
- Y10T 409/406125 . . . with means to adjust or facilitate adjustment of work or work holder
- Y10T 409/4063 . . . with means on work or work holder to guide cutter during infeed
- Y10T 409/406475 . . Cutter infeed means
- Y10T 409/40665 . . . Imparting rectilinear motion to cutter
- Y10T 409/406825 . . . . and rotary motion to cutter
- Y10T 409/407 . . . . Fluid powered means
- Y10T 409/407175 . . . . Rack means
- Y10T 409/40735 . . . . Screw means
- Y10T 409/407525 . . Machine frame
- Y10T 409/4077 . . Cutter support or guide
- Y10T 409/50 . . Planing
- Y10T 409/500164 . . with regulation of operation by templet, card, or other replaceable information supply
- Y10T 409/500328 . . . including use of tracer adapted to trigger electrical or fluid energy

|                 |           |  |
|-----------------|-----------|--|
| Y10T 409/500492 | . . . .   | including provision for circumferential relative movement of cutter and work |
| Y10T 409/500656 | . . .     | including provision for circumferential relative movement of cutter and work |
| Y10T 409/50082  | . .       | Process  |
| Y10T 409/500984 | . .       | with means to lubricate  |
| Y10T 409/501148 | . .       | with product handling means  |
| Y10T 409/501312 | . .       | Randomly manipulated, work supported, or work following device               |
| Y10T 409/501476 | . .       | Means to remove flash or burr  |
| Y10T 409/50164  | . . .     | Elongated work   |
| Y10T 409/501804 | . . . .   | Flash or burr inside hollow work   |
| Y10T 409/501968 | . . . .   | Transverse burr  |
| Y10T 409/502132 | . . .     | Flat work  |
| Y10T 409/502296 | . .       | of commutator  |
| Y10T 409/50246  | . .       | Means for trimming edge [e.g., chamfering, scarfing, etc.]                   |
| Y10T 409/502624 | . .       | Means for cutting groove   |
| Y10T 409/502788 | . . .     | Arcuate groove   |
| Y10T 409/502952 | . . . .   | For rifling  |
| Y10T 409/503116 | . . .     | Inside hollow work   |
| Y10T 409/50328  | . .       | Means for shaving by blade spanning work surface                             |
| Y10T 409/503444 | . . .     | Concave work surface [e.g., bearing, stereotype printing plate, etc.]        |
| Y10T 409/503608 | . . .     | Circumferential surface  |
| Y10T 409/503772 | . . .     | including rack driven infeed means   |
| Y10T 409/503936 | . . .     | including roller infeed means  |
| Y10T 409/5041   | . .       | Means for cutting arcuate surface  |
| Y10T 409/504264 | . . .     | Cycloidal surface  |
| Y10T 409/504428 | . . .     | with work infeed and means to arcuately reposition the cutter                |
| Y10T 409/504592 | . . .     | with work infeed and means to arcuately reposition the work                  |
| Y10T 409/504756 | . .       | with means to relatively infeed cutter and work                              |
| Y10T 409/50492  | . . .     | and means to rotate work and cutter at same rate about converging axes       |
| Y10T 409/505084 | . . .     | with plural sequentially acting cutters or with double acting cutter         |
| Y10T 409/505248 | . . .     | and means to vary rate of infeed   |
| Y10T 409/505412 | . . .     | Reciprocating work infeed means  |
| Y10T 409/505576 | . . . .   | with fluid-driven bed  |
| Y10T 409/50574  | . . . .   | with rack-driven bed   |
| Y10T 409/505904 | . . . .   | with screw-driven bed  |
| Y10T 409/506068 | . . . .   | and means to permit repositioning of cutter laterally                        |
| Y10T 409/506232 | . . .     | Reciprocating cutter infeed means  |
| Y10T 409/506396 | . . . .   | Reciprocating cutter horizontally  |
| Y10T 409/50656  | . . . . . | with work support and lead screw to reposition work support                  |

|                 |           |   |
|-----------------|-----------|---|
| Y10T 409/506724 | . . . . . | with fluid-powered means to drive cutter  |
| Y10T 409/506888 | . . . . . | with pivoting link to drive cutter  |
| Y10T 409/507052 | . . . . . | Link driven by crank  |
| Y10T 409/507216 | . . . . . | with rack to drive cutter   |
| Y10T 409/50738  | . . . . . | with screw to drive cutter  |
| Y10T 409/507544 | . . . . . | with link or cam to drive cutter  |
| Y10T 409/507708 | . . . . . | with rack to drive cutter   |
| Y10T 409/507872 | . . . . . | including means causing return stroke   |
| Y10T 409/508036 | . . . . . | Machine frame   |
| Y10T 409/5082   | . . . . . | Means to permit repositioning of cutter   |
| Y10T 409/508364 | . . . . . | Laterally   |
| Y10T 409/508528 | . . . . . | Plural independently positioned cutters   |
| Y10T 409/508692 | . . . . . | including clutch  |
| Y10T 409/508856 | . . . . . | including repositioning means and means to effect stopping thereof                          |
| Y10T 409/50902  | . . . . . | including relatively movable components and means to relatively immobilize these components |
| Y10T 409/509184 | . . . . . | Work table  |
| Y10T 409/509348 | . . . . . | Tool head   |
| Y10T 409/509512 | . . . . . | with selectively usable cutting edges   |
| Y10T 409/509676 | . . . . . | with means to permit repositioning of cutting for idle return stroke                        |
| Y10T 409/50984  | . . . . . | comprising pivotable cutter or cutter support   |

**Former US Class 428 Series**

|                    |  |
|--------------------|--|
| <b>Y10T 428/00</b> | <b>Stock material or miscellaneous articles</b>  |
| Y10T 428/10        | . Liquid crystal optical display having layer of specified composition                       |
| Y10T 428/1005      | . . Alignment layer of specified composition   |
| Y10T 428/1009      | . . . Alignment layer is inorganic   |
| Y10T 428/1014      | . . . Silicon compound [i.e., organosilicon]   |
| Y10T 428/1018      | . . . Polyamide  |
| Y10T 428/1023      | . . . Polyimide  |
| Y10T 428/1027      | . . . . Polyimidfluoride   |
| Y10T 428/1032      | . . . . Polyimidmetalo   |
| Y10T 428/1036      | . . with viewing layer of specified composition  |
| Y10T 428/1041      | . . . Polarizer or dye containing viewing layer  |
| Y10T 428/1045      | . . . Silicon compound [e.g., glass, organosilicon, etc.]                                    |
| Y10T 428/105       | . . . Ester [e.g., polycarbonate, polyacrylate, etc.]  |
| Y10T 428/1055      | . . with charge transferring layer of specified composition                                  |
| Y10T 428/1059      | . . with bonding or intermediate layer of specified composition [e.g., sealant, space, etc.] |
| Y10T 428/1064      | . . . Inorganic layer  |

|                |   |
|----------------|---|
| Y10T 428/1068  | . . . Silicon compound [i.e., organosilicon]  |
| Y10T 428/1073  | . . . Epoxy   |
| Y10T 428/1077  | . . . Ester   |
| Y10T 428/1082  | . . . Unsaturated aliphatic polymer [e.g., vinyl, etc.]   |
| Y10T 428/1086  | . . with substrate layer of specified composition   |
| Y10T 428/1091  | . . . Releasable substrate layer to expose adhesive   |
| Y10T 428/1095  | . . . Inorganic substrate layer [e.g., ceramic, metallic, glass, etc.]                                  |
| Y10T 428/11    | . Magnetic recording head   |
| Y10T 428/1107  | . . Magnetoresistive  |
| Y10T 428/1114  | . . . having tunnel junction effect   |
| Y10T 428/1121  | . . . Multilayer  |
| Y10T 428/1129  | . . . . Super lattice [e.g., giant magneto resistance [GMR] or colossal magneto resistance [CMR], etc.] |
| Y10T 428/1136  | . . . Single film   |
| Y10T 428/1143  | . . . with defined structural feature   |
| Y10T 428/115   | . . Magnetic layer composition  |
| Y10T 428/1157  | . . Substrate composition   |
| Y10T 428/1164  | . . with protective film  |
| Y10T 428/1171  | . . with defined laminate structural detail   |
| Y10T 428/1179  | . . . Head with slider structure  |
| Y10T 428/1186  | . . . with head pole component  |
| Y10T 428/1193  | . . with interlaminar component [e.g., adhesion layer, etc.]  |
| Y10T 428/12    | . All metal or with adjacent metals   |
| Y10T 428/12007 | . . Component of composite having metal continuous phase interengaged with nonmetal continuous phase    |
| Y10T 428/12014 | . . having metal particles  |
| Y10T 428/12021 | . . . having composition or density gradient or differential porosity                                   |
| Y10T 428/12028 | . . . Composite; i.e., plural, adjacent, spatially distinct metal components [e.g., layers, etc.]       |
| Y10T 428/12035 | . . . . Fiber, asbestos, or cellulose in or next to particulate component                               |
| Y10T 428/12042 | . . . . Porous component  |
| Y10T 428/12049 | . . . . Nonmetal component  |
| Y10T 428/12056 | . . . . . Entirely inorganic  |
| Y10T 428/12063 | . . . . Nonparticulate metal component  |
| Y10T 428/12069 | . . . . . Plural nonparticulate metal components  |
| Y10T 428/12076 | . . . . . . Next to each other  |
| Y10T 428/12083 | . . . . . . Nonmetal in particulate component   |
| Y10T 428/1209  | . . . . . Plural particulate metal components   |
| Y10T 428/12097 | . . . . . Nonparticulate component encloses particles   |
| Y10T 428/12104 | . . . . . Particles discontinuous   |



|                |  |
|----------------|--|
| Y10T 428/12111 | . . . . . Separated by nonmetal matrix or binder [e.g., welding electrode, etc.]   |
| Y10T 428/12118 | . . . . . Nonparticulate component has Ni-, Cu-, or Zn-base  |
| Y10T 428/12125 | . . . . . Nonparticulate component has Fe-base   |
| Y10T 428/12132 | . . . . . Next to Fe-containing particles  |
| Y10T 428/12139 | . . . . . Nonmetal particles in particulate component  |
| Y10T 428/12146 | . . . . . Nonmetal particles in a component  |
| Y10T 428/12153 | . . . Interconnected void structure [e.g., permeable, etc.]  |
| Y10T 428/1216  | . . . Continuous interengaged phases of plural metals, or oriented fiber containing  |
| Y10T 428/12167 | . . . . . Nonmetal containing  |
| Y10T 428/12174 | . . . . . Mo or W containing   |
| Y10T 428/12181 | . . Composite powder [e.g., coated, etc.]  |
| Y10T 428/12188 | . . having marginal feature for indexing or weakened portion for severing  |
| Y10T 428/12194 | . . . For severing perpendicular to longitudinal dimension   |
| Y10T 428/12201 | . . Width or thickness variation or marginal cuts repeating longitudinally   |
| Y10T 428/12208 | . . . Variation in both width and thickness  |
| Y10T 428/12215 | . . . Marginal slots [i.e., deeper than wide]  |
| Y10T 428/12222 | . . Shaped configuration for melting [e.g., package, etc.]   |
| Y10T 428/12229 | . . Intermediate article [e.g., blank, etc.]   |
| Y10T 428/12236 | . . . Panel having nonrectangular perimeter  |
| Y10T 428/12243 | . . . . . Disk   |
| Y10T 428/1225  | . . . . . Symmetrical  |
| Y10T 428/12257 | . . . . . Only one plane of symmetry   |
| Y10T 428/12264 | . . . having outward flange, gripping means or interlocking feature  |
| Y10T 428/12271 | . . . having discrete fastener, marginal fastening, taper, or end structure  |
| Y10T 428/12278 | . . . . . Same structure at both ends of plural taper  |
| Y10T 428/12285 | . . . . . Single taper [e.g., ingot, etc.]   |
| Y10T 428/12292 | . . Workpiece with longitudinal passageway or stopweld material [e.g., for tubular stock, etc.]  |
| Y10T 428/12299 | . . Workpiece mimicking finished stock having nonrectangular or noncircular cross section  |
| Y10T 428/12306 | . . Workpiece of parallel, nonfastened components [e.g., fagot, pile, etc.]  |
| Y10T 428/12313 | . . . Arranged to avoid lateral displacement   |
| Y10T 428/12319 | . . . Composite  |
| Y10T 428/12326 | . . with provision for limited relative movement between components  |
| Y10T 428/12333 | . . Helical or with helical component  |
| Y10T 428/1234  | . . Honeycomb, or with grain orientation or elongated elements in defined angular relationship in respective components [e.g., parallel, inter- secting, etc.] |
| Y10T 428/12347 | . . Plural layers discontinuously bonded [e.g., spot-weld, mechanical fastener, etc.]  |



- Y10T 428/12354 . . Nonplanar, uniform-thickness material having symmetrical channel shape or reverse fold [e.g., making acute angle, etc.]
- Y10T 428/12361 . . having aperture or cut
- Y10T 428/12368 . . . Struck-out portion type
- Y10T 428/12375 . . having member which crosses the plane of another member [e.g., T or X cross section, etc.]
- Y10T 428/12382 . . Defined configuration of both thickness and nonthickness surface or angle therebetween [e.g., rounded corners, etc.]
- Y10T 428/12389 . . having variation in thickness
- Y10T 428/12396 . . . Discontinuous surface component
- Y10T 428/12403 . . . Longitudinally smooth and symmetrical
- Y10T 428/1241 . . Nonplanar uniform thickness or nonlinear uniform diameter [e.g., L-shape]
- Y10T 428/12417 . . . Intersecting corrugating or dimples not in a single line [e.g., waffle form, etc.]
- Y10T 428/12424 . . Mass of only fibers
- Y10T 428/12431 . . Foil or filament smaller than 6 mils
- Y10T 428/12438 . . . Composite
- Y10T 428/12444 . . Embodying fibers interengaged or between layers [e.g., paper, etc.]
- Y10T 428/12451 . . Macroscopically anomalous interface between layers
- Y10T 428/12458 . . having composition, density, or hardness gradient
- Y10T 428/12465 . . having magnetic properties, or preformed fiber orientation coordinate with shape
- Y10T 428/12472 . . Microscopic interfacial wave or roughness
- Y10T 428/12479 . . Porous [e.g., foamed, spongy, cracked, etc.]
- Y10T 428/12486 . . Laterally noncoextensive components [e.g., embedded, etc.]
- Y10T 428/12493 . . Composite; i.e., plural, adjacent, spatially distinct metal components [e.g., layers, joint, etc.]
- Y10T 428/125 . . . Deflectable by temperature change [e.g., thermostat element]
- Y10T 428/12507 . . . . More than two components
- Y10T 428/12514 . . . . One component Cu-based
- Y10T 428/12521 . . . . Both components Fe-based with more than 10% Ni
- Y10T 428/12528 . . . . Semiconductor component
- Y10T 428/12535 . . . . with additional, spatially distinct nonmetal component
- Y10T 428/12542 . . . . More than one such component
- Y10T 428/12549 . . . . . Adjacent to each other
- Y10T 428/12556 . . . . . Organic component
- Y10T 428/12562 . . . . . Elastomer
- Y10T 428/12569 . . . . . Synthetic resin
- Y10T 428/12576 . . . . . Boride, carbide or nitride component
- Y10T 428/12583 . . . . . Component contains compound of adjacent metal
- Y10T 428/1259 . . . . . Oxide

|                |           |  |
|----------------|-----------|--|
| Y10T 428/12597 | . . . .   | Noncrystalline silica or noncrystalline plural-oxide component [e.g., glass, etc.]   |
| Y10T 428/12604 | . . . .   | Film [e.g., glaze, etc.]   |
| Y10T 428/12611 | . . . .   | Oxide-containing component   |
| Y10T 428/12618 | . . . .   | Plural oxides  |
| Y10T 428/12625 | . . . .   | Free carbon containing component   |
| Y10T 428/12632 | . . .     | Four or more distinct components with alternate recurrence of each type component    |
| Y10T 428/12639 | . . .     | Adjacent, identical composition, components  |
| Y10T 428/12646 | . . . .   | Group VIII or IB metal-base  |
| Y10T 428/12653 | . . . . . | Fe, containing 0.01-1.7% carbon [i.e., steel]  |
| Y10T 428/1266  | . . .     | O, S, or organic compound in metal component   |
| Y10T 428/12667 | . . . .   | Oxide of transition metal or Al  |
| Y10T 428/12674 | . . .     | Ge- or Si-base component   |
| Y10T 428/12681 | . . .     | Ga-, In-, Tl- or Group VA metal-base component                                       |
| Y10T 428/12687 | . . .     | Pb- and Sn-base components: alternative to or next to each other                     |
| Y10T 428/12694 | . . . .   | and next to Cu- or Fe-base component   |
| Y10T 428/12701 | . . .     | Pb-base component  |
| Y10T 428/12708 | . . .     | Sn-base component  |
| Y10T 428/12715 | . . . .   | Next to Group IB metal-base component  |
| Y10T 428/12722 | . . . .   | Next to Group VIII metal-base component  |
| Y10T 428/12729 | . . .     | Group IIA metal-base component   |
| Y10T 428/12736 | . . .     | Al-base component  |
| Y10T 428/12743 | . . . .   | Next to refractory [Group IVB, VB, or VIB] metal-base component                      |
| Y10T 428/1275  | . . . .   | Next to Group VIII or IB metal-base component  |
| Y10T 428/12757 | . . . . . | Fe   |
| Y10T 428/12764 | . . . .   | Next to Al-base component  |
| Y10T 428/12771 | . . .     | Transition metal-base component  |
| Y10T 428/12778 | . . . .   | Alternative base metals from diverse categories                                      |
| Y10T 428/12785 | . . . .   | Group IIB metal-base component   |
| Y10T 428/12792 | . . . . . | Zn-base component  |
| Y10T 428/12799 | . . . . . | Next to Fe-base component [e.g., galvanized]   |
| Y10T 428/12806 | . . . .   | Refractory [Group IVB, VB, or VIB] metal-base component                              |
| Y10T 428/12812 | . . . .   | Diverse refractory group metal-base components: alternative to or next to each other |
| Y10T 428/12819 | . . . .   | Group VB metal-base component  |
| Y10T 428/12826 | . . . .   | Group VIB metal-base component   |
| Y10T 428/12833 | . . . . . | Alternative to or next to each other   |
| Y10T 428/1284  | . . . . . | W-base component   |
| Y10T 428/12847 | . . . . . | Cr-base component  |
| Y10T 428/12854 | . . . . . | Next to Co-, Fe-, or Ni-base component   |

|                |           |  |
|----------------|-----------|--|
| Y10T 428/12861 | . . . .   | Group VIII or IB metal-base component  |
| Y10T 428/12868 | . . . . . | Group IB metal-base component alternative to platinum group metal-base component [e.g., precious metal, etc.]  |
| Y10T 428/12875 | . . . . . | Platinum group metal-base component  |
| Y10T 428/12882 | . . . . . | Cu-base component alternative to Ag-, Au-, or Ni-base component  |
| Y10T 428/12889 | . . . . . | Au-base component  |
| Y10T 428/12896 | . . . . . | Ag-base component  |
| Y10T 428/12903 | . . . . . | Cu-base component  |
| Y10T 428/1291  | . . . . . | Next to Co-, Cu-, or Ni-base component   |
| Y10T 428/12917 | . . . . . | Next to Fe-base component  |
| Y10T 428/12924 | . . . . . | Fe-base has 0.01-1.7% carbon [i.e., steel]   |
| Y10T 428/12931 | . . . . . | Co-, Fe-, or Ni-base components, alternative to each other   |
| Y10T 428/12937 | . . . . . | Co- or Ni-base component next to Fe-base component   |
| Y10T 428/12944 | . . . . . | Ni-base component  |
| Y10T 428/12951 | . . . . . | Fe-base component  |
| Y10T 428/12958 | . . . . . | Next to Fe-base component  |
| Y10T 428/12965 | . . . . . | Both containing 0.01-1.7% carbon [i.e., steel]   |
| Y10T 428/12972 | . . . . . | Containing 0.01-1.7% carbon [i.e., steel]  |
| Y10T 428/12979 | . . . . . | Containing more than 10% nonferrous elements [e.g., high alloy, stainless]   |
| Y10T 428/12986 | . . .     | Adjacent functionally defined components   |
| Y10T 428/12993 | . .       | Surface feature [e.g., rough, mirror]  |
| Y10T 428/13    | . .       | Hollow or container type article [e.g., tube, vase, etc.]  |
| Y10T 428/1303  | . .       | Paper containing [e.g., paperboard, cardboard, fiberboard, etc.]   |
| Y10T 428/1307  | . . .     | Bag or tubular film [e.g., pouch, flexible food casing, envelope, etc.]  |
| Y10T 428/131   | . .       | Glass, ceramic, or sintered, fused, fired, or calcined metal oxide or metal carbide containing [e.g., porcelain, brick, cement, etc.]  |
| Y10T 428/1314  | . . .     | Contains fabric, fiber particle, or filament made of glass, ceramic, or sintered, fused, fired, or calcined metal oxide, or metal carbide or other inorganic compound [e.g., fiber glass, mineral fiber, sand, etc.] |
| Y10T 428/1317  | . . .     | Multilayer [continuous layer]  |
| Y10T 428/1321  | . . . .   | Polymer or resin containing [i.e., natural or synthetic]   |
| Y10T 428/1324  | . .       | Flexible food casing [e.g., sausage type, etc.]  |
| Y10T 428/1328  | . .       | Shrinkable or shrunk [e.g., due to heat, solvent, volatile agent, restraint removal, etc.]   |
| Y10T 428/1331  | . . .     | Single layer [continuous layer]  |
| Y10T 428/1334  | . .       | Nonself-supporting tubular film or bag [e.g., pouch, envelope, packet, etc.]   |
| Y10T 428/1338  | . . .     | Elemental metal containing   |
| Y10T 428/1341  | . . .     | Contains vapor or gas barrier, polymer derived from vinyl chloride or vinylidene chloride, or polymer containing a vinyl alcohol unit  |
| Y10T 428/1345  | . . .     | Single layer [continuous layer]  |

- Y10T 428/1348 . . Cellular material derived from plant or animal source [e.g., wood, cotton, wool, leather, etc.]
- Y10T 428/1352 . . Polymer or resin containing [i.e., natural or synthetic]
- Y10T 428/1355 . . . Elemental metal containing [e.g., substrate, foil, film, coating, etc.]
- Y10T 428/1359 . . . . Three or more layers [continuous layer]
- Y10T 428/1362 . . . Textile, fabric, cloth, or pile containing [e.g., web, net, woven, knitted, mesh, nonwoven, matted, etc.]
- Y10T 428/1366 . . . . Textile, fabric, cloth, or pile is sandwiched between two distinct layers of material unlike the textile, fabric, cloth, or pile layer
- Y10T 428/1369 . . . Fiber or fibers wound around each other or into a self-sustaining shape [e.g., yarn, braid, fibers shaped around a core, etc.]
- Y10T 428/1372 . . . Randomly noninterengaged or randomly contacting fibers, filaments, particles, or flakes
- Y10T 428/1376 . . . Foam or porous material containing
- Y10T 428/1379 . . . Contains vapor or gas barrier, polymer derived from vinyl chloride or vinylidene chloride, or polymer containing a vinyl alcohol unit
- Y10T 428/1383 . . . . Vapor or gas barrier, polymer derived from vinyl chloride or vinylidene chloride, or polymer containing a vinyl alcohol unit is sandwiched between layers [continuous layer]
- Y10T 428/1386 . . . Natural or synthetic rubber or rubber-like compound containing
- Y10T 428/139 . . . Open-ended, self-supporting conduit, cylinder, or tube-type article
- Y10T 428/1393 . . . . Multilayer [continuous layer]
- Y10T 428/1397 . . . Single layer [continuous layer]
- Y10T 428/14 . . Layer or component removable to expose adhesive
- Y10T 428/1405 . . Capsule or particulate matter containing [e.g., sphere, flake, microballoon, etc.]
- Y10T 428/141 . . Bituminous
- Y10T 428/1414 . . Ceramic, glass, glasslike, vitreous
- Y10T 428/1419 . . Wax containing
- Y10T 428/1424 . . Halogen containing compound
- Y10T 428/1429 . . . Fluorine
- Y10T 428/1433 . . . Coloring agent containing
- Y10T 428/1438 . . Metal containing
- Y10T 428/1443 . . . Aluminum
- Y10T 428/1448 . . . Coloring agent containing
- Y10T 428/1452 . . Polymer derived only from ethylenically unsaturated monomer
- Y10T 428/1457 . . . Silicon
- Y10T 428/1462 . . Polymer derived from material having at least one acrylic or alkacrylic group or the nitrile or amide derivative thereof [e.g., acrylamide, acrylate ester, etc.]
- Y10T 428/1467 . . Coloring agent
- Y10T 428/1471 . . Protective layer
- Y10T 428/1476 . . Release layer
- Y10T 428/1481 . . Dissimilar adhesives

- Y10T 428/1486 . . Ornamental, decorative, pattern, or indicia
- Y10T 428/149 . . Sectional layer removable
- Y10T 428/1495 . . . Adhesive is on removable layer
- Y10T 428/15 . Sheet, web, or layer weakened to permit separation through thickness
- Y10T 428/16 . Two dimensionally sectional layer
- Y10T 428/161 . . with frame, casing, or perimeter structure
- Y10T 428/162 . . Transparent or translucent layer or section
- Y10T 428/163 . . Next to unitary web or sheet of equal or greater extent
- Y10T 428/164 . . . Continuous two dimensionally sectional layer
- Y10T 428/166 . . . . Glass, ceramic, or metal sections [e.g., floor or wall tile, etc.]
- Y10T 428/167 . . . . Cellulosic sections [e.g., parquet floor, etc.]
- Y10T 428/168 . . . Nonrectangular
- Y10T 428/169 . . Sections connected flexibly with external fastener
- Y10T 428/17 . Three or more coplanar interfitted sections with securing means
- Y10T 428/18 . Longitudinally sectional layer of three or more sections
- Y10T 428/183 . . Next to unitary sheet of equal or greater extent
- Y10T 428/187 . . . Continuous sectional layer
- Y10T 428/19 . Sheets or webs edge spliced or joined
- Y10T 428/192 . . Sheets or webs coplanar
- Y10T 428/193 . . . Double faced corrugated sheets or webs connected
- Y10T 428/195 . . . Beveled, stepped, or skived in thickness
- Y10T 428/197 . . . with noncoplanar reinforcement
- Y10T 428/198 . . . . Pile or nap surface sheets connected
- Y10T 428/20 . Patched hole or depression
- Y10T 428/21 . Circular sheet or circular blank
- Y10T 428/211 . . Gear
- Y10T 428/213 . . Frictional
- Y10T 428/214 . . End closure
- Y10T 428/215 . . Seal, gasket, or packing
- Y10T 428/216 . . Ornamental, decorative, pattern, or indicia
- Y10T 428/218 . . Aperture containing
- Y10T 428/219 . . Edge structure
- Y10T 428/22 . Nonparticulate element embedded or inlaid in substrate and visible
- Y10T 428/23 . Sheet including cover or casing
- Y10T 428/231 . . Filled with gas other than air; or under vacuum
- Y10T 428/232 . . Encased layer derived from inorganic settable ingredient
- Y10T 428/233 . . Foamed or expanded material encased
- Y10T 428/234 . . including elements cooperating to form cells
- Y10T 428/236 . . . Honeycomb type cells extend perpendicularly to nonthickness layer
- Y10T 428/237 . . Noninterengaged fibered material encased [e.g., mat, batt, etc.]

|                |   |
|----------------|---|
| Y10T 428/238   | . . . Metal cover or casing   |
| Y10T 428/239   | . . Complete cover or casing  |
| Y10T 428/23907 | . Pile or nap type surface or component   |
| Y10T 428/23914 | . . Interlaminar  |
| Y10T 428/23921 | . . With particles  |
| Y10T 428/23929 | . . Edge feature or configured or discontinuous surface   |
| Y10T 428/23936 | . . . Differential pile length or surface   |
| Y10T 428/23943 | . . Flock surface   |
| Y10T 428/2395  | . . Nap type surface  |
| Y10T 428/23957 | . . Particular shape or structure of pile   |
| Y10T 428/23964 | . . . U-, V-, or W-shaped or continuous strand, filamentary material  |
| Y10T 428/23971 | . . . . Continuous strand with adhesive bond to backing   |
| Y10T 428/23979 | . . Particular backing structure or composition   |
| Y10T 428/23986 | . . With coating, impregnation, or bond   |
| Y10T 428/23993 | . . Composition of pile or adhesive   |
| Y10T 428/24    | . Structurally defined web or sheet [e.g., overall dimension, etc.]   |
| Y10T 428/24008 | . . including fastener for attaching to external surface  |
| Y10T 428/24017 | . . . Hook or barb  |
| Y10T 428/24025 | . . Superposed movable attached layers or components  |
| Y10T 428/24033 | . . including stitching and discrete fastener[s], coating or bond   |
| Y10T 428/24041 | . . . Discontinuous or differential coating, impregnation, or bond  |
| Y10T 428/2405  | . . . . Coating, impregnation, or bond in stitching zone only   |
| Y10T 428/24058 | . . including grain, strips, or filamentary elements in respective layers or components in angular relation |
| Y10T 428/24066 | . . . Wood grain  |
| Y10T 428/24074 | . . . Strand or strand-portions   |
| Y10T 428/24083 | . . . . Nonlinear strands or strand-portions  |
| Y10T 428/24091 | . . . . with additional layer[s]  |
| Y10T 428/24099 | . . . . . On each side of strands or strand-portions  |
| Y10T 428/24107 | . . . . . including mechanically interengaged strands, strand-portions or strand-like strips                |
| Y10T 428/24116 | . . . . Oblique to direction of web   |
| Y10T 428/24124 | . . . Fibers  |
| Y10T 428/24132 | . . including grain, strips, or filamentary elements in different layers or components parallel             |
| Y10T 428/2414  | . . including fringe  |
| Y10T 428/24149 | . . Honeycomb-like  |
| Y10T 428/24157 | . . . Filled honeycomb cells [e.g., solid substance in cavities, etc.]                                      |
| Y10T 428/24165 | . . . Hexagonally shaped cavities   |
| Y10T 428/24174 | . . including sheet or component perpendicular to plane of web or sheet                                     |
| Y10T 428/24182 | . . . Inward from edge of web or sheet  |

|                |           |  |
|----------------|-----------|--|
| Y10T 428/2419  | . .       | Fold at edge   |
| Y10T 428/24198 | . . .     | Channel-shaped edge component [e.g., binding, etc.]  |
| Y10T 428/24207 | . . .     | with strand[s] or strand-portion[s] between layers [e.g., upholstery trim, etc.]           |
| Y10T 428/24215 | . . .     | Acute or reverse fold of exterior component  |
| Y10T 428/24223 | . . . .   | Embedded in body of web  |
| Y10T 428/24231 | . . . .   | At opposed marginal edges  |
| Y10T 428/2424  | . . . . . | Annular cover  |
| Y10T 428/24248 | . . . . . | One piece  |
| Y10T 428/24256 | . . . . . | Abutted or lapped seam   |
| Y10T 428/24264 | . . .     | Particular fold structure [e.g., beveled, etc.]  |
| Y10T 428/24273 | . .       | including aperture   |
| Y10T 428/24281 | . . .     | Struck out portion type  |
| Y10T 428/24289 | . . . .   | Embedded or interlocked  |
| Y10T 428/24298 | . . .     | Noncircular aperture [e.g., slit, diamond, rectangular, etc.]                              |
| Y10T 428/24306 | . . . .   | Diamond or hexagonal   |
| Y10T 428/24314 | . . . .   | Slit or elongated  |
| Y10T 428/24322 | . . .     | Composite web or sheet   |
| Y10T 428/24331 | . . . .   | including nonapertured component   |
| Y10T 428/24339 | . . . . . | Keyed  |
| Y10T 428/24347 | . . . . . | From both sides  |
| Y10T 428/24355 | . .       | Continuous and nonuniform or irregular surface on layer or component [e.g., roofing, etc.] |
| Y10T 428/24364 | . . .     | with transparent or protective coating   |
| Y10T 428/24372 | . . .     | Particulate matter   |
| Y10T 428/2438  | . . . .   | Coated   |
| Y10T 428/24388 | . . . . . | Silicon containing coating   |
| Y10T 428/24397 | . . . .   | Carbohydrate   |
| Y10T 428/24405 | . . . .   | Polymer or resin [e.g., natural or synthetic rubber, etc.]                                 |
| Y10T 428/24413 | . . . .   | Metal or metal compound  |
| Y10T 428/24421 | . . . .   | Silicon containing   |
| Y10T 428/2443  | . . . . . | Sand, clay, or crushed rock or slate   |
| Y10T 428/24438 | . . .     | Artificial wood or leather grain surface   |
| Y10T 428/24446 | . . .     | Wrinkled, creased, crinkled or creped  |
| Y10T 428/24455 | . . . .   | Paper  |
| Y10T 428/24463 | . . . . . | Plural paper components  |
| Y10T 428/24471 | . . .     | Crackled, crazed or slit   |
| Y10T 428/24479 | . .       | including variation in thickness   |
| Y10T 428/24488 | . . .     | Differential nonuniformity at margin   |
| Y10T 428/24496 | . . .     | Foamed or cellular component   |



|                |           |  |
|----------------|-----------|--|
| Y10T 428/24504 | . . . .   | Component comprises a polymer [e.g., rubber, etc.]   |
| Y10T 428/24512 | . . . . . | Polyurethane   |
| Y10T 428/24521 | . . .     | with component conforming to contour of nonplanar surface  |
| Y10T 428/24529 | . . . .   | and conforming component on an opposite nonplanar surface  |
| Y10T 428/24537 | . . . .   | Parallel ribs and/or grooves   |
| Y10T 428/24545 | . . . .   | Containing metal or metal compound   |
| Y10T 428/24554 | . . . .   | including cellulosic or natural rubber component   |
| Y10T 428/24562 | . . .     | Interlaminar spaces  |
| Y10T 428/2457  | . . .     | Parallel ribs and/or grooves   |
| Y10T 428/24579 | . . . .   | with particulate matter  |
| Y10T 428/24587 | . . . .   | Oblique to longitudinal axis of web or sheet   |
| Y10T 428/24595 | . . .     | and varying density  |
| Y10T 428/24603 | . . . .   | Fiber containing component   |
| Y10T 428/24612 | . . .     | Composite web or sheet   |
| Y10T 428/2462  | . . . .   | with partial filling of valleys on outer surface   |
| Y10T 428/24628 | . .       | Nonplanar uniform thickness material   |
| Y10T 428/24636 | . . .     | Embodying mechanically interengaged strand[s], strand-portion[s] or strand-like strip[s] [e.g., weave, knit, etc.]           |
| Y10T 428/24645 | . . . .   | with folds in parallel planes  |
| Y10T 428/24653 | . . .     | Differential nonplanarity at margin  |
| Y10T 428/24661 | . . .     | Forming, or cooperating to form cells  |
| Y10T 428/24669 | . . .     | Aligned or parallel nonplanarities   |
| Y10T 428/24678 | . . . .   | Waffle-form  |
| Y10T 428/24686 | . . . .   | Pleats or otherwise parallel adjacent folds  |
| Y10T 428/24694 | . . . .   | Parallel corrugations  |
| Y10T 428/24702 | . . . . . | with locally deformed crests or intersecting series of corrugations  |
| Y10T 428/24711 | . . . . . | Plural corrugated components   |
| Y10T 428/24719 | . . . . . | with corrugations of respective components intersecting in plane projection  |
| Y10T 428/24727 | . . . . . | with planar component  |
| Y10T 428/24736 | . . .     | Ornamental design or indicia   |
| Y10T 428/24744 | . .       | Longitudinal or transverse tubular cavity or cell  |
| Y10T 428/24752 | . .       | Laterally noncoextensive components  |
| Y10T 428/2476  | . . .     | Fabric, cloth or textile component   |
| Y10T 428/24769 | . . .     | Cellulosic   |
| Y10T 428/24777 | . .       | Edge feature   |
| Y10T 428/24785 | . . .     | including layer embodying mechanically interengaged strands, strand portions or strand-like strips [e.g., weave, knit, etc.] |
| Y10T 428/24793 | . . .     | Comprising discontinuous or differential impregnation or bond  |
| Y10T 428/24802 | . .       | Discontinuous or differential coating, impregnation or bond [e.g., artwork, printing, retouched photograph, etc.]            |



- Y10T 428/2481 . . . including layer of mechanically interengaged strands, strand-portions or strand-like strips
- Y10T 428/24818 . . . . Knitted, with particular or differential bond sites or intersections
- Y10T 428/24826 . . . Spot bonds connect components
- Y10T 428/24835 . . . including developable image or soluble portion in coating or impregnation [e.g., safety paper, etc.]
- Y10T 428/24843 . . . with heat sealable or heat releasable adhesive layer
- Y10T 428/24851 . . . Intermediate layer is discontinuous or differential
- Y10T 428/2486 . . . . with outer strippable or release layer
- Y10T 428/24868 . . . . Translucent outer layer
- Y10T 428/24876 . . . . . Intermediate layer contains particulate material [e.g., pigment, etc.]
- Y10T 428/24884 . . . . . Translucent layer comprises natural oil, wax, resin, gum, glue, gelatin
- Y10T 428/24893 . . . including particulate material
- Y10T 428/24901 . . . . including coloring matter
- Y10T 428/24909 . . . . Free metal or mineral containing
- Y10T 428/24917 . . . including metal layer
- Y10T 428/24926 . . . including ceramic, glass, porcelain or quartz layer
- Y10T 428/24934 . . . including paper layer
- Y10T 428/24942 . . including components having same physical characteristic in differing degree
- Y10T 428/2495 . . . Thickness [relative or absolute]
- Y10T 428/24959 . . . . of adhesive layers
- Y10T 428/24967 . . . . Absolute thicknesses specified
- Y10T 428/24975 . . . . . No layer or component greater than 5 mils thick
- Y10T 428/24983 . . . Hardness
- Y10T 428/24992 . . . Density or compression of components
- Y10T 428/249921 . Web or sheet containing structurally defined element or component
- Y10T 428/249922 . . Embodying intertwined or helical component[s]
- Y10T 428/249923 . . Including interlaminar mechanical fastener
- Y10T 428/249924 . . Noninterengaged fiber-containing paper-free web or sheet which is not of specified porosity
- Y10T 428/249925 . . . Fiber-containing wood product [e.g., hardboard, lumber, or wood board, etc.]
- Y10T 428/249926 . . . Including paper layer
- Y10T 428/249927 . . . Fiber embedded in a metal matrix
- Y10T 428/249928 . . . Fiber embedded in a ceramic, glass, or carbon matrix
- Y10T 428/249929 . . . . Fibers are aligned substantially parallel
- Y10T 428/24993 . . . . . Fiber is precoated
- Y10T 428/249931 . . . . Free metal or alloy fiber
- Y10T 428/249932 . . . Fiber embedded in a layer derived from a water-settable material [e.g., cement, gypsum, etc.]

|                 |   |   |   |   |
|-----------------|---|---|---|---|
| Y10T 428/249933 | . | . | . | Fiber embedded in or on the surface of a natural or synthetic rubber matrix   |
| Y10T 428/249934 | . | . | . | Fibers are aligned substantially parallel   |
| Y10T 428/249935 | . | . | . | Fiber is nonlinear [e.g., crimped, sinusoidal, etc.]  |
| Y10T 428/249936 | . | . | . | Fiber is precoated  |
| Y10T 428/249937 | . | . | . | Fiber is precoated  |
| Y10T 428/249938 | . | . | . | Composite or conjugate fiber [e.g., fiber contains more than one chemically different material in monofilament or multifilament form, etc.] |
| Y10T 428/249939 | . | . | . | Two or more layers  |
| Y10T 428/24994  | . | . | . | Fiber embedded in or on the surface of a polymeric matrix   |
| Y10T 428/249941 | . | . | . | Fiber is on the surface of a polymeric matrix having no embedded portion  |
| Y10T 428/249942 | . | . | . | Fibers are aligned substantially parallel   |
| Y10T 428/249943 | . | . | . | Fiber is nonlinear [e.g., crimped, sinusoidal, etc.]  |
| Y10T 428/249944 | . | . | . | Fiber is precoated  |
| Y10T 428/249945 | . | . | . | Carbon or carbonaceous fiber  |
| Y10T 428/249946 | . | . | . | Glass fiber   |
| Y10T 428/249947 | . | . | . | Polymeric fiber   |
| Y10T 428/249948 | . | . | . | Fiber is precoated  |
| Y10T 428/249949 | . | . | . | Two or more chemically different fibers   |
| Y10T 428/24995  | . | . | . | Two or more layers  |
| Y10T 428/249951 | . | . | . | Including a free metal or alloy constituent   |
| Y10T 428/249952 | . | . | . | At least one thermosetting synthetic polymeric material layer   |
| Y10T 428/249953 | . | . | . | Composite having voids in a component [e.g., porous, cellular, etc.]  |
| Y10T 428/249954 | . | . | . | With chemically effective material or specified gas other than air, N, or carbon dioxide in void-containing component                       |
| Y10T 428/249955 | . | . | . | Void-containing component partially impregnated with adjacent component   |
| Y10T 428/249956 | . | . | . | Void-containing component is inorganic  |
| Y10T 428/249957 | . | . | . | Inorganic impregnant  |
| Y10T 428/249958 | . | . | . | Void-containing component is synthetic resin or natural rubbers   |
| Y10T 428/249959 | . | . | . | Void-containing component is wood or paper  |
| Y10T 428/24996  | . | . | . | With internal element bridging layers, nonplanar interface between layers, or intermediate layer of commingled adjacent foam layers         |
| Y10T 428/249961 | . | . | . | With gradual property change within a component   |
| Y10T 428/249962 | . | . | . | Void-containing component has a continuous matrix of fibers only [e.g., porous paper, etc.]   |
| Y10T 428/249963 | . | . | . | And a force disintegratable component [e.g., stencil sheet, etc.]   |
| Y10T 428/249964 | . | . | . | Fibers of defined composition   |
| Y10T 428/249965 | . | . | . | Cellulosic  |
| Y10T 428/249966 | . | . | . | Plural cellulosic components  |

|                 |           |   |
|-----------------|-----------|---|
| Y10T 428/249967 | . . .     | Inorganic matrix in void-containing component   |
| Y10T 428/249968 | . . . .   | Of hydraulic-setting material   |
| Y10T 428/249969 | . . . .   | Of silicon-containing material [e.g., glass, etc.]  |
| Y10T 428/24997  | . . . .   | Of metal-containing material  |
| Y10T 428/249971 | . . .     | Preformed hollow element-containing   |
| Y10T 428/249972 | . . . .   | Resin or rubber element   |
| Y10T 428/249973 | . . . .   | Mineral element   |
| Y10T 428/249974 | . . . .   | Metal- or silicon-containing element  |
| Y10T 428/249975 | . . .     | Void shape specified [e.g., crushed, flat, round, etc.]   |
| Y10T 428/249976 | . . .     | Voids specified as closed   |
| Y10T 428/249977 | . . . .   | Specified thickness of void-containing component [absolute or relative], numerical cell dimension or density  |
| Y10T 428/249978 | . . .     | Voids specified as micro  |
| Y10T 428/249979 | . . . .   | Specified thickness of void-containing component [absolute or relative] or numerical cell dimension   |
| Y10T 428/24998  | . . . .   | Composite has more than two layers  |
| Y10T 428/249981 | . . .     | Plural void-containing components   |
| Y10T 428/249982 | . . .     | With component specified as adhesive or bonding agent   |
| Y10T 428/249983 | . . . .   | As outermost component  |
| Y10T 428/249984 | . . . .   | Adhesive or bonding component contains voids  |
| Y10T 428/249985 | . . . .   | Composition of adhesive or bonding component specified  |
| Y10T 428/249986 | . . .     | Void-containing component contains also a solid fiber or solid particle   |
| Y10T 428/249987 | . . .     | With nonvoid component of specified composition   |
| Y10T 428/249988 | . . . .   | Of about the same composition as, and adjacent to, the void-containing component  |
| Y10T 428/249989 | . . . .   | Integrally formed skin  |
| Y10T 428/24999  | . . . .   | Inorganic   |
| Y10T 428/249991 | . . . .   | Synthetic resin or natural rubbers  |
| Y10T 428/249992 | . . . .   | Linear or thermoplastic   |
| Y10T 428/249993 | . . . . . | Hydrocarbon polymer   |
| Y10T 428/249994 | . .       | Composite having a component wherein a constituent is liquid or is contained within preformed walls [e.g., impregnant-filled, previously void containing component, etc.] |
| Y10T 428/249995 | . . .     | Constituent is in liquid form   |
| Y10T 428/249996 | . . . .   | Ink in pores  |
| Y10T 428/249997 | . . . .   | Encapsulated liquid   |
| Y10T 428/249998 | . . .     | Indefinite plurality of similar impregnated thin sheets [e.g., "decorative laminate" type, etc.]  |
| Y10T 428/249999 | . . .     | Differentially filled foam, filled plural layers, or filled layer with coat of filling material   |
| Y10T 428/25     | . .       | Web or sheet containing structurally defined element or component and including a second component containing structurally defined particles                              |

- Y10T 428/251 . . Mica
- Y10T 428/252 . . Glass or ceramic [i.e., fired or glazed clay, cement, etc.] [porcelain, quartz, etc.]
- Y10T 428/253 . . Cellulosic [e.g., wood, paper, cork, rayon, etc.]
- Y10T 428/254 . . Polymeric or resinous material
- Y10T 428/256 . . Heavy metal or aluminum or compound thereof
- Y10T 428/257 . . . Iron oxide or aluminum oxide
- Y10T 428/258 . . Alkali metal or alkaline earth metal or compound thereof
- Y10T 428/259 . . Silicic material
- Y10T 428/26 . . Web or sheet containing structurally defined element or component, the element or component having a specified physical dimension
- Y10T 428/261 . . In terms of molecular thickness or light wave length
- Y10T 428/263 . . Coating layer not in excess of 5 mils thick or equivalent
- Y10T 428/264 . . . Up to 3 mils
- Y10T 428/265 . . . . 1 mil or less
- Y10T 428/266 . . of base or substrate
- Y10T 428/268 . . Monolayer with structurally defined element
- Y10T 428/269 . . including synthetic resin or polymer layer or component
- Y10T 428/27 . . Web or sheet containing structurally defined element or component, the element or component having a specified weight per unit area [e.g., gms/sq cm, lbs/sq ft, etc.]
- Y10T 428/273 . . of coating
- Y10T 428/277 . . . Cellulosic substrate
- Y10T 428/28 . . Web or sheet containing structurally defined element or component and having an adhesive outermost layer
- Y10T 428/2804 . . Next to metal
- Y10T 428/2809 . . including irradiated or wave energy treated component
- Y10T 428/2813 . . Heat or solvent activated or sealable
- Y10T 428/2817 . . . Heat sealable
- Y10T 428/2822 . . . . Wax containing
- Y10T 428/2826 . . . . Synthetic resin or polymer
- Y10T 428/283 . . . Water activated
- Y10T 428/2835 . . including moisture or waterproof component
- Y10T 428/2839 . . with release or antistick coating
- Y10T 428/2843 . . including a primer layer
- Y10T 428/2848 . . Three or more layers
- Y10T 428/2852 . . Adhesive compositions
- Y10T 428/2857 . . . including metal or compound thereof or natural rubber
- Y10T 428/2861 . . . having readily strippable combined with readily readhearable properties [e.g., stick-ons, etc.]
- Y10T 428/2865 . . . including monomer or polymer of carbohydrate [e.g., starch, dextrin, etc.] Or protein [e.g., casein, animal protein, etc.] Or derivative thereof

|               |           |   |
|---------------|-----------|---|
| Y10T 428/287  | . . .     | including epoxy group or epoxy polymer  |
| Y10T 428/2874 | . . .     | including aldehyde or ketone condensation polymer [e.g., urea formaldehyde polymer, melamine formaldehyde polymer, etc.]                  |
| Y10T 428/2878 | . . .     | including addition polymer from unsaturated monomer   |
| Y10T 428/2883 | . . . .   | including addition polymer of diene monomer [e.g., SBR, SIS, etc.]  |
| Y10T 428/2887 | . . . .   | including nitrogen containing polymer [e.g., polyacrylonitrile, polymethacrylonitrile, etc.]  |
| Y10T 428/2891 | . . . .   | including addition polymer from alpha-beta unsaturated carboxylic acid [e.g., acrylic acid, methacrylic acid, etc.] Or derivative thereof |
| Y10T 428/2896 | . . .     | including nitrogen containing condensation polymer [e.g., polyurethane, polyisocyanate, etc.]   |
| Y10T 428/29   | . .       | Coated or structurally defined flake, particle, cell, strand, strand portion, rod, filament, macroscopic fiber or mass thereof            |
| Y10T 428/2902 | . .       | Channel shape   |
| Y10T 428/2904 | . .       | Staple length fiber   |
| Y10T 428/2905 | . . .     | Plural and with bonded intersections only   |
| Y10T 428/2907 | . . .     | with coating or impregnation  |
| Y10T 428/2909 | . . .     | Nonlinear [e.g., crimped, coiled, etc.]   |
| Y10T 428/2911 | . .       | Mica flake  |
| Y10T 428/2913 | . .       | Rod, strand, filament or fiber  |
| Y10T 428/2915 | . . .     | including textile, cloth or fabric  |
| Y10T 428/2916 | . . .     | including boron or compound thereof [not as steel]  |
| Y10T 428/2918 | . . .     | including free carbon or carbide or therewith [not as steel]  |
| Y10T 428/292  | . . . .   | In coating or impregnation  |
| Y10T 428/2922 | . . .     | Nonlinear [e.g., crimped, coiled, etc.]   |
| Y10T 428/2924 | . . . .   | Composite   |
| Y10T 428/2925 | . . . .   | Helical or coiled   |
| Y10T 428/2927 | . . .     | including structurally defined particulate matter   |
| Y10T 428/2929 | . . .     | Bicomponent, conjugate, composite or collateral fibers or filaments [i.e., coextruded sheath-core or side-by-side type]                   |
| Y10T 428/2931 | . . . .   | Fibers or filaments nonconcentric [e.g., side-by-side or eccentric, etc.]   |
| Y10T 428/2933 | . . .     | Coated or with bond, impregnation or core   |
| Y10T 428/2935 | . . . .   | Discontinuous or tubular or cellular core   |
| Y10T 428/2936 | . . . .   | Wound or wrapped core or coating [i.e., spiral or helical]  |
| Y10T 428/2938 | . . . .   | Coating on discrete and individual rods, strands or filaments   |
| Y10T 428/294  | . . . .   | including metal or compound thereof [excluding glass, ceramic and asbestos]   |
| Y10T 428/2942 | . . . . . | Plural coatings   |
| Y10T 428/2944 | . . . . . | Free metal in coating   |
| Y10T 428/2945 | . . . . . | Natural rubber in coating   |
| Y10T 428/2947 | . . . . . | Synthetic resin or polymer in plural coatings, each of different type   |

|                |           |   |
|----------------|-----------|---|
| Y10T 428/2949  | . . . . . | Glass, ceramic or metal oxide in coating  |
| Y10T 428/2951  | . . . . . | Metal with weld modifying or stabilizing coating [e.g., flux, slag, producer, etc.]   |
| Y10T 428/2953  | . . . . . | Titanium compound in coating  |
| Y10T 428/2955  | . . . . . | Silicic material in coating   |
| Y10T 428/2956  | . . . . . | Glass or silicic fiber or filament with metal coating                                 |
| Y10T 428/2958  | . . . . . | Metal or metal compound in coating  |
| Y10T 428/296   | . . . . . | Rubber, cellulosic or silicic material in coating                                     |
| Y10T 428/2962  | . . . . . | Silane, silicone or siloxane in coating   |
| Y10T 428/2964  | . . . . . | Artificial fiber or filament  |
| Y10T 428/2965  | . . . . . | Cellulosic  |
| Y10T 428/2967  | . . . . . | Synthetic resin or polymer  |
| Y10T 428/2969  | . . . . . | Polyamide, polyimide or polyester   |
| Y10T 428/2971  | . . . . . | Impregnation  |
| Y10T 428/2973  | . . . . . | Particular cross section  |
| Y10T 428/2975  | . . . . . | Tubular or cellular   |
| Y10T 428/2976  | . . . . . | Longitudinally varying  |
| Y10T 428/2978  | . . . . . | Surface characteristic  |
| Y10T 428/298   | . . . . . | Physical dimension  |
| Y10T 428/2982  | . . . . . | Particulate matter [e.g., sphere, flake, etc.]  |
| Y10T 428/2984  | . . . . . | Microcapsule with fluid core [includes liposome]                                      |
| Y10T 428/2985  | . . . . . | Solid-walled microcapsule from synthetic polymer                                      |
| Y10T 428/2987  | . . . . . | Addition polymer from unsaturated monomers only                                       |
| Y10T 428/2989  | . . . . . | Microcapsule with solid core [includes liposome]                                      |
| Y10T 428/2991  | . . . . . | Coated  |
| Y10T 428/2993  | . . . . . | Silicic or refractory material containing [e.g., tungsten oxide, glass, cement, etc.] |
| Y10T 428/2995  | . . . . . | Silane, siloxane or silicone coating  |
| Y10T 428/2996  | . . . . . | Glass particles or spheres  |
| Y10T 428/2998  | . . . . . | including synthetic resin or polymer  |
| Y10T 428/30    | . . . . . | Self-sustaining carbon mass or layer with impregnant or other layer                   |
| Y10T 428/31    | . . . . . | Surface property or characteristic of web, sheet or block                             |
| Y10T 428/315   | . . . . . | Surface modified glass [e.g., tempered, strengthened, etc.]                           |
| Y10T 428/31504 | . . . . . | Composite [nonstructural laminate]  |
| Y10T 428/31507 | . . . . . | Of polycarbonate  |
| Y10T 428/31511 | . . . . . | Of epoxy ether  |
| Y10T 428/31515 | . . . . . | As intermediate layer   |
| Y10T 428/31518 | . . . . . | Next to glass or quartz   |
| Y10T 428/31522 | . . . . . | Next to metal   |
| Y10T 428/31525 | . . . . . | Next to glass or quartz   |

|                |         |  |
|----------------|---------|--|
| Y10T 428/31529 | . . .   | Next to metal  |
| Y10T 428/31533 | . .     | Of polythioether   |
| Y10T 428/31536 | . .     | Including interfacial reaction product of adjacent layers                      |
| Y10T 428/3154  | . .     | Of fluorinated addition polymer from unsaturated monomers                      |
| Y10T 428/31544 | . . .   | Addition polymer is perhalogenated   |
| Y10T 428/31547 | . .     | Of polyisocyanurate  |
| Y10T 428/31551 | . .     | Of polyamidoester [polyurethane, polyisocyanate, polycarbamate, etc.]          |
| Y10T 428/31554 | . . .   | Next to second layer of polyamidoester   |
| Y10T 428/31558 | . . .   | Next to animal skin or membrane  |
| Y10T 428/31562 | . . .   | Next to polyamide [nylon, etc.]  |
| Y10T 428/31565 | . . .   | Next to polyester [polyethylene terephthalate, etc.]                           |
| Y10T 428/31569 | . . .   | Next to natural rubber   |
| Y10T 428/31573 | . . .   | Next to addition polymer of ethylenically unsaturated monomer                  |
| Y10T 428/31576 | . . . . | Ester monomer type [polyvinylacetate, etc.]                                    |
| Y10T 428/3158  | . . . . | Halide monomer type [polyvinyl chloride, etc.]                                 |
| Y10T 428/31583 | . . . . | Nitrile monomer type [polyacrylonitrile, etc.]                                 |
| Y10T 428/31587 | . . . . | Hydrocarbon polymer [polyethylene, polybutadiene, etc.]                        |
| Y10T 428/31591 | . . .   | Next to cellulosic   |
| Y10T 428/31594 | . . .   | Next to aldehyde or ketone condensation product [phenol-aldehyde, etc.]        |
| Y10T 428/31598 | . . .   | Next to silicon-containing [silicone, cement, etc.] layer                      |
| Y10T 428/31601 | . . . . | Quartz or glass  |
| Y10T 428/31605 | . . .   | Next to free metal   |
| Y10T 428/31609 | . . .   | Particulate metal or metal compound-containing                                 |
| Y10T 428/31612 | . . . . | As silicone, silane or siloxane  |
| Y10T 428/31616 | . . .   | Next to polyester [e.g., alkyd]  |
| Y10T 428/3162  | . . . . | Cross-linked polyester [e.g., glycerol maleate-styrene, etc.]                  |
| Y10T 428/31623 | . . .   | Next to polyamide or polyimide   |
| Y10T 428/31627 | . . .   | Next to aldehyde or ketone condensation product                                |
| Y10T 428/3163  | . . . . | Next to acetal of polymerized unsaturated alcohol [e.g., formal butyral, etc.] |
| Y10T 428/31634 | . . .   | Next to cellulosic   |
| Y10T 428/31638 | . . . . | Cellulosic ester   |
| Y10T 428/31641 | . . .   | Next to natural rubber, gum, oil, rosin, wax, bituminous or tarry residue      |
| Y10T 428/31645 | . . .   | Next to addition polymer from unsaturated monomers                             |
| Y10T 428/31649 | . . . . | Ester, halide or nitrile of addition polymer                                   |
| Y10T 428/31652 | . .     | Of asbestos  |
| Y10T 428/31656 | . . .   | With metal layer   |
| Y10T 428/31659 | . . .   | With cellulosic layer  |
| Y10T 428/31663 | . . .   | As siloxane, silicone or silane  |



|                |           |  |
|----------------|-----------|--|
| Y10T 428/31667 | . . .     | Next to addition polymer from unsaturated monomers, or aldehyde or ketone condensation product |
| Y10T 428/3167  | . .       | Of cork  |
| Y10T 428/31674 | . . .     | Including natural oil or gum or rosin [e.g., linoleum, etc.]                                   |
| Y10T 428/31678 | . .       | Of metal   |
| Y10T 428/31681 | . . .     | Next to polyester, polyamide or polyimide [e.g., alkyd, glue, or nylon, etc.]                  |
| Y10T 428/31685 | . . . .   | Natural source polyamide [e.g., casein, gelatin, etc.]   |
| Y10T 428/31688 | . . .     | Next to aldehyde or ketone condensation product  |
| Y10T 428/31692 | . . .     | Next to addition polymer from unsaturated monomers   |
| Y10T 428/31696 | . . . .   | Including polyene monomers [e.g., butadiene, etc.]   |
| Y10T 428/31699 | . . . .   | Ester, halide or nitrile of addition polymer   |
| Y10T 428/31703 | . . .     | Next to cellulosic   |
| Y10T 428/31707 | . . .     | Next to natural rubber   |
| Y10T 428/3171  | . . . .   | With natural rubber next to second layer of natural rubber                                     |
| Y10T 428/31714 | . . .     | Next to natural gum, natural oil, rosin, lac or wax  |
| Y10T 428/31717 | . . .     | Next to bituminous or tarry residue  |
| Y10T 428/31721 | . .       | Of polyimide   |
| Y10T 428/31725 | . .       | Of polyamide   |
| Y10T 428/31728 | . . .     | Next to second layer of polyamide  |
| Y10T 428/31732 | . . . .   | At least one layer is nylon type   |
| Y10T 428/31736 | . . .     | Next to polyester  |
| Y10T 428/31739 | . . .     | Nylon type   |
| Y10T 428/31743 | . . . .   | Next to addition polymer from unsaturated monomer[s]   |
| Y10T 428/31746 | . . . . . | Polymer of monoethylenically unsaturated hydrocarbon   |
| Y10T 428/3175  | . . .     | Next to addition polymer from unsaturated monomer[s]   |
| Y10T 428/31754 | . . . .   | Natural source-type polyamide  |
| Y10T 428/31757 | . . . .   | Polymer of monoethylenically unsaturated hydrocarbon   |
| Y10T 428/31761 | . . .     | Next to aldehyde or ketone condensation product  |
| Y10T 428/31765 | . . .     | Inorganic-containing or next to inorganic-containing   |
| Y10T 428/31768 | . . .     | Natural source-type polyamide [e.g., casein, gelatin, etc.]                                    |
| Y10T 428/31772 | . . . .   | Next to cellulosic   |
| Y10T 428/31775 | . . . . . | Paper  |
| Y10T 428/31779 | . . .     | Next to cellulosic   |
| Y10T 428/31783 | . . . .   | Paper or wood  |
| Y10T 428/31786 | . .       | Of polyester [e.g., alkyd, etc.]   |
| Y10T 428/3179  | . . .     | Next to cellulosic   |
| Y10T 428/31794 | . . .     | Of cross-linked polyester  |
| Y10T 428/31797 | . . .     | Next to addition polymer from unsaturated monomers   |
| Y10T 428/31801 | . .       | Of wax or waxy material  |
| Y10T 428/31804 | . . .     | Next to cellulosic   |



|                |           |   |
|----------------|-----------|---|
| Y10T 428/31808 | . . . .   | Cellulosic is paper   |
| Y10T 428/31812 | . . . . . | Glassine paper  |
| Y10T 428/31815 | . .       | Of bituminous or tarry residue  |
| Y10T 428/31819 | . . .     | Next to cellulosic  |
| Y10T 428/31823 | . . . .   | Paper   |
| Y10T 428/31826 | . .       | Of natural rubber   |
| Y10T 428/3183  | . . .     | Next to second layer of natural rubber  |
| Y10T 428/31833 | . . .     | Next to aldehyde or ketone condensation product or addition polymer from unsaturated monomers |
| Y10T 428/31837 | . . . .   | Including polyene monomers  |
| Y10T 428/31841 | . . .     | Next to cellulosic  |
| Y10T 428/31844 | . .       | Of natural gum, rosin, natural oil or lac   |
| Y10T 428/31848 | . . .     | Next to cellulosic  |
| Y10T 428/31851 | . . . .   | Natural oil   |
| Y10T 428/31855 | . .       | Of addition polymer from unsaturated monomers   |
| Y10T 428/31859 | . . .     | Next to an aldehyde or ketone condensation product  |
| Y10T 428/31862 | . . . .   | Melamine-aldehyde   |
| Y10T 428/31866 | . . . . . | Impregnated or coated cellulosic material   |
| Y10T 428/3187  | . . . .   | Amide-aldehyde  |
| Y10T 428/31873 | . . . . . | Urea or modified urea-aldehyde  |
| Y10T 428/31877 | . . . .   | Phenol-aldehyde   |
| Y10T 428/3188  | . . .     | Next to cellulosic  |
| Y10T 428/31884 | . . . .   | Regenerated or modified cellulose   |
| Y10T 428/31888 | . . . . . | Addition polymer of hydrocarbon[s] only   |
| Y10T 428/31891 | . . . . . | Where addition polymer is an ester or halide  |
| Y10T 428/31895 | . . . .   | Paper or wood   |
| Y10T 428/31899 | . . . . . | Addition polymer of hydrocarbon[s] only   |
| Y10T 428/31902 | . . . . . | Monoethylenically unsaturated   |
| Y10T 428/31906 | . . . . . | Ester, halide or nitrile of addition polymer  |
| Y10T 428/31909 | . . .     | Next to second addition polymer from unsaturated monomers                                     |
| Y10T 428/31913 | . . . .   | Monoolefin polymer  |
| Y10T 428/31917 | . . . . . | Next to polyene polymer   |
| Y10T 428/3192  | . . . . . | Next to vinyl or vinylidene chloride polymer  |
| Y10T 428/31924 | . . . .   | Including polyene monomers  |
| Y10T 428/31928 | . . . .   | Ester, halide or nitrile of addition polymer  |
| Y10T 428/31931 | . . .     | Polyene monomer-containing  |
| Y10T 428/31935 | . . .     | Ester, halide or nitrile of addition polymer  |
| Y10T 428/31938 | . . .     | Polymer of monoethylenically unsaturated hydrocarbon  |
| Y10T 428/31942 | . .       | Of aldehyde or ketone condensation product  |
| Y10T 428/31946 | . . .     | Next to second aldehyde or ketone condensation product  |

|                |   |
|----------------|---|
| Y10T 428/31949 | . . . Next to cellulosic  |
| Y10T 428/31953 | . . . . Modified or regenerated cellulose   |
| Y10T 428/31957 | . . . . Wood  |
| Y10T 428/3196  | . . . . . Phenoplast  |
| Y10T 428/31964 | . . . . Paper   |
| Y10T 428/31967 | . . . . . Phenoplast  |
| Y10T 428/31971 | . . Of carbohydrate   |
| Y10T 428/31975 | . . . Of cellulosic next to another carbohydrate  |
| Y10T 428/31978 | . . . . Cellulosic next to another cellulosic   |
| Y10T 428/31982 | . . . . . Wood or paper   |
| Y10T 428/31986 | . . . . . Regenerated or modified   |
| Y10T 428/31989 | . . . Of wood   |
| Y10T 428/31993 | . . . Of paper  |
| Y10T 428/31996 | . . . . Next to layer of metal salt [e.g., plasterboard, etc.]  |
| Y10T 428/32    | . Composite [nonstructural laminate] of inorganic material having metal-compound-containing layer and having defined magnetic layer |
| Y10T 428/325   | . . Magnetic layer next to second metal compound-containing layer   |
| Y10T 428/4935  | . Impregnated naturally solid product [e.g., leather, stone, etc.]  |
| Y10T 428/662   | . . Wood timber product [e.g., piling, post, veneer, etc.]  |
| Y10T 428/8305  | . Miscellaneous [e.g., treated surfaces, etc.]  |

**Former US Class 436 Series**

|                    |  |
|--------------------|--|
| <b>Y10T 436/00</b> | <b>Chemistry: analytical and immunological testing</b>   |
| Y10T 436/10        | . Composition for standardization, calibration, simulation, stabilization, preparation or preservation; processes of use in preparation for chemical testing |
| Y10T 436/100833    | . . Simulative of a gaseous composition  |
| Y10T 436/101666    | . . Particle count or volume standard or control [e.g., platelet count standards, etc.]  |
| Y10T 436/102499    | . . Blood gas standard or control  |
| Y10T 436/103332    | . . Bilirubin or uric acid standard or control   |
| Y10T 436/104165    | . . Lipid, cholesterol, or triglyceride standard or control  |
| Y10T 436/104998    | . . Glucose, ketone, nitrate standard or control   |
| Y10T 436/105831    | . . Protein or peptide standard or control [e.g., hemoglobin, etc.]  |
| Y10T 436/106664    | . . Blood serum or blood plasma standard or control  |
| Y10T 436/107497    | . . Preparation composition [e.g., lysing or precipitation, etc.]  |
| Y10T 436/108331    | . . Preservative, buffer, anticoagulant or diluent   |
| Y10T 436/109163    | . . Inorganic standards or controls  |
| Y10T 436/11        | . Automated chemical analysis  |
| Y10T 436/110833    | . . Utilizing a moving indicator strip or tape   |
| Y10T 436/111666    | . . Utilizing a centrifuge or compartmented rotor  |

- Y10T 436/112499 . . with sample on test slide
- Y10T 436/113332 . . with conveyance of sample along a test line in a container or rack
- Y10T 436/114165 . . . with step of insertion or removal from test line
- Y10T 436/114998 . . . with treatment or replacement of aspirator element [e.g., cleaning, etc.]
- Y10T 436/115831 . . Condition or time responsive
- Y10T 436/116664 . . . with automated titrator
- Y10T 436/117497 . . with a continuously flowing sample or carrier stream
- Y10T 436/118339 . . . with formation of a segmented stream
- Y10T 436/119163 . . with aspirator of claimed structure
- Y10T 436/12 . Condition responsive control
- Y10T 436/13 . Tracers or tags
- Y10T 436/14 . Heterocyclic carbon compound [i.e. , O, S, N, Se, Te, as only ring hetero atom]
- Y10T 436/141111 . . Diverse hetero atoms in same or different rings [e.g., alkaloids, opiates, etc.]
- Y10T 436/142222 . . Hetero-O [e.g., ascorbic acid, etc.]
- Y10T 436/143333 . . . Saccharide [e.g., DNA, etc.]
- Y10T 436/144444 . . . . Glucose
- Y10T 436/145555 . . Hetero-N
- Y10T 436/146666 . . . Bile pigment
- Y10T 436/147777 . . . Plural nitrogen in the same ring [e.g., barbituates, creatinine, etc.]
- Y10T 436/148888 . . . . Uric acid
- Y10T 436/15 . Inorganic acid or base [e.g. , hcl, sulfuric acid, etc. ]
- Y10T 436/153333 . . Halogen containing
- Y10T 436/156666 . . Sulfur containing
- Y10T 436/16 . Phosphorus containing
- Y10T 436/163333 . . Organic [e.g., chemical warfare agents, insecticides, etc.]
- Y10T 436/166666 . . of inorganic phosphorus compound in body fluid
- Y10T 436/17 . Nitrogen containing
- Y10T 436/170769 . . N-Nitroso containing [e.g., nitrosamine, etc.]
- Y10T 436/171538 . . Urea or blood urea nitrogen
- Y10T 436/172307 . . Cyanide or isocyanide
- Y10T 436/173076 . . Nitrite or nitrate
- Y10T 436/173845 . . Amine and quaternary ammonium
- Y10T 436/174614 . . . Tertiary amine
- Y10T 436/175383 . . . Ammonia
- Y10T 436/176152 . . Total nitrogen determined
- Y10T 436/176921 . . . As part of an elemental analysis
- Y10T 436/177692 . . Oxides of nitrogen
- Y10T 436/178459 . . . Only nitrogen dioxide
- Y10T 436/179228 . . . Both nitrogen oxide and dioxide
- Y10T 436/18 . Sulfur containing

- Y10T 436/182 . . Organic or sulfhydryl containing [e.g., mercaptan, hydrogen, sulfide, etc.]
- Y10T 436/184 . . . Only hydrogen sulfide
- Y10T 436/186 . . Sulfur dioxide
- Y10T 436/188 . . Total or elemental sulfur
- Y10T 436/19 . . Halogen containing
- Y10T 436/193333 . . In aqueous solution
- Y10T 436/196666 . . Carbon containing compound [e.g., vinylchloride, etc.]
- Y10T 436/20 . . Oxygen containing
- Y10T 436/200833 . . Carbonyl, ether, aldehyde or ketone containing
- Y10T 436/201666 . . . Carboxylic acid
- Y10T 436/202499 . . . Formaldehyde or acetone
- Y10T 436/203332 . . Hydroxyl containing
- Y10T 436/204165 . . . Ethanol
- Y10T 436/204998 . . Inorganic carbon compounds
- Y10T 436/205831 . . . Carbon monoxide only
- Y10T 436/206664 . . Ozone or peroxide
- Y10T 436/207497 . . Molecular oxygen
- Y10T 436/208339 . . . Fuel/air mixture or exhaust gas analysis
- Y10T 436/209163 . . . Dissolved or trace oxygen or oxygen content of a sealed environment
- Y10T 436/21 . . Hydrocarbon
- Y10T 436/212 . . Aromatic
- Y10T 436/214 . . Acyclic [e.g., methane, octane, isoparaffin, etc.]
- Y10T 436/216 . . . Unsaturated [e.g., ethylene, diene, etc.]
- Y10T 436/218 . . Total hydrocarbon, flammability, combustibility [e.g., air-fuel mixture, etc.]
- Y10T 436/22 . . Hydrogen, per se
- Y10T 436/23 . . Carbon containing
- Y10T 436/235 . . In an aqueous solution [e.g., TOC, etc.]
- Y10T 436/24 . . Nuclear magnetic resonance, electron spin resonance or other spin effects or mass spectrometry
- Y10T 436/25 . . including sample preparation
- Y10T 436/25125 . . Digestion or removing interfering materials
- Y10T 436/2525 . . Stabilizing or preserving
- Y10T 436/25375 . . Liberation or purification of sample or separation of material from a sample [e.g., filtering, centrifuging, etc.]
- Y10T 436/255 . . . including use of a solid sorbent, semipermeable membrane, or liquid extraction
- Y10T 436/25625 . . Dilution
- Y10T 436/2575 . . Volumetric liquid transfer
- Y10T 436/25875 . . Gaseous sample or with change of physical state

**Former US Class 442 series****Y10T 442/00****Fabric [woven, knitted, or nonwoven textile or cloth, etc.]**

- Y10T 442/10 . Scrim [e.g., open net or mesh, gauze, loose or open weave or knit, etc.]
- Y10T 442/102 . . Woven scrim
- Y10T 442/103 . . . Including a multifilament fiber precoated with other than free metal or alloy prior to weaving
- Y10T 442/105 . . . Comprising a composite fiber
- Y10T 442/107 . . . Comprising at least two chemically different fibers
- Y10T 442/109 . . . Metal or metal-coated fiber-containing scrim
- Y10T 442/11 . . . . Including an additional free metal or alloy constituent
- Y10T 442/112 . . . . . Particulate free metal or alloy constituent
- Y10T 442/114 . . . . Including a foam layer
- Y10T 442/116 . . . . Including a woven fabric which is not a scrim
- Y10T 442/117 . . . . . Including a nonwoven fabric which is not a scrim
- Y10T 442/119 . . . . Including a paper layer
- Y10T 442/121 . . . . Including a nonwoven fabric which is not a scrim
- Y10T 442/122 . . . . . Two or more nonwoven fabric layers
- Y10T 442/124 . . . . Including a natural or synthetic rubber layer
- Y10T 442/126 . . . . Including a preformed film, foil, or sheet
- Y10T 442/128 . . . . Including a layer derived from a water-settable material [e.g., cement, gypsum, etc.]
- Y10T 442/129 . . . . Including a ceramic or glass layer
- Y10T 442/131 . . . . Including a coating or impregnation of synthetic polymeric material
- Y10T 442/133 . . . Inorganic fiber-containing scrim
- Y10T 442/134 . . . . Including a carbon or carbonized fiber
- Y10T 442/136 . . . . Including a foam layer
- Y10T 442/138 . . . . Including a metal layer
- Y10T 442/14 . . . . Including an additional scrim layer
- Y10T 442/141 . . . . Including a woven fabric which is not a scrim
- Y10T 442/143 . . . . Including a nonwoven fabric which is not a scrim
- Y10T 442/145 . . . . Including a preformed film, foil, or sheet
- Y10T 442/147 . . . . Including a mica layer
- Y10T 442/148 . . . . Including a coating or impregnation containing particulate material other than fiber
- Y10T 442/15 . . . Including a foam layer
- Y10T 442/152 . . . Including a free metal or alloy constituent
- Y10T 442/153 . . . Including an additional scrim layer
- Y10T 442/155 . . . Including a paper layer
- Y10T 442/157 . . . . Two or more paper layers

- Y10T 442/159 . . . Including a nonwoven fabric which is not a scrim
- Y10T 442/16 . . . . Two or more nonwoven layers
- Y10T 442/162 . . . Including a natural or synthetic rubber layer
- Y10T 442/164 . . . Including a preformed film, foil, or sheet
- Y10T 442/166 . . . . Cellulose acetate film or sheet
- Y10T 442/167 . . . . Fluorinated polyolefin film or sheet
- Y10T 442/169 . . . . Polyolefin film or sheet
- Y10T 442/171 . . . Including a layer derived from a water-settable material [e.g., cement, gypsum, etc.]
- Y10T 442/172 . . . Coated or impregnated
- Y10T 442/174 . . . . Including particulate material other than fiber in coating or impregnation
- Y10T 442/176 . . . . Three or more layers
- Y10T 442/178 . . . . Synthetic polymeric fiber
- Y10T 442/179 . . . . . Nylon fiber
- Y10T 442/181 . . . . Bitumen coating or impregnation
- Y10T 442/183 . . . Synthetic polymeric fiber
- Y10T 442/184 . . Nonwoven scrim
- Y10T 442/186 . . . Comprising a composite fiber
- Y10T 442/188 . . . Metal or metal-coated fiber-containing scrim
- Y10T 442/19 . . . . Including a paper layer
- Y10T 442/191 . . . Inorganic fiber-containing scrim
- Y10T 442/193 . . . . Including a foam layer
- Y10T 442/195 . . . Including a foam layer
- Y10T 442/197 . . . Including a nonwoven fabric which is not a scrim
- Y10T 442/198 . . . Coated or impregnated
- Y10T 442/20 . . Coated or impregnated woven, knit, or nonwoven fabric which is not [a] associated with another preformed layer or fiber layer or, [b] with respect to woven and knit, characterized, respectively, by a particular or differential weave or knit, wherein the coating or impregnation is neither a foamed material nor a free metal or alloy layer
- Y10T 442/2008 . . Fabric composed of a fiber or strand which is of specific structural definition
- Y10T 442/2016 . . Impregnation is confined to a plane disposed between both major fabric surfaces which are essentially free of impregnating material
- Y10T 442/2025 . . Coating produced by extrusion
- Y10T 442/2033 . . Coating or impregnation formed in situ [e.g., by interfacial condensation, coagulation, precipitation, etc.]
- Y10T 442/2041 . . Two or more non-extruded coatings or impregnations
- Y10T 442/2049 . . . Each major face of the fabric has at least one coating or impregnation
- Y10T 442/2057 . . . . At least two coatings or impregnations of different chemical composition
- Y10T 442/2066 . . . . . Different coatings or impregnations on opposite faces of the fabric

|               |           |   |
|---------------|-----------|---|
| Y10T 442/2074 | . . . . . | At least one coating or impregnation contains particulate material  |
| Y10T 442/2082 | . . . . . | At least one coating or impregnation functions to fix pigments or particles on the surface of a coating or impregnation   |
| Y10T 442/209  | . . . . . | At least one coating or impregnation contains particulate material  |
| Y10T 442/2098 | . . . . . | At least two coatings or impregnations of different chemical composition  |
| Y10T 442/2107 | . . . . . | At least one coating or impregnation contains particulate material  |
| Y10T 442/2115 | . . . . . | At least one coating or impregnation functions to fix pigments or particles on the surface of a coating or impregnation   |
| Y10T 442/2123 | . . . . . | At least one coating or impregnation contains particulate material  |
| Y10T 442/2131 | . . . . . | At least one coating or impregnation functions to fix pigments or particles on the surface of a coating or impregnation   |
| Y10T 442/2139 | . . . . . | Coating or impregnation specified as porous or permeable to a specific substance [e.g., water vapor, air, etc.]   |
| Y10T 442/2148 | . . . . . | Coating or impregnation is specified as microporous but is not a foam   |
| Y10T 442/2156 | . . . . . | Coating or impregnation collects radionuclide or heavy metal  |
| Y10T 442/2164 | . . . . . | Coating or impregnation specified as water repellent  |
| Y10T 442/2172 | . . . . . | Also specified as oil repellent   |
| Y10T 442/218  | . . . . . | Organosilicon containing  |
| Y10T 442/2189 | . . . . . | Fluorocarbon containing   |
| Y10T 442/2197 | . . . . . | Nitrogen containing   |
| Y10T 442/2205 | . . . . . | Natural oil or wax containing   |
| Y10T 442/2213 | . . . . . | Coating or impregnation is specified as weather proof, water vapor resistant, or moisture resistant   |
| Y10T 442/2221 | . . . . . | Coating or impregnation is specified as water proof   |
| Y10T 442/223  | . . . . . | Organosilicon containing  |
| Y10T 442/2238 | . . . . . | Fluorocarbon containing   |
| Y10T 442/2246 | . . . . . | Nitrogen containing   |
| Y10T 442/2254 | . . . . . | Natural oil or wax containing   |
| Y10T 442/2262 | . . . . . | Coating or impregnation is oil repellent but not oil or stain release   |
| Y10T 442/227  | . . . . . | Fluorocarbon containing   |
| Y10T 442/2279 | . . . . . | Coating or impregnation improves soil repellency, soil release, or anti- soil redeposition qualities of fabric  |
| Y10T 442/2287 | . . . . . | Fluorocarbon containing   |
| Y10T 442/2295 | . . . . . | Linear polyether group chain containing   |
| Y10T 442/2303 | . . . . . | Coating or impregnation provides a fragrance or releases an odor intended to be perceptible to humans   |
| Y10T 442/2311 | . . . . . | Coating or impregnation is a lubricant or a surface friction reducing agent other than specified as improving the "hand" of the fabric or increasing the softness thereof |
| Y10T 442/232  | . . . . . | Fluorocarbon containing   |
| Y10T 442/2328 | . . . . . | Organosilicon containing  |
| Y10T 442/2336 | . . . . . | Natural oil or wax containing   |

- Y10T 442/2344
  - • Coating or impregnation is anti-slip or friction-increasing other than specified as an abrasive
- Y10T 442/2352
  - • Coating or impregnation functions to soften the feel of or improve the "hand" of the fabric
- Y10T 442/2361
  - • Coating or impregnation improves stiffness of the fabric other than specified as a size
- Y10T 442/2369
  - • Coating or impregnation improves elasticity, bendability, resiliency, flexibility, or shape retention of the fabric
- Y10T 442/2377
  - • • Improves elasticity
- Y10T 442/2385
  - • • Improves shrink resistance
- Y10T 442/2393
  - • • Coating or impregnation provides crease-resistance or wash and wear characteristics
- Y10T 442/2402
  - • Coating or impregnation specified as a size
- Y10T 442/241
  - • Coating or impregnation improves snag or pull resistance of the fabric
- Y10T 442/2418
  - • Coating or impregnation increases electrical conductivity or anti-static quality
- Y10T 442/2426
  - • • Elemental carbon containing
- Y10T 442/2434
  - • • Linear polyether group chain containing
- Y10T 442/2443
  - • • Nitrogen and phosphorus containing
- Y10T 442/2451
  - • • Phosphorus containing
- Y10T 442/2459
  - • • Nitrogen containing
- Y10T 442/2467
  - • • Sulphur containing
- Y10T 442/2475
  - • Coating or impregnation is electrical insulation-providing, -improving, or -increasing, or conductivity-reducing
- Y10T 442/2484
  - • Coating or impregnation is water absorbency-increasing or hydrophilicity-increasing or hydrophilicity-imparting
- Y10T 442/2492
  - • • Polyether group containing
- Y10T 442/25
  - • Coating or impregnation absorbs sound
- Y10T 442/2508
  - • Coating or impregnation absorbs chemical material other than water
- Y10T 442/2516
  - • • Chemical material is one used in biological or chemical warfare
- Y10T 442/2525
  - • Coating or impregnation functions biologically [e.g., insect repellent, antiseptic, insecticide, bactericide, etc.]
- Y10T 442/2533
  - • • Inhibits mildew
- Y10T 442/2541
  - • • Insect repellent
- Y10T 442/2549
  - • Coating or impregnation is chemically inert or of stated nonreactance
- Y10T 442/2557
  - • • Oxygen or ozone resistant
- Y10T 442/2566
  - • • Organic solvent resistant [e.g., dry cleaning fluid, etc.]
- Y10T 442/2574
  - • • Acid or alkali resistant
- Y10T 442/2582
  - • Coating or impregnation contains an optical bleach or brightener or functions as an optical bleach or brightener [e.g., it masks fabric yellowing, etc.]
- Y10T 442/259
  - • Coating or impregnation provides protection from radiation [e.g., U.V., visible light, I.R., micscheme-change-itemave, high energy particle, etc.] or heat retention thru radiation absorption
- Y10T 442/2598
  - • • Radiation reflective



|               |  |
|---------------|--|
| Y10T 442/2607 | . . . Radiation absorptive   |
| Y10T 442/2615 | . . Coating or impregnation is resistant to penetration by solid implements  |
| Y10T 442/2623 | . . . Ballistic resistant  |
| Y10T 442/2631 | . . Coating or impregnation provides heat or fire protection   |
| Y10T 442/2639 | . . . Coated or impregnated asbestos fabric  |
| Y10T 442/2648 | . . . Coating or impregnation is specified as an intumescent material  |
| Y10T 442/2656 | . . . Antimony containing  |
| Y10T 442/2664 | . . . Boron containing   |
| Y10T 442/2672 | . . . Phosphorus containing  |
| Y10T 442/268  | . . . . Phosphorus and nitrogen containing compound  |
| Y10T 442/2689 | . . . . A phosphorus containing compound and a nitrogen containing compound  |
| Y10T 442/2697 | . . . . Phosphorus and halogen containing compound   |
| Y10T 442/2705 | . . . . A phosphorus containing compound and a halogen containing compound   |
| Y10T 442/2713 | . . . Halogen containing   |
| Y10T 442/2721 | . . . Nitrogen containing  |
| Y10T 442/273  | . . Coating or impregnation provides wear or abrasion resistance   |
| Y10T 442/2738 | . . Coating or impregnation intended to function as an adhesive to solid surfaces subsequently associated therewith        |
| Y10T 442/2746 | . . . Heat-activatable adhesive  |
| Y10T 442/2754 | . . . Pressure-sensitive adhesive  |
| Y10T 442/2762 | . . Coated or impregnated natural fiber fabric [e.g., cotton, wool, silk, linen, etc.]                                     |
| Y10T 442/277  | . . . Coated or impregnated cellulosic fiber fabric  |
| Y10T 442/2779 | . . . . Coating or impregnation contains an acrylic polymer or copolymer [e.g., polyacrylonitrile, polyacrylic acid, etc.] |
| Y10T 442/2787 | . . . . Coating or impregnation contains a vinyl polymer or copolymer  |
| Y10T 442/2795 | . . . . Coating or impregnation contains an epoxy polymer or copolymer or polyether  |
| Y10T 442/2803 | . . . . Polymeric coating or impregnation from a silane or siloxane not specified as lubricant or water repellent          |
| Y10T 442/2811 | . . . . Coating or impregnation contains polyimide or polyamide  |
| Y10T 442/282  | . . . . Coating or impregnation contains natural gum, rosin, natural oil, or wax   |
| Y10T 442/2828 | . . . . Coating or impregnation contains aldehyde or ketone condensation product   |
| Y10T 442/2836 | . . . . . Phenol-aldehyde condensate   |
| Y10T 442/2844 | . . . . . Melamine-aldehyde condensate   |
| Y10T 442/2852 | . . . . . Amide-aldehyde condensate [e.g., modified urea-aldehyde condensate, etc.]  |
| Y10T 442/2861 | . . Coated or impregnated synthetic organic fiber fabric   |
| Y10T 442/2869 | . . . Coated or impregnated regenerated cellulose fiber fabric   |

|               |           |   |
|---------------|-----------|---|
| Y10T 442/2877 | . . .     | Coated or impregnated polyvinyl alcohol fiber fabric  |
| Y10T 442/2885 | . . .     | Coated or impregnated acrylic fiber fabric  |
| Y10T 442/2893 | . . .     | Coated or impregnated polyamide fiber fabric  |
| Y10T 442/2902 | . . . .   | Aromatic polyamide fiber fabric   |
| Y10T 442/291  | . . .     | Coated or impregnated polyolefin fiber fabric   |
| Y10T 442/2918 | . . . .   | Polypropylene fiber fabric  |
| Y10T 442/2926 | . .       | Coated or impregnated inorganic fiber fabric  |
| Y10T 442/2934 | . . .     | Coating or impregnation contains vinyl polymer or copolymer   |
| Y10T 442/2943 | . . . .   | Vinyl acetate polymer or copolymer  |
| Y10T 442/2951 | . . .     | Coating or impregnation contains epoxy polymer or copolymer or polyether  |
| Y10T 442/2959 | . . .     | Coating or impregnation contains aldehyde or ketone condensation product  |
| Y10T 442/2967 | . . . .   | Amide-aldehyde condensate   |
| Y10T 442/2975 | . . .     | Coated or impregnated ceramic fiber fabric  |
| Y10T 442/2984 | . . .     | Coated or impregnated carbon or carbonaceous fiber fabric   |
| Y10T 442/2992 | . . .     | Coated or impregnated glass fiber fabric  |
| Y10T 442/30   | . .       | Woven fabric [i.e., woven strand or strip material]   |
| Y10T 442/3008 | . .       | Woven fabric has an elastic quality   |
| Y10T 442/3016 | . . .     | Including a preformed layer other than the elastic woven fabric [e.g., fabric or film or foil or sheet layer, etc.]   |
| Y10T 442/3024 | . . .     | Including elastic strand or strip   |
| Y10T 442/3033 | . .       | Including a strip or ribbon   |
| Y10T 442/3041 | . . .     | Woven fabric comprises strips or ribbons only   |
| Y10T 442/3049 | . .       | Including strand precoated with other than free metal or alloy  |
| Y10T 442/3057 | . . .     | Multiple coatings   |
| Y10T 442/3065 | . .       | Including strand which is of specific structural definition   |
| Y10T 442/3073 | . . .     | Strand material is core-spun [not sheath-core bicomponent strand]   |
| Y10T 442/3081 | . . . .   | Core is synthetic polymeric material  |
| Y10T 442/3089 | . . .     | Cross-sectional configuration of strand material is specified   |
| Y10T 442/3098 | . . . .   | Cross-sectional configuration varies longitudinally along the strand  |
| Y10T 442/3106 | . . . .   | Hollow strand material  |
| Y10T 442/3114 | . . . .   | Cross-sectional configuration of the strand material is other than circular   |
| Y10T 442/3122 | . . . . . | Cross-sectional configuration is multi-lobal  |
| Y10T 442/313  | . . .     | Strand material formed of individual filaments having different chemical compositions   |
| Y10T 442/3138 | . . . .   | Including inorganic filament  |
| Y10T 442/3146 | . .       | Strand material is composed of two or more polymeric materials in physically distinct relationship [e.g., sheath-core, side-by-side, islands-in-sea, fibrils-in-matrix, etc.] or composed of physical blend of chemically different polymeric materials or a physical blend of a polymeric material and a filler material |

|               |           |   |
|---------------|-----------|---|
| Y10T 442/3154 | . . .     | Sheath-core multicomponent strand material  |
| Y10T 442/3163 | . . .     | Islands-in-sea multicomponent strand material   |
| Y10T 442/3171 | . . .     | Strand material is a blend of polymeric material and a filler material  |
| Y10T 442/3179 | . .       | Woven fabric is characterized by a particular or differential weave other than fabric in which the strand denier or warp/weft pick count is specified |
| Y10T 442/3187 | . . .     | Triaxially woven fabric   |
| Y10T 442/3195 | . . .     | Three-dimensional weave [e.g., x-y-z planes, multi-planar warps and/or wefts, etc.]   |
| Y10T 442/3203 | . . . .   | Multi-planar warp layers  |
| Y10T 442/3211 | . . . .   | Multi-planar weft layers  |
| Y10T 442/322  | . . .     | Warp differs from weft  |
| Y10T 442/3228 | . . . .   | Materials differ  |
| Y10T 442/3236 | . . . . . | Including inorganic strand material   |
| Y10T 442/3244 | . . . . . | Including natural strand material [e.g., cotton, wool, etc.]  |
| Y10T 442/3252 | . . . . . | Including synthetic polymeric strand material   |
| Y10T 442/326  | . . . . . | Including synthetic polymeric strand material   |
| Y10T 442/3268 | . . . . . | Including natural strand material   |
| Y10T 442/3276 | . . . . . | Including polyamide strand material   |
| Y10T 442/3285 | . . . . . | Including polyester strand material   |
| Y10T 442/3293 | . . .     | Warp and weft are identical and contain at least two chemically different strand materials  |
| Y10T 442/3301 | . . .     | Coated, impregnated, or autogenous bonded   |
| Y10T 442/3309 | . . . .   | Woven fabric contains inorganic strand material   |
| Y10T 442/3317 | . . . .   | Woven fabric contains synthetic polymeric strand material   |
| Y10T 442/3325 | . .       | Including a foamed layer or component   |
| Y10T 442/3333 | . . .     | Including a free metal or alloy constituent   |
| Y10T 442/3341 | . . .     | Plural foam layers  |
| Y10T 442/335  | . . .     | Plural fabric layers  |
| Y10T 442/3358 | . . . .   | Including a nonwoven fabric layer   |
| Y10T 442/3366 | . . .     | Woven fabric is coated, impregnated, or autogenously bonded   |
| Y10T 442/3374 | . . . .   | Coating or impregnation includes particulate material other than fiber  |
| Y10T 442/3382 | . .       | Including a free metal or alloy constituent   |
| Y10T 442/339  | . . .     | Metal or metal-coated strand  |
| Y10T 442/3398 | . . .     | Vapor or sputter deposited metal layer  |
| Y10T 442/3407 | . . .     | Chemically deposited metal layer [e.g., chemical precipitation or electrochemical deposition or plating, etc.]  |
| Y10T 442/3415 | . . .     | Preformed metallic film or foil or sheet [film or foil or sheet had structural integrity prior to association with the woven fabric]                  |
| Y10T 442/3423 | . . . .   | Plural metallic films or foils or sheets  |
| Y10T 442/3431 | . . . .   | Plural fabric layers  |
| Y10T 442/3439 | . . . . . | Including a nonwoven fabric layer   |

|               |           |  |
|---------------|-----------|--|
| Y10T 442/3447 | . . . .   | Including a preformed synthetic polymeric film or sheet [i.e., film or sheet having structural integrity prior to association with the woven fabric]   |
| Y10T 442/3455 | . . . .   | Including particulate material other than fiber  |
| Y10T 442/3463 | . . . .   | Plural fabric layers   |
| Y10T 442/3472 | . . . .   | Woven fabric including an additional woven fabric layer  |
| Y10T 442/348  | . . . .   | Mechanically needled or hydroentangled   |
| Y10T 442/3488 | . . . .   | Four or more layers  |
| Y10T 442/3496 | . . . .   | Coated, impregnated, or autogenously bonded  |
| Y10T 442/3504 | . . . .   | Woven fabric layers comprise chemically different strand material  |
| Y10T 442/3512 | . . . .   | Three or more fabric layers  |
| Y10T 442/352  | . . . . . | One of which is a nonwoven fabric layer  |
| Y10T 442/3528 | . . . .   | Three or more fabric layers  |
| Y10T 442/3537 | . . . . . | One of which is a nonwoven fabric layer  |
| Y10T 442/3545 | . . . .   | Woven fabric layers impregnated with a blend of thermosetting and thermoplastic resins   |
| Y10T 442/3553 | . . . .   | Woven fabric layers impregnated with an organosilicon resin  |
| Y10T 442/3561 | . . . .   | Woven fabric layers impregnated with a natural or synthetic rubber   |
| Y10T 442/3569 | . . . .   | Woven fabric layers impregnated with a thermosetting resin   |
| Y10T 442/3577 | . . . . . | Phenolic resin   |
| Y10T 442/3585 | . . . . . | Epoxy resin  |
| Y10T 442/3594 | . . . .   | Woven fabric layers impregnated with a thermoplastic resin [e.g., vinyl polymer, etc.]   |
| Y10T 442/3602 | . . . .   | Three or more distinct layers  |
| Y10T 442/361  | . . . .   | At least one layer is derived from water-settable material [e.g., cement, gypsum, etc.]  |
| Y10T 442/3618 | . . . .   | At least one layer contains wood or cork   |
| Y10T 442/3626 | . . . .   | At least one layer contains bituminous material [e.g., tar, pitch, asphalt, etc.]  |
| Y10T 442/3634 | . . . .   | At least one layer comprises paper   |
| Y10T 442/3642 | . . . .   | At least one layer contains natural or synthetic rubber  |
| Y10T 442/365  | . . . .   | At least one layer is a preformed synthetic polymeric film or sheet  |
| Y10T 442/3659 | . . . .   | At least one layer comprises ceramic or glass material in other than particulate form  |
| Y10T 442/3667 | . . . .   | Composite consisting of at least two woven fabrics bonded by an interposed adhesive layer [but not two woven fabrics bonded together by an impregnation which penetrates through the thickness of at least one of the woven fabric layers] |
| Y10T 442/3675 | . . . . . | Fabric layer contains natural strand material  |
| Y10T 442/3683 | . . . . . | Fabric layer contains carbon or carbonaceous strand material   |
| Y10T 442/3691 | . . . . . | Fabric layer contains glass strand material  |
| Y10T 442/3699 | . . . .   | Including particulate material other than fiber  |
| Y10T 442/3707 | . . . .   | Woven fabric including a nonwoven fabric layer other than paper  |

|               |         |   |
|---------------|---------|---|
| Y10T 442/3715 | . . .   | Nonwoven fabric layer comprises parallel arrays of strand material  |
| Y10T 442/3724 | . . .   | Needled   |
| Y10T 442/3732 | . . . . | Including an additional nonwoven fabric   |
| Y10T 442/374  | . . . . | Additional nonwoven fabric comprises chemically different strand material than the first nonwoven fabric  |
| Y10T 442/3748 | . . . . | Including inorganic strand material   |
| Y10T 442/3756 | . . . . | Nonwoven fabric layer comprises at least two chemically different fibers  |
| Y10T 442/3764 | . . . . | Coated, impregnated, or autogenously bonded   |
| Y10T 442/3772 | . . .   | Hydroentangled  |
| Y10T 442/378  | . . .   | Coated, impregnated, or autogenously bonded   |
| Y10T 442/3789 | . . . . | Plural nonwoven fabric layers   |
| Y10T 442/3797 | . . . . | Coating or impregnation is derived from a water-settable material [e.g., cement, gypsum, etc.]  |
| Y10T 442/3805 | . . . . | Coating or impregnation contains natural or synthetic rubber  |
| Y10T 442/3813 | . . . . | Coating or impregnation contains synthetic polymeric material   |
| Y10T 442/3821 | . . . . | Coating or impregnation contains bituminous material  |
| Y10T 442/3829 | . . . . | Four or more layers   |
| Y10T 442/3837 | . . . . | Including particulate material other than fiber   |
| Y10T 442/3846 | . . . . | Including particulate material other than fiber   |
| Y10T 442/3854 | . .     | Woven fabric with a preformed polymeric film or sheet   |
| Y10T 442/3862 | . . .   | Ester condensation polymer sheet or film [e.g., polyethylene terephthalate, etc.]   |
| Y10T 442/387  | . . .   | Vinyl polymer or copolymer sheet or film [e.g., polyvinyl chloride, polyvinylidene chloride, polyvinyl acetate, etc.]   |
| Y10T 442/3878 | . . .   | Fluorinated olefin polymer or copolymer sheet or film [e.g., Teflon®, etc.]   |
| Y10T 442/3886 | . . .   | Olefin polymer or copolymer sheet or film [e.g., polypropylene, polyethylene, ethylene-butylene copolymer, etc.]  |
| Y10T 442/3894 | . . .   | Amide condensation polymer sheet or film [e.g., nylon 6, etc.]  |
| Y10T 442/3902 | . . .   | Polyimide sheet or film   |
| Y10T 442/3911 | . . .   | Natural or synthetic rubber sheet or film   |
| Y10T 442/3919 | . . .   | Including particulate material other than fiber   |
| Y10T 442/3927 | . .     | Including a paper or wood pulp layer  |
| Y10T 442/3935 | . . .   | Mica paper layer  |
| Y10T 442/3943 | . . .   | Plural paper or wood pulp layers  |
| Y10T 442/3951 | . . .   | Including a bituminous layer  |
| Y10T 442/3959 | . . .   | Including an outermost adhesive layer   |
| Y10T 442/3967 | . . .   | Including a natural or synthetic rubber layer   |
| Y10T 442/3976 | . .     | Including strand which is stated to have specific attributes [e.g., heat or fire resistance, chemical or solvent resistance, high absorption for aqueous composition, water solubility, heat shrinkability, etc.] |
| Y10T 442/3984 | . . .   | Strand is other than glass and is heat or fire resistant  |

- Y10T 442/3992 . . . Strand is heat shrinkable
- Y10T 442/40 . Knit fabric [i.e., knit strand or strip material]
- Y10T 442/406 . . Including parallel strips
- Y10T 442/413 . . Including an elastic strand
- Y10T 442/419 . . Including strand precoated with other than free metal or alloy
- Y10T 442/425 . . Including strand which is of specific structural definition
- Y10T 442/431 . . . Cross-sectional configuration of strand material is specified
- Y10T 442/438 . . . Strand material formed of individual filaments having different chemical compositions
- Y10T 442/444 . . Strand is a monofilament composed of two or more polymeric materials in physically distinct relationship [e.g., sheath-core, side-by-side, islands-in-sea, fibrils-in-matrix, etc.] or composed of physical blend of chemically different polymeric materials or a physical blend of a polymeric material and a filler material
- Y10T 442/45 . . Knit fabric is characterized by a particular or differential knit pattern other than open knit fabric or a fabric in which the strand denier is specified
- Y10T 442/456 . . . Including additional strand inserted within knit fabric
- Y10T 442/463 . . . . Warp knit insert strand
- Y10T 442/469 . . Including a foamed layer or component
- Y10T 442/475 . . Including a free metal or alloy constituent
- Y10T 442/481 . . . Chemically deposited metal layer [e.g., chemical precipitation or electrochemical deposition or plating, etc.]
- Y10T 442/488 . . Including an additional knit fabric layer
- Y10T 442/494 . . Including a nonwoven fabric layer other than paper
- Y10T 442/50 . FELT FABRIC
- Y10T 442/51 . . From natural organic fiber [e.g., wool, etc.]
- Y10T 442/53 . . . Including particulate material other than fiber
- Y10T 442/54 . . . At least three layers
- Y10T 442/56 . . From synthetic organic fiber
- Y10T 442/57 . . Including particulate material other than fiber
- Y10T 442/59 . . At least three layers
- Y10T 442/60 . Nonwoven fabric [i.e., nonwoven strand or fiber material]
- Y10T 442/601 . . Nonwoven fabric has an elastic quality
- Y10T 442/602 . . . Nonwoven fabric comprises an elastic strand or fiber material
- Y10T 442/603 . . Including strand or fiber material precoated with other than free metal or alloy
- Y10T 442/604 . . . Strand or fiber material is glass
- Y10T 442/605 . . . Strand or fiber material is inorganic
- Y10T 442/607 . . . Strand or fiber material is synthetic polymer
- Y10T 442/608 . . Including strand or fiber material which is of specific structural definition
- Y10T 442/609 . . . Cross-sectional configuration of strand or fiber material is specified

|              |           |   |
|--------------|-----------|---|
| Y10T 442/61  | . . . .   | Cross-sectional configuration varies longitudinally along strand or fiber material  |
| Y10T 442/611 | . . . .   | Cross-sectional configuration of strand or fiber material is other than circular  |
| Y10T 442/612 | . . . .   | Hollow strand or fiber material   |
| Y10T 442/613 | . . . .   | Microcellular strand or fiber material  |
| Y10T 442/614 | . . . .   | Strand or fiber material specified as having micro dimensions [i.e., microfiber]  |
| Y10T 442/615 | . . . .   | Strand or fiber material is blended with another chemically different microfiber in the same layer  |
| Y10T 442/616 | . . . . . | Blend of synthetic polymeric and inorganic microfibers  |
| Y10T 442/618 | . . . . . | Blend of chemically different inorganic microfibers   |
| Y10T 442/619 | . . . .   | Including other strand or fiber material in the same layer not specified as having micro dimensions   |
| Y10T 442/62  | . . . .   | Including another chemically different microfiber in a separate layer   |
| Y10T 442/621 | . . . .   | Including other strand or fiber material in a different layer not specified as having micro dimensions  |
| Y10T 442/622 | . . . .   | Microfiber is a composite fiber   |
| Y10T 442/623 | . . . .   | Microfiber is glass   |
| Y10T 442/624 | . . . .   | Microfiber is carbon or carbonaceous  |
| Y10T 442/625 | . . . .   | Autogenously bonded   |
| Y10T 442/626 | . . . .   | Microfiber is synthetic polymer   |
| Y10T 442/627 | . . . .   | Strand or fiber material is specified as non-linear [e.g., crimped, coiled, etc.]   |
| Y10T 442/629 | . . . .   | Composite strand or fiber material  |
| Y10T 442/63  | . . . .   | Carbon or carbonaceous strand or fiber material   |
| Y10T 442/631 | . . . .   | Glass strand or fiber material  |
| Y10T 442/632 | . . . .   | A single nonwoven layer comprising non-linear synthetic polymeric strand or fiber material and strand or fiber material not specified as non-linear   |
| Y10T 442/633 | . . . . . | Synthetic polymeric strand or fiber material is of staple length  |
| Y10T 442/634 | . . . .   | A nonwoven fabric having a layer comprising non-linear synthetic polymeric strand or fiber material and a separate and distinct layer comprising strand or fiber material which is not specified as non-linear  |
| Y10T 442/635 | . . . .   | Synthetic polymeric strand or fiber material  |
| Y10T 442/636 | . . . . . | Synthetic polymeric strand or fiber material is of staple length  |
| Y10T 442/637 | . . . .   | Including strand or fiber material which is a monofilament composed of two or more polymeric materials in physically distinct relationship [e.g., sheath-core, side-by-side, islands-in-sea, fibrils-in-matrix, etc.] or composed of physical blend of chemically different polymeric materials or a physical blend of a polymeric material and a filler material |
| Y10T 442/638 | . . . .   | Side-by-side multicomponent strand or fiber material  |
| Y10T 442/64  | . . . .   | Islands-in-sea multicomponent strand or fiber material  |
| Y10T 442/641 | . . . .   | Sheath-core multicomponent strand or fiber material   |



- Y10T 442/642 . . . Strand or fiber material is a blend of polymeric material and a filler material
- Y10T 442/643 . . Including parallel strand or fiber material within the nonwoven fabric
- Y10T 442/644 . . . Parallel strand or fiber material is glass
- Y10T 442/645 . . . Parallel strand or fiber material is inorganic [e.g., rock wool, mineral wool, etc.]
- Y10T 442/646 . . . Parallel strand or fiber material is naturally occurring [e.g., cotton, wool, etc.]
- Y10T 442/647 . . Including a foamed layer or component
- Y10T 442/648 . . . Including a free metal or alloy constituent
- Y10T 442/649 . . . Plural foamed layers
- Y10T 442/651 . . . Plural fabric layers
- Y10T 442/652 . . . Nonwoven fabric is coated, impregnated, or autogenously bonded
- Y10T 442/653 . . . . Including particulate material other than fiber
- Y10T 442/654 . . Including a free metal or alloy constituent
- Y10T 442/655 . . . Metal or metal-coated strand or fiber material
- Y10T 442/656 . . . Preformed metallic film or foil or sheet [film or foil or sheet had structural integrity prior to association with the nonwoven fabric]
- Y10T 442/657 . . . Vapor, chemical, or spray deposited metal layer
- Y10T 442/658 . . . Particulate free metal or alloy constituent
- Y10T 442/659 . . Including an additional nonwoven fabric
- Y10T 442/66 . . . Additional nonwoven fabric is a spun-bonded fabric
- Y10T 442/662 . . . . Needled
- Y10T 442/663 . . . . Hydroentangled
- Y10T 442/664 . . . Including a wood fiber containing layer
- Y10T 442/665 . . . Including a layer derived from a water-settable material [e.g., cement, gypsum, etc.]
- Y10T 442/666 . . . Mechanically interengaged by needling or impingement of fluid [e.g., gas or liquid stream, etc.]
- Y10T 442/667 . . . . Needled
- Y10T 442/668 . . . Separate nonwoven fabric layers comprise chemically different strand or fiber material
- Y10T 442/669 . . . . At least one layer of inorganic strand or fiber material and at least one layer of synthetic polymeric strand or fiber material
- Y10T 442/67 . . . Multiple nonwoven fabric layers composed of the same inorganic strand or fiber material
- Y10T 442/671 . . . Multiple nonwoven fabric layers composed of the same polymeric strand or fiber material
- Y10T 442/673 . . . Including particulate material other than fiber
- Y10T 442/674 . . Nonwoven fabric with a preformed polymeric film or sheet
- Y10T 442/675 . . . Ester condensation polymer sheet or film [e.g., polyethylene terephthalate, etc.]



- Y10T 442/676 . . . Vinyl polymer or copolymer sheet or film [e.g., polyvinyl chloride, polyvinylidene chloride, polyvinyl acetate, etc.]
- Y10T 442/677 . . . Fluorinated olefin polymer or copolymer sheet or film [e.g., TeflonR, etc.]
- Y10T 442/678 . . . Olefin polymer or copolymer sheet or film [e.g., polypropylene, polyethylene, ethylene-butylene copolymer, etc.]
- Y10T 442/679 . . . Natural or synthetic rubber sheet or film
- Y10T 442/68 . . Melt-blown nonwoven fabric
- Y10T 442/681 . . Spun-bonded nonwoven fabric
- Y10T 442/682 . . Needled nonwoven fabric
- Y10T 442/684 . . . Containing at least two chemically different strand or fiber materials
- Y10T 442/685 . . . . Containing inorganic and polymeric strand or fiber materials
- Y10T 442/686 . . . . Containing polymeric and natural strand or fiber materials
- Y10T 442/687 . . . . Containing inorganic strand or fiber material
- Y10T 442/688 . . . . Containing polymeric strand or fiber material
- Y10T 442/689 . . Hydroentangled nonwoven fabric
- Y10T 442/69 . . Autogenously bonded nonwoven fabric
- Y10T 442/691 . . . Inorganic strand or fiber material only
- Y10T 442/692 . . . Containing at least two chemically different strand or fiber materials
- Y10T 442/693 . . Including a paper layer
- Y10T 442/695 . . Including a wood containing layer
- Y10T 442/696 . . Including strand or fiber material which is stated to have specific attributes [e.g., heat or fire resistance, chemical or solvent resistance, high absorption for aqueous compositions, water solubility, heat shrinkability, etc.]
- Y10T 442/697 . . Containing at least two chemically different strand or fiber materials
- Y10T 442/698 . . . Containing polymeric and natural strand or fiber materials
- Y10T 442/699 . . Including particulate material other than strand or fiber material

#### **Former US Class 464 Series**

- Y10T 464/00 Rotary shafts, gudgeons, housings, and flexible couplings for rotary shafts**
- Y10T 464/10 . having heating or cooling means
- Y10T 464/20 . with auxilliary indicator or alarm
- Y10T 464/30 . Electrical or magnetic coupling
- Y10T 464/40 . Coupling accommodates drive between members having misaligned or angularly related axes, transmits torque via radially directed pin, and has particular balancing means
- Y10T 464/50 . Shafting having particular vibration dampening or balancing structure

#### **Former US Class 477 Series**

- Y10T 477/00 Interrelated power delivery controls, including engine control**
- Y10T 477/10 . Steering by driving

|               |   |
|---------------|---|
| Y10T 477/20   | . Plural engines  |
| Y10T 477/23   | . . Electric engine   |
| Y10T 477/24   | . . . with brake control  |
| Y10T 477/26   | . . . with clutch control   |
| Y10T 477/27   | . . with clutch control   |
| Y10T 477/30   | . Electric engine   |
| Y10T 477/32   | . . with clutch control   |
| Y10T 477/322  | . . . with brake control  |
| Y10T 477/3225 | . . . . Stopped at end of cycle   |
| Y10T 477/323  | . . . Engine stopped at end of cycle  |
| Y10T 477/325  | . . . Common controller   |
| Y10T 477/327  | . . . Electric clutch   |
| Y10T 477/328  | . . . Speed responsive  |
| Y10T 477/33   | . . with transmission control   |
| Y10T 477/333  | . . . Load motion limit control   |
| Y10T 477/337  | . . . Transmission change by moving engine  |
| Y10T 477/34   | . . . Reversible engine   |
| Y10T 477/343  | . . . Engine starting interlock   |
| Y10T 477/347  | . . . Condition responsive engine control   |
| Y10T 477/35   | . . Brake engaged when engine energy deactivated, brake disengaged when engine energy activated |
| Y10T 477/357  | . . . Cam actuated brake  |
| Y10T 477/363  | . . . Electrically actuated brake   |
| Y10T 477/37   | . . Brake actuation opens switch to engine  |
| Y10T 477/373  | . . . Electrically actuated brake   |
| Y10T 477/377  | . . . Fluid actuated brake  |
| Y10T 477/38   | . . Control means selectively operates engine energy input and brake                            |
| Y10T 477/387  | . . . Fluid actuated brake  |
| Y10T 477/393  | . . . Electrically actuated brake   |
| Y10T 477/40   | . Gas turbine engine  |
| Y10T 477/45   | . . Continuously variable transmission  |
| Y10T 477/50   | . with supercharger   |
| Y10T 477/55   | . . Manifold pressure control   |
| Y10T 477/60   | . Transmission control  |
| Y10T 477/606  | . . Differential transmission   |
| Y10T 477/613  | . . Plural outputs  |
| Y10T 477/619  | . . Continuously variable friction transmission   |
| Y10T 477/6197 | . . . with fluid drive  |
| Y10T 477/6203 | . . . with clutch control   |
| Y10T 477/621  | . . . with brake control  |

|                |           |  |
|----------------|-----------|--|
| Y10T 477/6217  | . . .     | Interrelated control of diverse transmissions                        |
| Y10T 477/6223  | . . .     | Constant speed output  |
| Y10T 477/623   | . . .     | Controlled by engine map   |
| Y10T 477/6237  | . . .     | Belt-type  |
| Y10T 477/624   | . . . .   | Fluid pressure control   |
| Y10T 477/6242  | . . . . . | Ratio change controlled  |
| Y10T 477/62423 | . . . . . | Engine coast braking   |
| Y10T 477/62427 | . . . . . | with electric valve control  |
| Y10T 477/62429 | . . . . . | Duty ratio control   |
| Y10T 477/6243  | . . .     | Fluid pressure control   |
| Y10T 477/625   | . .       | Fluid resistance inhibits rotation of planetary transmission element |
| Y10T 477/631   | . .       | including fluid drive  |
| Y10T 477/633   | . . .     | Impeller-turbine-type  |
| Y10T 477/6333  | . . . .   | Engine controlled  |
| Y10T 477/6337  | . . . .   | with countershaft gearing  |
| Y10T 477/63378 | . . . . . | and turbine shaft brake  |
| Y10T 477/63385 | . . . . . | and clutch control   |
| Y10T 477/63393 | . . . . . | Control of or by fluid drive   |
| Y10T 477/634   | . . . .   | with hydrodynamic braking  |
| Y10T 477/6343  | . . . .   | with nonratio brake  |
| Y10T 477/6347  | . . . .   | Control responsive to fluid drive                                    |
| Y10T 477/635   | . . . .   | with clutch control  |
| Y10T 477/6351  | . . . . . | Disengaged during shift  |
| Y10T 477/6352  | . . . . . | Speed responsive   |
| Y10T 477/63525 | . . . . . | Electrical   |
| Y10T 477/6353  | . . . .   | with fluid unit vane control   |
| Y10T 477/6357  | . . . .   | Fill and empty-type fluid units                                      |
| Y10T 477/636   | . . .     | Ratio control  |
| Y10T 477/637   | . . . .   | with planetary transmission control                                  |
| Y10T 477/638   | . .       | with clutch control  |
| Y10T 477/6388  | . . .     | and brake control  |
| Y10T 477/6389  | . . . .   | Temperature responsive control                                       |
| Y10T 477/639   | . . . .   | Engine controlled  |
| Y10T 477/6392  | . . . .   | Clutch controlled  |
| Y10T 477/6394  | . . . .   | Gearing controlled   |
| Y10T 477/6395  | . . .     | Temperature responsive control                                       |
| Y10T 477/6403  | . . .     | Clutch, engine, and transmission controlled                          |
| Y10T 477/6407  | . . . .   | Electronic digital control   |
| Y10T 477/641   | . . .     | Clutch and transmission controlled                                   |
| Y10T 477/6414  | . . . .   | Speed responsive control   |

|               |           |   |
|---------------|-----------|---|
| Y10T 477/6415 | . . . . . | with manual override  |
| Y10T 477/6417 | . . . . . | Vacuum actuated clutch  |
| Y10T 477/6418 | . . . . . | Clutch and engine controlled  |
| Y10T 477/6422 | . . . . . | Speed responsive control  |
| Y10T 477/6424 | . . . . . | Plural speed signals  |
| Y10T 477/6425 | . . . . . | Clutch controlled   |
| Y10T 477/6428 | . . . . . | Electric clutch   |
| Y10T 477/643  | . . . . . | Vacuum actuated clutch  |
| Y10T 477/6432 | . . . . . | Electric control  |
| Y10T 477/6433 | . . . . . | Engine controlled   |
| Y10T 477/6437 | . . . . . | Speed responsive  |
| Y10T 477/644  | . . . . . | with brake control  |
| Y10T 477/646  | . . . . . | Anti-creep  |
| Y10T 477/647  | . . . . . | Brake controls transmission   |
| Y10T 477/648  | . . . . . | Pressure controlled   |
| Y10T 477/649  | . . . . . | One control blocks another  |
| Y10T 477/65   | . . . . . | Control by sensed ambient condition, pattern indicia, external signal, or temperature |
| Y10T 477/653  | . . . . . | Temperature control   |
| Y10T 477/656  | . . . . . | Engine starting interlock   |
| Y10T 477/663  | . . . . . | Exhaust emission control  |
| Y10T 477/669  | . . . . . | Engine ignition control for transmission change                                       |
| Y10T 477/67   | . . . . . | Ignition advanced or retarded   |
| Y10T 477/671  | . . . . . | Ignition intermitting and safety means limiting duration of intermission              |
| Y10T 477/673  | . . . . . | Ignition intermitting controlled by manifold pressure                                 |
| Y10T 477/674  | . . . . . | Ignition intermitting initiated by positioning accelerator                            |
| Y10T 477/6745 | . . . . . | Initiation inhibited by sensed condition  |
| Y10T 477/675  | . . . . . | Engine controlled by transmission   |
| Y10T 477/676  | . . . . . | Constant output shaft speed   |
| Y10T 477/677  | . . . . . | Diminution during transmission change   |
| Y10T 477/679  | . . . . . | Responsive to transmission output condition   |
| Y10T 477/68   | . . . . . | Transmission setting contingent   |
| Y10T 477/6805 | . . . . . | Change to neutral idles engine  |
| Y10T 477/6808 | . . . . . | Engine input variable in neutral  |
| Y10T 477/681  | . . . . . | Anticreep   |
| Y10T 477/688  | . . . . . | Transmission controlled by engine   |
| Y10T 477/689  | . . . . . | Shift from neutral shock control  |
| Y10T 477/6895 | . . . . . | Pressure controlled   |
| Y10T 477/69   | . . . . . | Engine [coast] braking  |
| Y10T 477/691  | . . . . . | Electric valve control  |

|                 |           |   |
|-----------------|-----------|---|
| Y10T 477/692    | . . .     | by acceleration                                   |
| Y10T 477/693    | . . .     | by input manifold pressure or engine fuel control |
| Y10T 477/6931   | . . . .   | Selector-type                                     |
| Y10T 477/6933   | . . . .   | with positive shift means                         |
| Y10T 477/69335  | . . . .   | with synchronization                              |
| Y10T 477/6934   | . . . .   | Prevents unsafe or unintentional shift            |
| Y10T 477/6935   | . . . .   | Reverse inhibitor                                 |
| Y10T 477/6936   | . . . .   | Shift valve control                               |
| Y10T 477/69362  | . . . .   | Hysteresis  |
| Y10T 477/693625 | . . . . . | Electric control                                  |
| Y10T 477/69363  | . . . .   | Plural shift valves                               |
| Y10T 477/693635 | . . . . . | Electric control                                  |
| Y10T 477/693636 | . . . . . | Downshift control                                 |
| Y10T 477/693637 | . . . . . | Kickdown  |
| Y10T 477/693638 | . . . . . | Selector valve overrule                           |
| Y10T 477/69364  | . . . . . | Downshift control                                 |
| Y10T 477/693643 | . . . . . | Kickdown  |
| Y10T 477/693645 | . . . . . | Selector valve overrule                           |
| Y10T 477/69365  | . . . . . | Electric control                                  |
| Y10T 477/69366  | . . . . . | Downshift control                                 |
| Y10T 477/69367  | . . . . . | Downshift control                                 |
| Y10T 477/693675 | . . . . . | Kickdown  |
| Y10T 477/69368  | . . . . . | Selector valve overrule                           |
| Y10T 477/6937   | . . . .   | Servo motor timing                                |
| Y10T 477/69373  | . . . . . | Downshift   |
| Y10T 477/693738 | . . . . . | with fluid accumulator                            |
| Y10T 477/693742 | . . . . . | Electric valve control                            |
| Y10T 477/693746 | . . . . . | Double acting servo                               |
| Y10T 477/693754 | . . . . . | Speed responsive control                          |
| Y10T 477/693762 | . . . . . | Electric valve control                            |
| Y10T 477/69377  | . . . . . | with fluid accumulator                            |
| Y10T 477/69378  | . . . . . | Engine parameter controls back pressure           |
| Y10T 477/69379  | . . . . . | Electric valve control                            |
| Y10T 477/6938   | . . . . . | Double acting servo                               |
| Y10T 477/69383  | . . . . . | Speed responsive control                          |
| Y10T 477/69387  | . . . . . | Electric valve control                            |
| Y10T 477/6939   | . . . .   | Transmission pressure controlled                  |
| Y10T 477/69393  | . . . . . | Variable capacity pump                            |
| Y10T 477/69395  | . . . . . | Line pressure controlled                          |
| Y10T 477/693958 | . . . . . | Responsive to speed                               |

|                 |           |   |
|-----------------|-----------|---|
| Y10T 477/693962 | . . . . . | Electric valve control  |
| Y10T 477/693964 | . . . . . | Duty ratio control  |
| Y10T 477/693965 | . . . . . | Transmission setting contingent   |
| Y10T 477/693973 | . . . . . | Electric valve control  |
| Y10T 477/69398  | . . . . . | Electric valve control  |
| Y10T 477/694    | . .       | Engine control linkage mounted on manual gearshift lever  |
| Y10T 477/70     | . .       | Clutch control  |
| Y10T 477/71     | . .       | with starter  |
| Y10T 477/73     | . .       | with fluid drive  |
| Y10T 477/735    | . . .     | Speed responsive control  |
| Y10T 477/74     | . .       | with brake control  |
| Y10T 477/743    | . . .     | Clutch controlled   |
| Y10T 477/745    | . . . .   | and brake controlled  |
| Y10T 477/747    | . . .     | Engine controlled   |
| Y10T 477/75     | . .       | Condition responsive control  |
| Y10T 477/753    | . . .     | Speed responsive  |
| Y10T 477/755    | . . . .   | Slip rate control   |
| Y10T 477/757    | . . .     | Overload release  |
| Y10T 477/759    | . . . .   | Engine shut off   |
| Y10T 477/76     | . .       | Electric clutch   |
| Y10T 477/78     | . .       | Regulated clutch engagement   |
| Y10T 477/79     | . .       | Engine controlled by clutch control   |
| Y10T 477/80     | . .       | Brake control   |
| Y10T 477/81     | . .       | Sensed condition responsive control of engine or brake  |
| Y10T 477/813    | . . .     | Brake   |
| Y10T 477/814    | . . . .   | and engine  |
| Y10T 477/816    | . . . .   | Speed or acceleration responsive  |
| Y10T 477/817    | . . .     | Speed or acceleration responsive  |
| Y10T 477/82     | . .       | Plural diverse brake means  |
| Y10T 477/83     | . .       | Engine energy control having adjusting and holding device, with means on brake control to override holding device |
| Y10T 477/833    | . . .     | Holding device engaged by electric means  |
| Y10T 477/835    | . . . .   | Magnetic holding device   |
| Y10T 477/837    | . . .     | Mechanical holding device engaged by mechanical means   |
| Y10T 477/839    | . . . .   | Device or means including a threaded shaft, rack or ratchet   |
| Y10T 477/84     | . .       | Brake control having holding device, with means on engine control to override holding device                      |
| Y10T 477/847    | . . .     | Holding device responsive to motion, speed or acceleration  |
| Y10T 477/85     | . . . .   | Holding device comprising brake valve operated by solenoid  |
| Y10T 477/853    | . . .     | Holding device engaged by electric means  |

|               |  |
|---------------|--|
| Y10T 477/857  | . . . . Holding device comprising brake valve operated by solenoid                                 |
| Y10T 477/86   | . . Brake engaged when engine energy deactivated, brake disengaged when engine energy is activated |
| Y10T 477/865  | . . . Internal combustion engine   |
| Y10T 477/868  | . . . . Controls brake valve   |
| Y10T 477/869  | . . . . . Vacuum actuated brake  |
| Y10T 477/87   | . . Brake condition change modifies engine condition   |
| Y10T 477/873  | . . . Brake actuation interrupts ignition circuit of fluid engine                                  |
| Y10T 477/877  | . . . Brake actuation decreases or eliminates fluid energy input to engine                         |
| Y10T 477/878  | . . . . by closing throttle valve  |
| Y10T 477/879  | . . . . by preventing increasing operation of engine energy control                                |
| Y10T 477/88   | . . Decreasing fluid energy input to engine actuates brake   |
| Y10T 477/89   | . . Control means selectively operates engine energy input and brake                               |
| Y10T 477/893  | . . . Foot operated control means  |
| Y10T 477/8936 | . . . . Engine and brake control including interconnected elements                                 |
| Y10T 477/8941 | . . . . Pivots and translates  |
| Y10T 477/8944 | . . . . . Pivots about intermediate fulcrum  |
| Y10T 477/8947 | . . . . Pivots about two fulcrums  |
| Y10T 477/8953 | . . . . Pivots about intermediate fulcrum  |
| Y10T 477/8959 | . . . . Lever reciprocates on moveable supports at both ends                                       |
| Y10T 477/8964 | . . . . Pivots for sequential operation  |
| Y10T 477/897  | . . . Control means including fluid passage  |

### **Former US Class 483 Series**

|                    |   |
|--------------------|---|
| <b>Y10T 483/00</b> | <b>Tool changing</b>  |
| Y10T 483/10        | . Process   |
| Y10T 483/11        | . with safety means   |
| Y10T 483/115       | . . Guard   |
| Y10T 483/12        | . with means to regulate operation by means of replaceable information supply [e.g. , templet, tape, card, etc. ] |
| Y10T 483/123       | . . Replaceable information comprising tool location  |
| Y10T 483/127       | . . . including determining optimum tool access path  |
| Y10T 483/13        | . with control means energized in response to activator stimulated by condition sensor                            |
| Y10T 483/132       | . . Responsive to tool identifying information  |
| Y10T 483/134       | . . . Identifying information on tool or tool holder  |
| Y10T 483/136       | . . Responsive to tool  |
| Y10T 483/138       | . . . including means to monitor and control, i.e., adaptive machining  |
| Y10T 483/14        | . with signal or indicator  |
| Y10T 483/15        | . with means to condition or adjust tool or tool support  |

|               |  |
|---------------|--|
| Y10T 483/16   | • with means to transfer work  |
| Y10T 483/165  | • • Plural machine tools, e.g., flexible manufacturing   |
| Y10T 483/17   | • including machine tool or component  |
| Y10T 483/1702 | • • Rotating work machine tool [e.g., screw machine, lathe, etc.]                                |
| Y10T 483/1705 | • • • Tool support comprises rotary spindle  |
| Y10T 483/1707 | • • • Tool having specific mounting or work treating feature                                     |
| Y10T 483/171  | • • • • Workpiece holder [e.g., chuck or chuck jaw, collet, etc.]                                |
| Y10T 483/1712 | • • • • Turning tool insert changer  |
| Y10T 483/1714 | • • • Tool changer between tool support and matrix   |
| Y10T 483/1717 | • • • • Plural matrices  |
| Y10T 483/1719 | • • • • Tool support comprises turret  |
| Y10T 483/1721 | • • • • • Linearly moveable tool changer   |
| Y10T 483/1724 | • • • • Linearly moveable tool changer   |
| Y10T 483/1726 | • • • Direct tool exchange between tool support and matrix                                       |
| Y10T 483/1729 | • • Reciprocating tool machine tool [e.g., broaching machine, shaping machine, etc.]             |
| Y10T 483/1731 | • • • including matrix   |
| Y10T 483/1733 | • • Rotary spindle machine tool [e.g., milling machine, boring, machine, grinding machine, etc.] |
| Y10T 483/1736 | • • • Tool having specific mounting or work treating feature                                     |
| Y10T 483/1738 | • • • • Tool head  |
| Y10T 483/174  | • • • • Abrading wheel   |
| Y10T 483/1743 | • • • • including means for angularly orienting tool and spindle                                 |
| Y10T 483/1745 | • • • • • Spindle angularly oriented to align with tool  |
| Y10T 483/1748 | • • • Tool changer between spindle and matrix  |
| Y10T 483/175  | • • • • Plural matrices  |
| Y10T 483/1752 | • • • • including tool holder pivotable about axis   |
| Y10T 483/1755 | • • • • • Plural tool holders pivotable about common axis  |
| Y10T 483/1757 | • • • • • including intermediate tool changer  |
| Y10T 483/176  | • • • • • • Intermediate tool changer includes tool holder pivotable about axis                  |
| Y10T 483/1762 | • • • • • • Tool holders pivotable with respect to each other                                    |
| Y10T 483/1764 | • • • • • • Tool holders pivotable about plural nonparallel axes                                 |
| Y10T 483/1767 | • • • • • • Linearly movable tool holders  |
| Y10T 483/1769 | • • • • • • Extensible tool holders  |
| Y10T 483/1771 | • • • • • • Translatable axis  |
| Y10T 483/1774 | • • • • • Distinct tool changer for each tool  |
| Y10T 483/1776 | • • • • • including intermediate tool changer  |
| Y10T 483/1779 | • • • • • Linearly movable tool holder   |
| Y10T 483/1781 | • • • • • Tool holder pivotable about plural nonparallel axes                                    |
| Y10T 483/1783 | • • • • including linearly translatable tool changer [e.g., shuttle, ram, etc.]                  |



|               |   |
|---------------|---|
| Y10T 483/1786 | . . . . . Plural tool holders                               |
| Y10T 483/1788 | . . . . . Orthogonally translatable                         |
| Y10T 483/179  | . . . Direct tool exchange between spindle and matrix       |
| Y10T 483/1793 | . . . . Spindle comprises tool changer                      |
| Y10T 483/1795 | . . . . . Matrix indexes selected tool to transfer position |
| Y10T 483/1798 | . . . . . including means to project tool from matrix       |
| Y10T 483/18   | . Tool transfer to or from matrix                           |
| Y10T 483/1809 | . . Matrix including means to latch tool                    |
| Y10T 483/1818 | . . Matrix including means to project tool for transfer     |
| Y10T 483/1827 | . . . Rectilinear   |
| Y10T 483/1836 | . . . Pivoting  |
| Y10T 483/1845 | . . Plural matrices   |
| Y10T 483/1855 | . . . including tool replenishing                           |
| Y10T 483/1864 | . . including tool pot or adapter                           |
| Y10T 483/1873 | . . Indexing matrix   |
| Y10T 483/1882 | . . . Rotary disc   |
| Y10T 483/1891 | . . . Chain or belt   |
| Y10T 483/19   | . Miscellaneous   |