

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B65 CONVEYING; PACKING; STORING; HANDLING THIN OR FILAMENTARY MATERIAL

B65H HANDLING THIN OR FILAMENTARY MATERIAL, e.g. SHEETS, WEBS, CABLES

NOTES

1. This subclass does not cover methods or devices intimately associated with other operations on thin or filamentary material, e.g. sheets, webs, cables or means for performing such operations, which are classified in the relevant subclasses for these operations, e.g.:

[B07C](#)

Postal sorting, similar sorting of documents, e.g. cheques

[B08B 1/02](#)

Cleaning travelling work, e.g. webs, by methods involving the use of tools, brushes or like members

[B21B 41/00](#)

Metal rolling involving guiding, conveying or accumulating easily-flexible work, e.g. wire, sheet metal bands, in loops or curves

[B21C 47/00](#)

, Winding-up, coiling, winding-off or temporarily

[B21C 49/00](#)

accumulating metal wire, metal band or other flexible metal material, characterised by features relevant to metal processing only, other than by rolling

[B21D 43/00](#)

Feeding, positioning or storing devices, combined with, or arranged in, or specially adapted for use in connection with, apparatus for working or processing sheet metal without essentially removing material

[B23K 9/12](#)

Means for automatic feeding of electrodes for spot or seam welding or cutting

[B29C 31/00](#)

Handling for shaping or joining of plastics, for shaping of substances in a plastic state in general or for after-treatment of shaped products, e.g. feeding the material to be shaped

[B41B 15/32](#)

, Film-handling mechanisms in photographic

[B41B 21/32](#)

composing machines

[B41F 13/02](#)

Conveying or guiding webs through rotary printing presses or machines

[B41J 11/00](#)

to Handling of copy- or impression-transfer material

[B41J 17/00](#)

in typewriters or selective printing mechanisms

[B41K 3/44](#)

Means for handling copy matter in stamping or numbering apparatus or devices

[B41L](#)

Handling sheets or webs in apparatus or devices for manifolding, duplicating or printing for office or other commercial purposes, or on addressing machines or like series-printing machines

[B42B](#)

Handling relating to permanently attaching together sheets, quires, or signatures

[B42C](#)

Handling sheets in book-binding

[B65B](#)

Handling of sheets or webs in apparatus for, or methods of, packaging articles, not of interest apart from their application in packaging machines

[B65C](#)

Handling of labels in labelling or tagging apparatus

[C14B 1/62](#)

Winding or stacking hides or leather in machines or devices for manufacturing leather

[D01- D07](#)

Spinning, weaving, braiding, lace-making, knitting, sewing, making ropes or cables

[D21F 2/00](#)

Transferring webs from wet ends to press sections in paper-making

[F26B 13/00](#)

Handling fabrics, fibres, yarns or other material in long lengths in drying apparatus

[G03B](#)

Film-strip handling or handling of pictures in apparatus for taking photographs or for projecting or viewing them

[G06K 13/00](#)

Conveying record carriers from one station to another

[G06M 7/00](#)

Counting of flat articles, e.g. sheets, carried by a conveyor

[G11B 15/00](#)

to Information storage based on relative movement

[G11B 19/00](#)

, between record carrier and transducer,

[G11B 23/00](#)

, involving handling record carriers for

[G11B 25/00](#)

recording or reproducing

[H01F 41/06](#)

Manufacturing coils for magnets, inductances, transformers, by winding

[H01G 13/02](#)

Machines for winding capacitors

[H04N 1/00](#)

Sheet handling not of interest apart from its use in systems for transmission or reproduction of pictures or patterns not varying in time, e.g. facsimile transmission

2. In this subclass:

B65H

(continued)

- the groups relating to thin material, as defined under (i) of Note (3) below, are primarily intended to cover the handling of articles made of paper or cardboard, but also include the handling of articles made of other materials which have similar characteristics or present similar handling problems, e.g. articles made of sheet-plastics or leather;
 - the groups relating to filamentary material (groups [B65H 49/00](#) onwards,) as defined in Note (3) below, cover only methods or devices of general application or interest.
3. In this subclass, the following terms or expressions are used with the meanings indicated:
- "handling" includes feeding, folding (other than in the manufacture of products), guiding, orientating, storing, unwinding, and winding;
 - "thin material" includes:
 - i. sheets, signatures, envelopes, blanks, and thin and thin piles thereof (hereinafter referred to as "articles"), and
 - ii. webs, tapes, and films, e.g. of paper, fabric, metal foil, or plastics;
 - "filamentary material" includes thread, wires, ropes, cables, and hoses;
 - "package" means a mass of filamentary material, formed by coiling, depositing, or winding, with or without a supporting core or former or an enclosing container or receptacle.
 - {"yarn" also covers similar filamentary materials.}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

B65H 19/16	covered by	B65H 19/1889
B65H 35/07	covered by	B65H 35/0006
B65H 77/00	covered by	B65H 23/00 , B65H 59/00
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Feeding articles to machines; Separating articles from piles; Pile supports (manipulators [B25J](#))

- | | | | |
|-------------|---|-------------|--|
| 1/00 | Supports or magazines for piles from which articles are to be separated (carriers used for associating, collating, or gathering articles B65H 39/00) | | |
| 1/02 | • adapted to support articles on edge | 1/26 | • with auxiliary supports to facilitate introduction or renewal of the pile |
| 1/022 | • . {with non-controlled means for advancing the pile to present the pile to the separating device, e.g. weights or spring} | 1/263 | • . {Auxiliary supports for keeping the pile in the separation process during introduction of a new pile} |
| 1/025 | • . {with controlled positively-acting mechanical devices for advancing the pile to present the articles to the separating device} | 1/266 | • . {Support fully or partially removable from the handling machine, e.g. cassette, drawer (B65H 1/027 takes precedence)} |
| 1/027 | • . {Support fully or partially removable from the handling machine, e.g. cassette, drawer} | 1/28 | • compartmented to receive piles side-by-side |
| 1/04 | • adapted to support articles substantially horizontally, e.g. for separation from top of pile | 1/30 | • with means for replenishing the pile during continuous separation of articles therefrom {(B65H 1/22 takes precedence)} |
| 1/06 | • . for separation from bottom of pile | 3/00 | Separating articles from piles (associating, collating, or gathering articles B65H 39/00; machines for separating superposed webs B65H 41/00; unpiling thin material combined with folding B65H 45/26; combinations of piling and depiling operations, of interest apart from the single operation of piling or depiling B65H 83/00 {, B07C 1/02, G07D 11/50 }) |
| 1/08 | • with means for advancing the articles to present the articles to the separating device {(B65H 1/02 takes precedence)} | 3/02 | • using friction forces between articles and separator |
| 1/10 | • . comprising weights {(B65H 1/022 takes precedence)} | 3/04 | • . Endless-belt separators |
| 1/12 | • . comprising spring {(B65H 1/022 takes precedence)} | 3/042 | • . . {separating from the bottom of the pile} |
| 1/14 | • . comprising positively-acting mechanical devices {(B65H 1/025 takes precedence)} | 3/045 | • . . {for separating substantially vertically stacked articles} |
| 1/16 | • . comprising pneumatic or hydraulic means {(B65H 1/18 , B65H 1/20 take precedence)} | 3/047 | • . . {separating from the top of a pile} |
| 1/18 | • . controlled by height of pile | 3/06 | • . Rollers or like rotary separators {(B65H 3/42 takes precedence)} |
| 1/20 | • . controlled by weight of pile; Floating arrangements | 3/0607 | • . . {cooperating with means for automatically separating the pile from roller or rotary separator after a separation step} |
| 1/22 | • . moving in direction of plane of articles, e.g. for bodily advancement of fanned-out piles | 3/0615 | • . . {reciprocating and rotatable in one direction only} |
| 1/225 | • . . {Round stack feeders} | 3/0623 | • . . {acting at least during a part of each separation cycle on the articles in a direction opposite to the final separating direction} |
| 1/24 | • . with means for relieving or controlling pressure of the pile | 3/063 | • . . {separating from the bottom of pile (B65H 3/0615 , B65H 3/0623 take precedence)} |

- 3/0638 . . . {Construction of the rollers or like rotary separators ([B65H 3/0615](#) takes precedence; construction of feed or guide rollers [B65H 27/00](#))}
- 3/0646 {Wave generation rollers, i.e. combing wheels}
- 3/0653 . . . {for separating substantially vertically stacked articles}
- 3/0661 . . . {for separating inclined-stacked articles with separator rollers above the stack}
- 3/0669 . . . {Driving devices therefor}
- 3/0676 . . . {with two or more separator rollers in the feeding direction}
- 3/0684 . . . {on moving support, e.g. pivoting, for bringing the roller or like rotary separator into contact with the pile}
- 3/0692 . . . {Vacuum assisted separator rollers}
- 3/08 . . . using pneumatic force {([B65H 3/40](#), [B65H 3/42](#) take precedence)}
- 3/0808 . . . {Suction grippers}
- 3/0816 . . . {separating from the top of pile}
- 3/0825 {and acting on the rear part of the articles relatively to the final separating direction}
- 3/0833 {and acting on the front part of the articles relatively to the final separating direction}
- 3/0841 {this action resulting at least during a part of each separating cycle, in a movement of at least the front part of the articles in a direction opposite to the final separating direction}
- 3/085 . . . {separating from the bottom of pile}
- 3/0858 {this action resulting merely in a curvature of each article being separated (in combination with the use of screw or like separators [B65H 3/28](#))}
- 3/0866 {the final separation being performed between rollers}
- 3/0875 {the final separation being performed by mechanical grippers}
- 3/0883 . . . {Construction of suction grippers or their holding devices}
- 3/0891 . . . {Generating or controlling the depression ([B65H 3/0883](#), [B65H 3/14](#) take precedence; in response to abnormal circumstances [B65H 7/16](#))}
- 3/10 . . Suction rollers
- 3/12 . . Suction bands, belts, or tables moving relatively to the pile
- 3/122 . . . {Suction tables}
- 3/124 . . . {Suction bands or belts}
- 3/126 {separating from the bottom of pile}
- 3/128 {separating from the top of pile}
- 3/14 . . Air blasts producing partial vacuum
- 3/16 . . using magnetic force
- 3/18 . . using electrostatic force
- 3/20 . . using adhesives
- 3/22 . . by needles or the like engaging the articles
- 3/24 . . by pushers engaging the edges of the articles
- 3/242 . . {for separating a part of the pile, i.e. several articles at once}
- 3/245 . . . {the pile being pre-marked}
- 3/247 . . . {the pile being off-set}
- 3/26 . . by separators engaging folds, flaps, or projections of articles
- 3/28 . . by screw or like separators
- 3/30 . . by escapement devices ([screw and like separators B65H 3/28](#)); from staggered piles; from piles of articles having staggered formations, e.g. cuts or perforations
- 3/32 . . by elements, e.g. fingers, plates, rollers, inserted or traversed between articles to be separated and remainder of the pile ([such elements acting only as supplementary devices to assist separation or prevent double feed B65H 3/50](#))
- 3/322 . . {for separating a part of the pile, i.e. several articles at once}
- 3/325 . . . {the pile being pre-marked}
- 3/327 . . . {the pile being off-set}
- 3/34 . . Article-retaining devices controlling the release of the articles to the separators
- 3/36 . . by separators moved in special paths, e.g. enclosing an area
- 3/38 . . . the paths not enclosing an area
- 3/40 . . by two or more separators acting alternately on the same pile ([rotary or oscillating bodies carrying two or more separators B65H 3/42](#))
- 3/42 . . by two or more separators mounted for movement with, or relative to, rotary or oscillating bodies
- 3/44 . . Simultaneously, alternately, or selectively separating articles from two or more piles
- 3/443 . . . {simultaneously}
- 3/446 . . . {alternatively, i.e. according to a fixed sequence}
- 3/46 . . Supplementary devices or measures to assist separation or prevent double feed ([control means comprising detectors responsive to double feed B65H 7/12](#))
- 3/48 . . Air blast acting on edges of, or under, articles
- 3/50 . . Elements, e.g. fingers, plates, rollers, inserted or traversed between articles to be separated and remainder of the pile
- 3/52 . . Friction retainers acting on under or rear side of article being separated
- 3/5207 . . . {Non-driven retainers, e.g. movable retainers being moved by the motion of the article}
- 3/5215 {the retainers positioned under articles separated from the top of the pile}
- 3/5223 {Retainers of the pad-type, e.g. friction pads}
- 3/523 {the retainers positioned over articles separated from the bottom of the pile}
- 3/5238 {Retainers of the pad-type, e.g. friction pads}
- 3/5246 . . . {Driven retainers, i.e. the motion thereof being provided by a dedicated drive}
- 3/5253 {the retainers positioned under articles separated from the top of the pile}
- 3/5261 {Retainers of the roller type, e.g. rollers}
- 3/5269 {Retainers of the belt type, e.g. belts}
- 3/5276 {the retainers positioned over articles separated from the bottom of the pile}
- 3/5284 {Retainers of the roller type, e.g. rollers}
- 3/5292 {Retainers of the belt type, e.g. belts}
- 3/54 . . Pressing or holding devices
- 3/56 . . Elements, e.g. scrapers, fingers, needles, brushes, acting on separated article or on edge of the pile ([B65H 3/52](#) takes precedence)}
- 3/565 . . . {for reintroducing partially separated articles in the stack}

- 3/58 . . Articles spiked, threaded, cemented, or gummed together, to prevent double feed, e.g. piles with gummed edges
- 3/60 . . Loosening articles in piles
- 3/62 . . . by swinging, agitating, or knocking the pile
- 3/64 . . . by vacuum apparatus
- 3/66 . Article guides or smoothers, e.g. movable in operation
- 3/68 . . immovable in operation
- 5/00 Feeding articles separated from piles; Feeding articles to machines** ([{B65H 9/00 takes precedence; }](#) identical mechanisms or parts for delivering or advancing articles from machines [B65H 29/00](#); recirculating articles [B65H 85/00](#) {, [G03B 27/6257](#)})
- 5/002 . {Adaptations of counting devices (delivery of articles from machines [B65H 29/001](#))}
- 5/004 . {using electrostatic force}
- 5/006 . {Feeding stacks of articles to machines}
- 5/008 . {using vibrations}
- 5/02 . by belts or chains {, e.g. between belts or chains (by combinations of endless conveyors and grippers [B65H 5/085](#); by suction belts [B65H 5/224](#))}
- 5/021 . . {by belts}
- 5/023 . . . {between a pair of belts forming a transport nip}
- 5/025 . . . {between belts and rotary means, e.g. rollers, drums, cylinders or balls, forming a transport nip}
- 5/026 . . . {between belts and stationary pressing, supporting or guiding elements forming a transport nip}
- 5/028 . . {by chains}
- 5/04 . by movable tables or carriages (rotary tables [B65H 5/18](#) {; suction gripper or gripper tables [B65H 5/10](#)})
- 5/06 . by rollers {or balls, e.g. between rollers (transport by suction rollers [B65H 5/226](#))}
- 5/062 . . {between rollers or balls}
- 5/064 . . . {the axes of the rollers being perpendicular to the plane of the articles}
- 5/066 . . {the articles resting on rollers or balls}
- 5/068 . . {between one or more rollers or balls and stationary pressing, supporting or guiding elements}
- 5/08 . by grippers, e.g. suction grippers
- 5/085 . . {by combinations of endless conveyors and grippers (suction belts [B65H 5/224](#))}
- 5/10 . . Reciprocating or oscillating grippers {, e.g. suction or gripper tables}
- 5/12 . . Revolving grippers, e.g. mounted on arms, frames or cylinders
- 5/14 . . Details of grippers; Actuating-mechanisms therefor
- 5/16 . by pusher, needles, friction, or like devices adapted to feed single articles along a surface or table
- 5/18 . by rotary dials or tables
- 5/20 . by dropping-roller or like device
- 5/22 . by air-blast or suction device (suction grippers [B65H 5/08](#))
- 5/222 . . {by suction devices}
- 5/224 . . . {by suction belts ([B65H 11/005](#) takes precedence)}
- 5/226 . . . {by suction rollers}
- 5/228 . . {by air-blast devices}
- 5/24 . {Feeding articles in overlapping streams, i.e. by separation of articles from a pile}
- 5/26 . Duplicate, alternate, selective, or coacting feeds
- 5/28 . Feeding articles stored in rolled or folded bands
- 5/30 . Opening devices for folded sheets or signatures
- 5/301 . . {comprising blade-like means inserted between the parts to be opened}
- 5/302 . . . {the blade-like means being stationary}
- 5/303 . . {comprising movable endless means for opening the folded sheets ([B65H 5/308](#) takes precedence)}
- 5/305 . . {comprising rotary means for opening the folded sheets ([B65H 5/308](#) takes precedence)}
- 5/306 . . . {two opposite rotary means, only one of them having gripping means}
- 5/307 . . . {two opposite rotary means, both having gripping means}
- 5/308 . . {the folded sheets or signatures travelling in hanging position}
- 5/32 . Saddle-like members over which partially-unfolded sheets or signatures are fed to signature-gathering, stitching, or like machines
- 5/34 . Varying the phase of feed relative to the receiving machine
- 5/36 . Article guides or smoothers, e.g. movable in operation
- 5/38 . . immovable in operation
- 7/00 Controlling article feeding, separating, pile-advancing, or associated apparatus, to take account of incorrect feeding, absence of articles, or presence of faulty articles**
- 7/02 . by feelers or detectors
- 7/04 . . responsive to absence of articles, e.g. exhaustion of pile ([B65H 7/14](#) takes precedence)
- 7/06 . . responsive to presence of faulty articles or incorrect separation or feed ([B65H 7/14](#) takes precedence)
- 7/08 . . . responsive to incorrect front register
- 7/10 . . . responsive to incorrect side register ([controlling transverse register of webs B65H 23/032](#))
- 7/12 . . . responsive to double feed or separation
- 7/125 {sensing the double feed or separation without contacting the articles}
- 7/14 . . by photoelectric feelers or detectors
- 7/16 . Controlling air-supply to pneumatic separators
- 7/18 . Modifying or stopping actuation of separators
- 7/20 . Controlling associated apparatus
- 9/00 Registering, e.g. orientating, articles; Devices therefor**
- 9/002 . {changing orientation of sheet by only controlling movement of the forwarding means, i.e. without the use of stop or register wall}
- 9/004 . {Deskewing sheet by abutting against a stop, i.e. producing a buckling of the sheet}
- 9/006 . . {the stop being formed by forwarding means in stand-by}
- 9/008 . . {the stop being formed by reversing the forwarding means}
- 9/02 . Gauge pins
- 9/04 . Fixed or adjustable stops or gauges ([gauge pins B65H 9/02](#))

- 9/06 . Movable stops or gauges, e.g. rising and falling front stops {[\(B65H 11/007 takes precedence\)](#)}
- 9/08 . Holding devices, e.g. finger, needle, suction, for retaining articles in registered position
- 9/10 . Pusher and like movable registers; Pusher or gripper devices which move articles into registered position
- 9/101 . . {acting on the edge of the article}
- 9/103 . . {acting by friction or suction on the article for pushing or pulling it into registered position, e.g. against a stop}
- 9/105 . . . {using suction means}
- 9/106 . . . {using rotary driven elements as part acting on the article [\(B65H 9/105 takes precedence; registering laterally while article is forwarded in principal direction B65H 9/16\)](#)}
- 9/108 . . {acting by air blast}
- 9/12 . carried by article grippers
- 9/14 . Retarding or controlling the forward movement of articles as they approach stops
- 9/16 . Inclined tape, roller, or like article-forwarding side registers
- 9/163 . . {Tape}
- 9/166 . . {Roller}
- 9/18 . Assisting by devices such as reflectors, lenses, transparent sheets, or mechanical indicators
- 9/20 . Assisting by photoelectric, sonic, or pneumatic indicators
- 11/00 Feed tables**
- 11/002 . {incorporating transport belts}
- 11/005 . . {Suction belts}
- 11/007 . {with front stop arrangements}
- 11/02 . angularly adjustable in plane of articles
- 13/00 Lifting the ends of piles to facilitate the formation of overlapped piles**
- 15/00 Overturning articles**
- 15/02 . Overturning piles

Feeding webs to or from machines; Winding or unwinding webs; Splicing webs (web-delivering apparatus incorporating devices for performing auxiliary operations [B65H 35/00](#), [B65H 37/00](#); associating two or more webs [B65H 39/16](#); winding or unwinding metal band or like flexible metallic material during manufacture [B21C](#); {cutting machines or devices in general [B26D](#)} ; inselective printers, e.g. typewriters, ink-ribbon mechanisms [B41J](#); in cinematographic or photographic apparatus [G03B](#); winding, unwinding, or feeding tape to, in, or from, information processing apparatus [G06](#), [G11B](#))

- 16/00 Unwinding, paying-out webs** {(reel-to-reel type web winding and unwinding mechanisms [B65H 18/103](#), [B65H 18/145](#))}
- 16/005 . {Dispensers, i.e. machines for unwinding only parts of web roll}
- 16/02 . Supporting web roll
- 16/021 . . {Multiple web roll supports}
- 16/023 . . . {rotatable}
- 16/025 . . {Unwinding apparatus incorporating length-measuring devices}
- 16/026 . . {Unwinding apparatus incorporating inspecting devices}
- 16/028 . . {on its outer circumference [\(B65H 16/08 takes precedence\)](#)}
- 16/04 . . cantilever type

- 16/06 . . both-ends type
- 16/08 . . parallel rollers type
- 16/10 . Arrangements for effecting positive rotation of web roll
- 16/103 . . {in which power is applied to web-roll spindle}
- 16/106 . . {in which power is applied to web roll}
- 18/00 Winding webs**
- 18/02 . Supporting web roll
- 18/021 . . {Multiple web roll supports}
- 18/023 . . {on its outer circumference}
- 18/025 . . . {Parallel rollers type}
- 18/026 . . {Cantilever type}
- 18/028 . . {Both ends type}
- 18/04 . . Interior-supporting
- 18/06 . . Lateral-supporting
- 18/08 . Web-winding mechanisms
- 18/085 . . {for non-continuous winding}
- 18/10 . . Mechanisms in which power is applied to web-roll spindle
- 18/103 . . . {Reel-to-reel type web winding and unwinding mechanisms}
- 18/106 . . . {for several juxtaposed strips}
- 18/12 . . . to effect step-by-step advancement of web
- 18/14 . . Mechanisms in which power is applied to web roll, e.g. to effect continuous advancement of web
- 18/145 . . . {Reel-to-reel type web winding and unwinding mechanisms}
- 18/16 . . . by friction roller
- 18/18 to effect step-by-step advancement of web {[\(not used\)](#)}
- 18/20 . . . the web roll being supported on two parallel rollers at least one of which is driven
- 18/22 . . . by friction band
- 18/24 to effect step-by-step advancement of web {[\(not used\)](#)}
- 18/26 . . Mechanisms for controlling contact pressure on winding-web package, e.g. for regulating the quantity of air between web layers
- 18/28 . Wound package of webs
- 19/00 Changing the web roll**
- 19/10 . in unwinding mechanisms or in connection with unwinding operations
- 19/102 . . {Preparing the leading end of the replacement web before splicing operation; Adhesive arrangements on leading end of replacement web; Tabs and adhesive tapes for splicing}
- 19/105 . . {Opening of web rolls; Removing damaged outer layers; Detecting the leading end of a closed web roll}
- 19/107 . . {Processing the trailing end of the replaced web after splicing operation, e.g. rewinding it}
- 19/12 . . Lifting, transporting, or inserting the web roll; Removing empty core
- 19/123 . . . {with cantilever supporting arrangements}
- 19/126 . . . {with both-ends supporting arrangements}
- 19/14 . . Accumulating surplus web for advancing to machine while changing the web roll
- 19/18 . . Attaching, e.g. pasting, the replacement web to the expiring web {(adhesive arrangements on leading end of replacement web, tabs and adhesive tapes for splicing [B65H 19/102](#))}

- 19/1805 . . . {Flying splicing, i.e. the expiring web moving during splicing contact}
- 19/181 {taking place on the replacement roll}
- 19/1815 {the replacement web being stationary prior to splicing contact}
- 19/1821 {the replacement web being accelerated or running prior to splicing contact}
- 19/1826 {taking place at a distance from the replacement roll}
- 19/1831 {the replacement web being stationary prior to splicing contact}
- 19/1836 {the replacement web being accelerated or running prior to splicing contact}
- 19/1842 . . . {standing splicing, i.e. the expiring web being stationary during splicing contact}
- 19/1847 {taking place on the replacement roll}
- 19/1852 {taking place at a distance from the replacement roll}
- 19/1857 . . . {Support arrangement of web rolls}
- 19/1863 {with translatory or arcuated movement of the roll supports}
- 19/1868 {The roll support being of the turret type}
- 19/1873 {with two stationary roll supports carrying alternately the replacement and the expiring roll}
- 19/1878 {with one stationary support for the rolls}
- 19/1884 . . . {Details for effecting a positive rotation of web roll, e.g. accelerating the replacement roll}
- 19/1889 {related to driving arrangements}
- 19/1894 {the replacement web being accelerated through contact with the expiring web}
- 19/20 . . Cutting-off the expiring web
- 19/22 . . in winding mechanisms or in connection with winding operations
- 19/2207 . . {the web roll being driven by a winding mechanism of the centre or core drive type}
- 19/2215 . . . {Turret-type with two roll supports}
- 19/2223 . . . {Turret-type with more than two roll supports}
- 19/223 . . . {with roll supports being independently displaceable along a common path}
- 19/2238 . . {The web roll being driven by a winding mechanism of the nip or tangential drive type (B65H 19/2276 takes precedence)}
- 19/2246 . . . {and the roll being supported on two rollers}
- 19/2253 . . . {and the roll being displaced during the winding operation}
- 19/2261 {Pope-roller}
- 19/2269 . . . {Cradle}
- 19/2276 . . {The web roll being driven by a winding mechanism of the coreless type}
- 19/2284 . . {Simultaneous winding at several stations, e.g. slitter-rewinders}
- 19/2292 . . {Removing cores or mandrels from web roll after winding}
- 19/24 . . Accumulating surplus delivered web while changing the web roll
- 19/26 . . Cutting-off the web running to the wound web roll
- 19/262 . . . {using a thin or filamentary material which is wound on the new roll}
- 19/265 . . . {using a cutting member moving linearly in a plane parallel to the surface of the web and along a direction crossing the web}
- 19/267 . . . {by tearing or bursting}
- 19/28 . . Attaching the leading end of the web to the replacement web-roll core or spindle (cores, formers, supports or holders, e.g. reels, with arrangements for securing ends of material B65H 75/28)
- 19/283 . . . {by applying adhesive to the core}
- 19/286 . . . {by applying adhesive to the web}
- 19/29 . . Securing the trailing end of the wound web to the web roll (cores, formers, supports or holders, e.g. reels, with arrangements for securing ends of material B65H 75/28)
- 19/30 . . Lifting, transporting, or removing the web roll; Inserting core
- 19/305 . . . {Inserting core}
- 20/00 Advancing webs**
- 20/005 . {Electrical drive motor control devices therefor}
- 20/02 . by friction roller
- 20/04 . . to effect step-by-step advancement of web
- 20/06 . by friction band
- 20/08 . . to effect step-by-step advancement of web
- 20/10 . by a feed band against which web is held by fluid pressure, e.g. suction or air blast
- 20/12 . by suction roller
- 20/14 . by direct action on web of moving fluid
- 20/16 . by web-gripping means, e.g. grippers, clips
- 20/18 . . to effect step-by-step advancement of web
- 20/20 . by web-penetrating means, e.g. pins
- 20/22 . . to effect step-by-step advancement of web
- 20/24 . by looping or like devices
- 20/26 . Mechanisms for advancing webs to or from the inside of web rolls
- 20/28 . Mechanisms for delivering webs in superposed folds and refeeding them from the lower end of the folded assemblies
- 20/30 . Arrangements for accumulating surplus web (while changing the web roll B65H 19/14, B65H 19/24)
- 20/32 . . by making loops
- 20/34 . . . with rollers
- 20/36 . having means to optionally advance the web either in one longitudinal direction or in the opposite longitudinal direction
- 20/38 . . by changing the direction of mechanism driving the web-roll spindle
- 20/40 . . by changing the direction of mechanism driving the pinch roller
- 21/00 Apparatus for splicing webs (during web-roll changing B65H 19/00)**
- 21/02 . for premarked, e.g. preprinted, webs
- 23/00 Registering, tensioning, smoothing or guiding webs (registering articles B65H 9/00; in connection with splicing B65H 21/00)**
- 23/005 . {Sensing web roll diameter (warning or safety devices responsive to a predetermined diameter B65H 26/08)}
- 23/02 . transversely (by tentering, gripper, or like apparatus operating on fabric webs D06C)
- 23/0204 . . {Sensing transverse register of web (and controlling it B65H 23/032)}
- 23/0208 . . . {with an element engaging the edge of the web}
- 23/0212 . . . {with an element utilising fluid flow}
- 23/0216 . . . {with an element utilising photoelectric effect}

23/022 . . . by tentering devices
 23/025 . . . by rollers
 23/0251 {with a straight axis}
 23/0253 {with axially movable elements}
 23/0255 {with axially stretchable elements}
 23/0256 {with opposed helicoidal windings}
 23/0258 {with a bowed axis}
 23/028 . . . by clips
 23/032 . . Controlling transverse register of web
 23/0322 . . . {by acting on edge regions of the web}
 23/0324 . . . {by acting on lateral regions of the web}
 23/0326 . . . {by moving the unwinding device}
 23/0328 . . . {by moving the winding device}
 23/035 . . . by guide bars
 23/038 . . . by rollers
 23/04 . . longitudinally
 23/042 . . {Sensing the length of a web loop (sensing web tension [B65H 23/044](#))}
 23/044 . . {Sensing web tension ([B65H 23/06](#), [B65H 23/18](#) take precedence)}
 23/046 . . {Sensing longitudinal register of web ([B65H 23/18](#) takes precedence)}
 23/048 . . {by positively actuated movable bars or rollers}
 23/06 . . by retarding devices, e.g. acting on web-roll spindle
 23/063 . . . {and controlling web tension}
 23/066 . . . {Electrical brake devices therefor ([B65H 23/063](#) takes precedence)}
 23/08 . . . acting on web roll being unwound
 23/085 {and controlling web tension}
 23/10 . . . acting on running web ([suction retarders B65H 23/24](#))
 23/105 {and controlling web tension}
 23/12 and causing parts thereof to move in opposite directions and in frictional engagement
 23/14 Tensioning rollers applying braking forces
 23/16 . . by weighted or spring-pressed movable bars or rollers
 23/18 . . by controlling or regulating the web-advancing mechanism, e.g. mechanism acting on the running web
 23/1806 . . . {in reel-to-reel type web winding and unwinding mechanism, e.g. mechanism acting on web-roll spindle}
 23/1813 {acting on web-roll}
 23/182 . . . in unwinding mechanisms or in connection with unwinding operations
 23/1825 {and controlling web tension}
 23/185 motor-controlled
 23/188 . . . in connection with running-web
 23/1882 {and controlling longitudinal register of web}
 23/1884 {with step-by-step advancement}
 23/1886 {Synchronising two or more webs}
 23/1888 {and controlling web tension}
 23/192 motor-controlled
 23/195 . . . in winding mechanisms or in connection with winding operations
 23/1955 {and controlling web tension}
 23/198 motor-controlled {(Controlling electrical drive motors therefor)}
 23/24 . . by fluid action, e.g. to retard the running web
 23/245 . . . {Suction retarders}

23/26 . . . by transverse stationary or adjustable bars or rollers
 23/28 . . . by longitudinally-extending strips, tubes, plates, or wires ([flexible tapes or bands B65H 23/30](#))
 23/30 . . . by longitudinally-extending flexible tapes or bands
 23/32 . . Arrangements for turning or reversing webs
 23/34 . . Apparatus for taking-out curl from webs
 26/00 **Warning or safety devices, e.g. automatic fault detectors, stop-motions, for web-advancing mechanisms (safety devices in general [F16P](#); investigating chemical or physical properties of materials in general [G01N](#); indicating devices in general [G08B](#))**
 26/02 . . responsive to presence of irregularities in running webs
 26/025 . . . {responsive to web breakage}
 26/04 . . . for variation in tension
 26/06 . . responsive to predetermined lengths of webs
 26/063 . . . {responsive to detection of the trailing edge}
 26/066 . . . {responsive to information, e.g. printed mark, on the web or web roll}
 26/08 . . responsive to a predetermined diameter
 27/00 **Special constructions of feed or guide rollers and surfaces thereof ({tentering rollers [B65H 23/02](#)}; rollers in general [F16C 13/00](#))**

Delivering articles from machines; Piling articles; Article or web delivery apparatus incorporating devices for performing specified auxiliary operations; Associating or gathering articles or webs; Machines for separating superposed webs

29/00 **Delivering or advancing articles from machines; Advancing articles to or into piles**
 29/001 . . {Adaptations of counting devices (to feeding of articles to machines [B65H 5/002](#))}
 29/003 . . {by grippers ([B65H 29/02](#) takes precedence)}
 29/005 . . . {by chains or bands having mechanical grippers engaging the side edges of articles, e.g. newspaper conveyors}
 29/006 . . {Winding articles into rolls}
 29/008 . . . {Winding single articles into single rolls}
 29/02 . . by mechanical grippers engaging the leading edge only of the articles
 29/04 . . . the grippers being carried by endless chains or bands
 29/041 {and introducing into a pile ([slowing-down from grippers B65H 29/683](#))}
 29/042 {Intermediate conveyors, e.g. transferring devices}
 29/044 {conveying through a machine}
 29/045 {Details of grippers}
 29/047 {Gripper opening devices}
 29/048 {Self-opening and -closing grippers}
 29/06 . . . the grippers being carried by rotating members
 29/08 . . . the grippers being oscillated in arcuate paths
 29/10 . . . the grippers being reciprocated in rectilinear paths
 29/12 . . by means of the nip between two, or between two sets of, moving tapes or bands {or rollers}
 29/125 . . . {between two sets of rollers}
 29/14 . . . and introducing into a pile

- 29/145 . . . {the pile being formed between the two, or between the two sets of, tapes or bands or rollers}
- 29/16 . by contact of one face only with moving tapes, bands, or chains {(with suction belts [B65H 29/242](#))}
- 29/18 . . and introducing into a pile
- 29/20 . by contact with rotating friction members, e.g. rollers, brushes, or cylinders {(with suction rollers [B65H 29/243](#))}
- 29/22 . . and introducing into a pile
- 29/24 . by air blast or suction apparatus {([B65H 5/22](#) takes precedence;) dropping articles from suction carriers [B65H 29/32](#) (; pneumatic brakes [B65H 29/686](#))}
- 29/241 . . {Suction devices}
- 29/242 . . . {Suction bands or belts}
- 29/243 . . . {Suction rollers}
- 29/245 . . {Air blast devices}
- 29/246 . . . {acting on stacking devices}
- 29/247 {blowing on upperside of the sheet}
- 29/248 . . . {with coanda effect (separating from a stack [B65H 3/14](#))}
- 29/26 . by dropping {the articles}
- 29/28 . . from mechanical grippers (grippers engaging the leading edge only [B65H 29/02](#))
- 29/30 . . from magnetic holders
- 29/32 . . from pneumatic, e.g. suction, carriers
- 29/34 . . from supports slid from under the articles
- 29/36 . . from tapes, bands, or rollers rolled from under the articles
- 29/38 . by movable piling or advancing arms, frames, plates, or like members with which the articles are maintained in face contact
- 29/40 . . Members rotated about an axis perpendicular to direction of article movement, e.g. star-wheels formed by S-shaped members
- 29/42 . . Members rotated about an axis parallel to direction of article movement, e.g. helices
- 29/44 . . Members oscillated in arcuate paths
- 29/46 . . Members reciprocated in rectilinear path
- 29/48 . by tables arranged to be tilted to cause sliding of articles
- 29/50 . Piling apparatus of which the discharge point moves in accordance with the height to the pile
- 29/51 . . piling by collecting on the periphery of cylinders
- 29/52 . Stationary guides or smoothers
- 29/54 . Article strippers, e.g. for stripping from advancing elements
- 29/56 . . for stripping from elements or machines {(for electrographic machines [G03G](#))}
- 29/58 . Article switches or diverters
- 29/585 . . {taking samples from the main stream}
- 29/60 . . diverting the stream into alternative paths ([B65H 29/62](#) takes precedence)
- 29/62 . . diverting faulty articles from the main streams (control devices detecting faulty articles [B65H 43/04](#))
- 29/64 . . directing the components of composite articles into separate paths
- 29/66 . Advancing articles in overlapping streams
- 29/6609 . . {forming an overlapping stream (by separation of articles from a pile [B65H 5/24](#))}
- 29/6618 . . . {upon transfer from a first conveyor to a second conveyor advancing at slower speed}
- 29/6627 {in combination with auxiliary means for overlapping articles}
- 29/6636 {in combination with auxiliary means for underlapping articles}
- 29/6645 . . {buffering an overlapping stream of articles (winding articles into rolls [B65H 29/006](#))}
- 29/6654 . . {changing the overlapping figure}
- 29/6663 . . . {reversing the overlapping figure (round stack feeder [B65H 1/225](#))}
- 29/6672 . . {dividing an overlapping stream into two or more streams; (articles switches or diverters [B65H 29/58](#))}
- 29/6681 . . {merging two or more streams into an overlapping stream}
- 29/669 . . {ending an overlapping stream}
- 29/68 . Reducing the speed of articles as they advance
- 29/683 . . {Slowing-down from chain delivery ([B65H 29/686](#) takes precedence)}
- 29/686 . . {Pneumatic brakes}
- 29/70 . Article bending or stiffening arrangements
- 31/00 Pile receivers (carriers used for associating, collating or gathering articles [B65H 39/00](#))**
- 31/02 . with stationary end support against which pile accumulates
- 31/04 . with movable end support arranged to recede as pile accumulates
- 31/06 . . the articles being piled on edge
- 31/08 . . the articles being piled one above another
- 31/10 . . . and applied at the top of the pile
- 31/12 . . Devices relieving the weight of the pile or permitting or effecting movement of the pile end support during piling
- 31/14 . . . Springs (fluid springs [B65H 31/16](#))
- 31/16 . . . Fluid-pressure devices
- 31/18 . . . Positively-acting mechanical devices
- 31/20 . adjustable for different article sizes
- 31/22 . removable or interchangeable
- 31/24 . multiple or compartmented, e.d. for alternate, programmed, or selective filling
- 31/26 . Auxiliary devices for retaining articles in the pile
- 31/28 . Bands, chains, or like moving receivers (for articles piled on edge [B65H 31/06](#))
- 31/30 . Arrangements for removing completed piles (bands, chains, or like moving receivers [B65H 31/28](#))
- 31/3009 . . {by dropping, e.g. removing the pile support from under the pile}
- 31/3018 . . . {from opposite part-support elements, e.g. operated simultaneously}
- 31/3027 . . {by the nip between moving belts or rollers (pile being formed between belts or rollers [B65H 29/145](#))}
- 31/3036 . . {by gripping the pile}
- 31/3045 . . . {on the outermost articles of the pile for clamping the pile}
- 31/3054 . . {by moving the surface supporting the lowermost article of the pile, e.g. by using belts or rollers}
- 31/3063 . . . {by special supports like carriages, containers, trays, compartments, plates or bars, e.g. moved in a closed loop}
- 31/3072 . . {by moving a surface supporting the pile of articles on edge, e.g. by using belts or carriages}
- 31/3081 . . {by acting on edge of the pile for moving it along a surface, e.g. by pushing}

- 31/309 . . {by acting on one of the outermost articles for moving the pile of articles on edge along a surface, e.g. by pushing}
- 31/32 . Auxiliary devices for receiving articles during removal of a completed pile
- 31/34 . Apparatus for squaring-up piled articles
- 31/36 . . Auxiliary devices for contacting each article with a front stop as it is piled
- 31/38 . . Apparatus for vibrating or knocking the pile during piling
- 31/40 . . Separate receivers, troughs, and like apparatus for knocking-up completed piles
- 33/00 Forming counted batches in delivery pile or stream of articles**
- 33/02 . by moving a blade or like member into the pile
- 33/04 . by inserting marker slips in pile or stream
- 33/06 . by displacing articles to define batches
- 33/08 . . Displacing whole batches, e.g. forming stepped piles
- 33/10 . . Displacing the end articles of a batch
- 33/12 . by creating gaps in the stream
- 33/14 . by diverting batches to separate receivers {[\(B65H 33/16 takes precedence; article switches or diverters B65H 29/58\)](#)}
- 33/16 . by depositing articles in batches on moving supports
- 33/18 . . with separators between adjacent batches
- 35/00 Delivering articles from cutting or line-perforating machines; Article or web delivery apparatus incorporating cutting or line-perforating devices, e.g. of the kinds specified below (cutting or perforating machines or devices in general [B26D](#), [B26F](#))**
- 35/0006 . {Article or web delivery apparatus incorporating cutting or line-perforating devices}
- 35/0013 . . {and applying the article or the web by adhesive to a surface [\(B65H 35/002 takes precedence\)](#)}
- 35/002 . . {Hand-held or table apparatus [\(B65H 35/006 takes precedence\)](#)}
- 35/0026 . . . {for delivering pressure-sensitive adhesive tape}
- 35/0033 {and affixing it to a surface [\(B65H 35/004 takes precedence\)](#)}
- 35/004 {simultaneously with a second roll, e.g. masking tape}
- 35/0046 . . . {with means for moistening or coating the articles or webs, or applying adhesive thereto}
- 35/0053 {and affixing it to a surface}
- 35/006 . . {with means for delivering a predetermined length of tape}
- 35/0066 . . . {this length being adjustable}
- 35/0073 . . {Details}
- 35/008 . . . {Arrangements or adaptations of cutting devices}
- 35/0086 {using movable cutting elements}
- 35/0093 . . . {Arrangements or adaptations of length measuring devices}
- 35/02 . from or with longitudinal slitters or perforators
- 35/04 . from or with transverse cutters or perforators
- 35/06 . . from or with blade, e.g. shear-blade, cutters or perforators [\(from or with revolving blade B65H 35/08\)](#)
- 35/08 . . from or with revolving, e.g. cylinder, cutters or perforators

- 35/10 . from or with devices for breaking partially-cut or perforated webs, e.g. bursters
- 37/00 Article or web delivery apparatus incorporating devices for performing specified auxiliary operations (incorporating cutting or line-perforating devices [B65H 35/00](#))**
- 37/002 . {Web delivery apparatus, the web serving as support for articles, material or another web}
- 37/005 . . {Hand-held apparatus}
- 37/007 . . . {Applicators for applying coatings, e.g. correction, colour or adhesive coatings}
- 37/02 . for applying adhesive [\(and securing together B65H 37/04\)](#)
- 37/04 . for securing together articles or webs, e.g. by adhesive, stitching or stapling [\(adhering replacement to expiring web during change of web roll B65H 19/18\)](#)
- 37/06 . for folding
- 39/00 Associating, collating or gathering articles or webs (machines for both collating or gathering and permanently attaching together sheets or signatures [B42C 1/00](#))**
- 39/02 . Associating, collating or gathering articles from several sources
- 39/04 . . from piles
- 39/041 . . . the piles being disposed in rotary carriers
- 39/042 . . . the piles being disposed in superposed carriers
- 39/043 . . . the piles being disposed in juxtaposed carriers
- 39/045 . . . by collecting in rotary carriers
- 39/05 . . . by collecting in superposed carriers
- 39/055 . . . by collecting in juxtaposed carriers
- 39/06 . . from delivery streams
- 39/065 . . . by collecting in rotary carriers
- 39/07 . . . by collecting in superposed carriers
- 39/075 . . . by collecting in juxtaposed carriers
- 39/10 . Associating articles from a single source, to form, e.g. a writing-pad {[\(laminating B32B 37/00, B32B 38/00\)](#)}
- 39/105 . . in rotary carriers
- 39/11 . . in superposed carriers
- 39/115 . . in juxtaposed carriers
- 39/14 . Associating sheets with webs
- 39/16 . Associating two or more webs
- 41/00 Machines for separating superposed webs**
- 43/00 Use of control, checking, or safety devices, e.g. automatic devices comprising an element for sensing a variable**
- 43/02 . detecting, or responding to, absence of articles [\(B65H 43/08 takes precedence\)](#)
- 43/04 . detecting, or responding to, presence of faulty articles [\(B65H 43/08 takes precedence; diverting faulty articles from main streams B65H 29/62\)](#)
- 43/06 . detecting, or responding to, completion of pile [\(B65H 43/08 takes precedence\)](#)
- 43/08 . Photoelectric devices

Folding or unfolding thin material

- 45/00 Folding thin material (specially adapted for the manufacture or treatment of particular products, [see appropriate subclasses, e.g. D06F 89/00](#))**

- 45/02 . . Folding limp material { (shaping of plastics or by bending or folding [B29C 53/00](#); folding sheets, blanks or webs for box, carton, envelope or bag making [B31B 50/26](#), [B31B 70/26](#); shaping of paper or cardboard by bending or folding [B31F 1/0003](#);) } without application of pressure to define or form crease lines (winding or unwinding fabrics for feeding to or from machines [B65H 16/00](#) - [B65H 27/00](#); folding garments for packaging purposes [B65B](#); folding fabrics in sewing machines [D05B](#))
- 45/04 . . . Folding sheets
- 45/06 . . . Folding webs ([B65H 20/28](#) takes precedence)
- 45/08 longitudinally
- 45/09 Doubling, i.e. folding into half of width
- 45/10 transversely
- 45/101 in combination with laying, i.e. forming a zig-zag pile
- 45/1015 {Folding webs provided with predefined fold lines; Refolding prefolded webs, e.g. fanfolded continuous forms}
- 45/103 by a carriage which reciprocates above the laying station
- 45/105 coating with fold holders
- 45/107 by means of swinging or reciprocating guide bars
- 45/109 Registering or counting the folds; Detecting irregularities in the zig-zag pile
- 45/12 . . Folding articles or webs with application of pressure to define or form crease lines ([B65H 20/28](#) takes precedence; pleating, kilting or goffering textile fabrics [D06J](#))
- 45/14 . . Buckling folders
- 45/141 . . . {with noise reducing means}
- 45/142 . . . {Pocket-type folders}
- 45/144 {Pockets or stops therefor}
- 45/145 {circular pockets}
- 45/147 {folding rollers therefor}
- 45/148 {diverters therefor}
- 45/16 . . Rotary folders
- 45/161 . . . {Flying tuck folders}
- 45/162 . . . {with folding jaw cylinders}
- 45/163 {Details of folding jaws therefor}
- 45/164 {Details of folding blades therefor}
- 45/165 {Details of sheet gripping means therefor}
- 45/166 {having an adjustable circumference}
- 45/167 {having associated sheet guide means}
- 45/168 {having changeable mode of operation}
- 45/18 . . Oscillating or reciprocating blade folders ([carried on rotary members B65H 45/16](#))
- 45/20 . . Zig-zag folders { ([B65H 45/228](#) takes precedence) }
- 45/22 . . Longitudinal folders, i.e. for folding moving sheet material parallel to the direction of movement
- 45/221 . . . {incorporating folding triangles}
- 45/223 {Details of folding triangles}
- 45/225 {Arrangements of folding triangles}
- 45/226 {Positional adjustment of folding triangles}
- 45/228 . . . {Zig-zag folders}
- 45/24 . . Interfolding sheets, e.g. cigarette or toilet papers
- 45/26 . . Folding in combination with unpiling ([unpiling B65H 3/00](#))
- 45/28 . . . Folding in combination with cutting ([cutting machines B26D](#))
- 45/30 . . . Folding in combination with creasing, smoothing or application of adhesive ([folding or adhesive application in article or web delivering B65H 37/00](#))
- 47/00 Unfolding thin limp material** ([B65H 20/28](#) takes precedence; opening devices for sheets or signatures [B65H 5/30](#))
- Unwinding, paying-out, forwarding, winding, coiling, or depositing, filamentary material** (devices specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material [B65H 75/34](#); working and processing wire [B21F](#), [B21G](#); unwinding, paying-out, forwarding, or winding ropes or cables in load-moving apparatus [B61B](#); [B65G](#); [B66](#); creels, warping, beaming, or leasing machines or methods for textile manufacturing purposes [D02H](#))
- 49/00 Unwinding or paying-out filamentary material; Supporting, storing or transporting packages from which filamentary material is to be withdrawn or paid-out** ([winding B65H 54/00](#); bobbins, tubes or other cores for packages [B65H 75/00](#))
- 49/02 . . Methods or apparatus in which packages do not rotate
- 49/04 . . . Package-supporting devices
- 49/06 for a single operative package
- 49/08 enclosing the package
- 49/10 for one operative package and one or more reserve packages
- 49/12 the reserve packages being mounted to permit manual or automatic transfer to operating position
- 49/14 for several operative packages
- 49/16 Stands or frameworks
- 49/18 . . Methods or apparatus in which packages rotate ([flyers or other guides assisting paying-out B65H 57/00](#); supports or holders, for storing and repeatedly paying-out and rewinding lengths of material provided for particular purposes [B65H 75/34](#))
- 49/20 . . . Package-supporting devices
- 49/205 {Hand-held or portable dispensers}
- 49/22 . . . Overhead suspension devices
- 49/24 . . . Rollers
- 49/26 . . . Axial shafts or spigots
- 49/28 . . . Turntables {, i.e. package resting on a table ([having also means for clamping the package B65H 49/30](#)) }
- 49/30 . . . Swifts or skein holders
- 49/305 {with axially adjustable or removable elements for retaining the package}
- 49/32 . . . Stands or frameworks
- 49/321 {characterised by features enabling their folding or dismantling}
- 49/322 {Enclosing boxes with supporting means for the package or reel during unwinding}
- 49/324 {Constructional details}
- 49/325 {Arrangements or adaptations for supporting the shafts, e.g. saddle type shaft bearings}
- 49/327 {Arrangements or adaptations for attachment to a wall, a post or the like}

- 49/328 {Arrangements or adaptations for stacking}
- 49/34 . . Arrangements for effecting positive rotation of packages
- 49/36 . . Securing packages to supporting devices (arrangements for applying packages to, or removing from, supports [B65H 65/00](#), [B65H 67/00](#))
- 49/38 . . Skips, cages, racks, or containers, adapted solely for the transport or storage of bobbins, cops, or the like
- 51/00 Forwarding filamentary material (stretch-spinning methods [D01D 5/12](#); drawing or drafting rovings or the like [D01H 5/00](#))**
- 51/005 . . Separating a bundle of forwarding filamentary materials into a plurality of groups
- 51/01 . . by means of static electricity
- 51/015 . . Gathering a plurality of forwarding filamentary materials into a bundle
- 51/02 . . Rotary devices, e.g. with helical forwarding surfaces (devices for temporarily storing filamentary material during forwarding [B65H 51/20](#); driven rotary devices for controlling tension [B65H 59/18](#))
- 51/04 . . Rollers, pulleys, capstans, or intermeshing rotary elements
- 51/06 . . . arranged to operate singly
- 51/08 . . . arranged to operate in groups or in co-operation with other elements
- 51/10 with opposed coacting surfaces, e.g. providing nips
- 51/105 {one of which is an endless belt}
- 51/12 in spaced relation to provide a series of independent forwarding surfaces around which material is passed or wound
- 51/14 . . Aprons, endless belts, lattices, or like driven elements
- 51/16 . . Devices for entraining material by flow of liquids or gases, e.g. air-blast devices (blowing slag wool in molten state [C03B 37/06](#))
- 51/18 . . Gripping devices with linear motion
- 51/20 . . Devices for temporarily storing filamentary material during forwarding, e.g. for buffer storage
- 51/205 . . {by means of a fluid}
- 51/22 . . Reels or cages, e.g. cylindrical, with storing and forwarding surfaces provided by rollers or bars {(measuring and temporally storing the weft in looms [D03D 47/36](#); thread feeding devices for weft knitting machines [D04B 15/48](#))}
- 51/24 . . . with interdigitating bars
- 51/26 . . Rollers or bars mounted askew to facilitate movement of filamentary material along them, e.g. pairs of canted rollers
- 51/28 . . Arrangements for initiating a forwarding operation
- 51/30 . . Devices controlling the forwarding speed to synchronise with supply, treatment, or take-up apparatus ([B65H 59/10](#), [B65H 59/38](#) take precedence)
- 51/32 . . Supporting or driving arrangements for forwarding devices
- 54/00 Winding, coiling, or depositing filamentary material (cores, formers, holders, cans or receptacles [B65H 75/02](#))**
- 54/02 . . Winding and traversing material on to reels, bobbins, tubes, or like package cores or formers
- 54/023 . . {Hank to spool winders}
- 54/026 . . {Doubling winders, i.e. for winding two or more parallel yarns on a bobbin, e.g. in preparation for twisting or weaving}
- 54/04 . . for making packages with closely-wound convolutions
- 54/06 . . for making cross-wound packages
- 54/08 . . . Precision winding arrangements
- 54/10 . . for making packages of specified shapes or on specified types of bobbins, tubes, cores, or formers
- 54/103 . . . {forming frusto-conical packages or forming packages on frusto-conical bobbins, tubes, cores or formers}
- 54/106 . . . {Manual or other small, compact or portable winding devices for forming packages for different purposes}
- 54/12 . . . on flanged bobbins or spools ([B65H 54/20](#) takes precedence)
- 54/14 . . . on tubes, cores, or formers having generally parallel sides, e.g. cops or packages to be loaded into loom shuttles
- 54/16 . . . forming bottle bobbin packages
- 54/18 . . . forming spools to be loaded into sewing, lace, embroidery, or like machines
- 54/20 . . . forming multiple packages
- 54/205 {the winding material being continuously transferred from one bobbin to the adjacent one}
- 54/22 . . Automatic winding machines, i.e. machines with servicing units for automatically performing end-finding, interconnecting of successive lengths of material, controlling and fault-detecting of the running material and replacing or removing of full or empty cores
- 54/24 . . . having a plurality of winding units moving along an endless path past one or more fixed servicing units
- 54/26 . . . having one or more servicing units moving along a plurality of fixed winding units
- 54/28 . . Traversing devices; Package-shaping arrangements (arrangements for preventing ribbon winding [B65H 54/38](#); grooved, slotted, or split drums for driving of packages [B65H 54/46](#))
- 54/2803 . . . {with a transversely moving package}
- 54/2806 . . . {Traversing devices driven by cam}
- 54/2809 {rotating grooved cam (driving split drums [B65H 54/50](#))}
- 54/2812 {with a traversing guide running in the groove}
- 54/2815 {heart-shaped cam}
- 54/2818 . . . {Traversing devices driven by rod}
- 54/2821 . . . {Traversing devices driven by belts or chains ([B65H 54/2836](#) takes precedence)}
- 54/2824 {with at least two traversing guides travelling in opposite directions}
- 54/2827 . . . {Traversing devices with a pivotally mounted guide arm}
- 54/283 . . . {Traversing devices driven by pneumatic or hydraulic means}
- 54/2833 . . . {Traversing devices driven by electromagnetic means}
- 54/2836 . . . {with a rotating guide for traversing the yarn}
- 54/2839 {counter rotating guides, e.g. wings}
- 54/2842 {grooved, slotted, or split drums}

- 54/2845 { "screw" type Owens Fiberglas }
- 54/2848 . . . { Arrangements for aligned winding (reels with grooves or grooved elements for aligned winding [B65H 75/265](#)) }
- 54/2851 { by pressing the material being wound against the drum, flange or already wound material, e.g. by fingers or rollers; guides moved by the already wound material ([B65H 54/2869](#) takes precedence) }
- 54/2854 { Detection or control of aligned winding or reversal }
- 54/2857 { Reversal control }
- 54/286 { by detection that the material has reached the flange or the reel end }
- 54/2863 { the flange acting on the material, e.g. provoking wire climbing or incident angle changing }
- 54/2866 { by detection of position, or distance made of the traverser }
- 54/2869 { Control of the rotating speed of the reel or the traversing speed for aligned winding }
- 54/2872 { by detection of the incidence angle }
- 54/2875 { by detecting or following the already wound material, e.g. contour following }
- 54/2878 { by detection of incorrect conditions on the wound surface, e.g. material climbing on the next layer, a gap between windings }
- 54/2881 . . . { Traversing devices with a plurality of guides for winding on a plurality of bobbins ([forming multiple packages B65H 54/20](#)) }
- 54/2884 . . . { Microprocessor-controlled traversing devices in so far the control is not special to one of the traversing devices of groups [B65H 54/2803](#) - [B65H 54/325](#) or group [B65H 54/38](#) }
- 54/2887 { detecting the position of the yarn guide }
- 54/289 { stopping the yarn guide in a predetermined position }
- 54/2893 . . . { Superposed traversing, i.e. traversing or other movement superposed on a traversing movement }
- 54/2896 . . . { Flyers }
- 54/30 . . . with thread guides reciprocating or oscillating with fixed stroke { ([B65H 54/2803](#) - [B65H 54/2896](#) take precedence) }
- 54/32 . . . with thread guides reciprocating or oscillating with variable stroke
- 54/325 { in accordance with growth of the package }
- 54/34 . . . for laying subsidiary winding, e.g. transfer tails
- 54/343 { when starting winding on an empty bobbin }
- 54/346 { on or outwardly of the fully wound yarn package }
- 54/36 . . . Yarn-guide advancing or raising mechanisms, e.g. cop-building arrangements
- 54/365 { for cops of pirn winding machine ([B65H 54/14](#) takes precedence) }
- 54/38 . . Arrangements for preventing ribbon winding {; Arrangements for preventing irregular edge forming, e.g. edge raising or yarn falling from the edge }
- 54/381 . . . { Preventing ribbon winding in a precision winding apparatus, i.e. with a constant ratio between the rotational speed of the bobbin spindle and the rotational speed of the traversing device driving shaft }
- 54/383 { in a stepped precision winding apparatus, i.e. with a constant wind ratio in each step }
- 54/385 . . . { Preventing edge raising, e.g. creeping arrangements }
- 54/386 { with energy storing means for recovering the kinetic energy at the end of the traversing stroke }
- 54/388 . . . { Preventing the yarn from falling off the edge of the package }
- 54/40 . . Arrangements for rotating packages
- 54/42 . . . in which the package, core, or former is rotated by frictional contact of its periphery with a driving surface
- 54/44 . . . in which the package, core, or former is engaged with, or secured to, a driven member rotatable about the axis of the package
- 54/46 . . . Package drive drums
- 54/48 Grooved drums
- 54/485 { with an auxiliary guide }
- 54/50 Slotted or split drums
- 54/52 . . . Drive contact pressure control, e.g. pressing arrangements
- 54/54 . . . Arrangements for supporting cores or formers at winding stations; Securing cores or formers to driving members
- 54/543 { Securing cores or holders to supporting or driving members, e.g. collapsible mandrels }
- 54/547 Cantilever supporting arrangements
- 54/553 Both-ends supporting arrangements
- 54/56 . . Winding of hanks or skeins
- 54/58 . . Swifts or reels adapted solely for the formation of hanks or skeins ([B65H 49/30](#) takes precedence)
- 54/585 . . . { Reels for rolling tape-like material, e.g. flat hose or strap, into flat spiral form; Means for retaining the roll after removal of the reel }
- 54/60 . . Devices for domestic use
- 54/62 . . Binding of skeins
- 54/64 . . Winding of balls; { ([forming hollow objects by winding on to fusible or soluble cores, e.g. forming pressure vessels B29C 53/56](#)) }
- 54/66 . . Winding yarns into balls
- 54/68 . . Winding on to cards or other flat cores, e.g. of star form
- 54/70 . . Other constructional features of yarn-winding machines
- 54/702 . . { Arrangements for confining or removing dust (for spinning [D01H 11/00](#); cleaning in general [B08B](#)) }
- 54/705 . . { Arrangements for reducing hairyness of the filamentary material }
- 54/707 . . { Suction generating system }
- 54/71 . . Arrangements for severing filamentary materials
- 54/72 . . Framework; Casings; Coverings
- 54/74 . . Driving arrangements ([arrangements for preventing ribbon winding B65H 54/38](#); [arrangements for rotating packages B65H 54/40](#))
- 54/76 . . Depositing materials in cans or receptacles
- 54/78 . . Apparatus in which the depositing device or the receptacle is reciprocated

- 54/80 . . Apparatus in which the depositing device or the receptacle is rotated
- 54/82 . . . and in which coils are formed before deposition
- 54/84 . . Arrangements for compacting materials in receptacles
- 54/86 . Arrangements for taking-up waste material before or after winding or depositing
- 54/88 . . by means of pneumatic arrangements, e.g. suction guns
- 55/00 Wound packages of filamentary material**
- 55/005 . {with two or more filaments wound in parallel on the bobbin}
- 55/02 . Self-supporting packages
- 55/04 . characterised by method of winding
- 55/043 . . {the yarn paying off through the centre of the package}
- 55/046 . . {packages having a radial opening through which the material will pay off}
- 57/00 Guides for filamentary materials; Supports therefor**
- 57/003 . {Arrangements for threading or unthreading the guide}
- 57/006 . {Traversing guides}
- 57/02 . Stationary rods or plates
- 57/04 . Guiding surfaces within slots or grooves
- 57/06 . Annular guiding surfaces; Eyes, e.g. pigtails
- 57/08 . . formed of wire or the like
- 57/10 . . with flared apertures
- 57/12 . Tubes
- 57/14 . Pulleys, rollers, or rotary bars
- 57/16 . formed to maintain a plurality of filaments in spaced relation
- 57/18 . mounted to facilitate unwinding of material from packages
- 57/20 . . Flyers (for inserting twist [D01H](#))
- 57/22 . adapted to prevent excessive ballooning of material
- 57/24 . with wear-resistant surfaces
- 57/26 . Supports for guides
- 57/28 . Reciprocating or oscillating guides (traversing devices for winding, coiling, or depositing filamentary material [B65H 54/28](#))
- 59/00 Adjusting or controlling tension in filamentary material, e.g. for preventing snarling; Applications of tension indicators**
- 59/005 . {Means compensating the yarn tension in relation with its moving due to traversing arrangements}
- 59/02 . by regulating delivery of material from supply package (by contact of package with support [B65H 49/02](#); by controlling speed of driving mechanism of unwinding or paying-out devices [B65H 59/38](#))
- 59/04 . . by devices acting on package or support
- 59/043 . . . {with a braking force varying proportionally to the diameter or the weight of the package being unwound}
- 59/046 {varying proportionally to the weight only}
- 59/06 . . by devices acting on material leaving the package
- 59/08 . by contact of running length of material with supply package
- 59/10 . by devices acting on running material and not associated with supply or take-up devices (by controlling speed of driving mechanism of material-forwarding devices [B65H 59/38](#))
- 59/105 . . {the material being subjected to the action of a fluid}
- 59/12 . . Stationary elements arranged to deflect material from straight path
- 59/14 . . . and provided with surfaces imposing additional retarding forces on material
- 59/16 . . Braked elements rotated by material
- 59/18 . . Driven rotary elements (material-forwarding devices [B65H 51/00](#))
- 59/20 . . Co-operating surfaces mounted for relative movement
- 59/22 . . . and arranged to apply pressure to material
- 59/225 {Tension discs}
- 59/24 Surfaces movable automatically to compensate for variation in tension
- 59/26 . . . and arranged to deflect material from straight path
- 59/28 the surfaces being urged towards each other
- 59/30 Surfaces movable automatically to compensate for variation in tension
- 59/32 the surfaces being urged away from each other
- 59/34 Surfaces movable automatically to compensate for variation in tension
- 59/36 . . Floating elements compensating for irregularities in supply or take-up of material (buffer storage devices [B65H 51/20](#))
- 59/38 . by regulating speed of driving mechanism of unwinding, paying-out, forwarding, winding, or depositing devices, e.g. automatically in response to variations in tension
- 59/381 . . {using pneumatic or hydraulic means}
- 59/382 . . {using mechanical means}
- 59/384 . . {using electronic means}
- 59/385 . . . {Regulating winding speed}
- 59/387 . . . {Regulating unwinding speed}
- 59/388 . . . {Regulating forwarding speed}
- 59/40 . Applications of tension indicators
- 61/00 Applications of devices for metering predetermined lengths of running material (of general application [G01B](#))**
- 61/005 . {for measuring speed of running yarns}
- 63/00 Warning or safety devices, e.g. automatic fault detectors, stop-motions (safety devices in general [F16P](#); indicating devices in general [G08B](#)) ; Quality control of the package}**
- 63/003 . {responsive to winding of yarns around rotating cylinders}
- 63/006 . {quality control of the package}
- 63/02 . responsive to reduction in material tension, failure of supply, or breakage, of material
- 63/024 . . responsive to breakage of materials
- 63/028 . . . characterised by the detecting or sensing element
- 63/032 electrical or pneumatic
- 63/0321 {using electronic actuators}
- 63/0322 {using capacitor sensing means, i.e. the defect signal is a variation of impedance}

- 63/0324 {using photo-electric sensing means, i.e. the defect signal is a variation of light energy}
- 63/0325 {using fluid sensing means, e.g. acoustic}
- 63/0327 {using piezo-electric sensing means}
- 63/0328 {using pneumatic sensing means}
- 63/036 . . . characterised by the combination of the detecting or sensing elements with other devices, e.g. stopping devices for material advancing or winding mechanism
- 63/0362 {by a plate separating the package from the driving drum}
- 63/0364 {by lifting or raising the package away from the driving roller}
- 63/0366 {Braking means for the raised or lifted package}
- 63/0368 {by clutching or de-clutching the package from its driving means (package secured to a rotary driven member)}
- 63/04 . . responsive to excessive tension or irregular operation of apparatus
- 63/06 . . responsive to presence of irregularities in running material, e.g. for severing the material at irregularities {Control of the correct working of the yarn cleaner}
- 63/061 . . {Mechanical slub catcher and detector}
- 63/062 . . {Electronic slub detector}
- 63/064 . . . {using capacitor sensing means, i.e. the defect signal is a variation of impedance}
- 63/065 . . . {using photo-electric sensing means, i.e. the defect signal is a variation of light energy}
- 63/067 . . . {using fluid sensing means, e.g. acoustic}
- 63/068 . . . {using piezo-electric sensing means}
- 63/08 . . responsive to delivery of a measured length of material, completion of winding of a package, or filling of a receptacle
- 63/082 . . {responsive to a predetermined size or diameter of the package}
- 63/084 . . {responsive to a predetermined weight of the package}
- 63/086 . . {responsive to completion of unwinding of a package}
- 63/088 . . {Clamping device (connected with slub-catcher [B65H 63/061](#))}
- 65/00** **Securing material to cores or formers**
(arrangements for securing ends of material to cores, formers, supports or holders, e.g. reels, [B65H 75/28](#))
- 65/005 . . {Securing end of yarn in the wound or completed package}
- 67/00** **Replacing or removing cores, receptacles, or completed packages at paying-out, winding, or depositing stations**
- 67/02 . . Arrangements for removing spent cores or receptacles and replacing by supply packages at paying-out stations ({for cans [D01H 9/008](#); arrangement of the service carriage [B65H 54/26](#); } supports for packages [B65H 49/04](#), [B65H 49/20](#))
- 67/04 . . Arrangements for removing completed take-up packages and {or} replacing by cores, formers, or empty receptacles at winding or depositing stations; Transferring material between adjacent full and empty take-up elements ({arrangement of the service carriage [B65H 54/26](#))}
- 67/0405 . . {Arrangements for removing completed take-up packages or for loading an empty core ([B65H 67/044](#) takes precedence)}
- 67/0411 . . . {for removing completed take-up packages}
- 67/0417 . . . {for loading an empty core}
- 67/0422 {for loading a starter winding, i.e. a spool core with a small length of yarn wound on it; preparing the starter winding}
- 67/0428 . . {for cans, boxes and other receptacles}
- 67/0434 . . . {Transferring material devices between full and empty cans}
- 67/044 . . Continuous winding apparatus for winding on two or more winding heads in succession
- 67/048 . . . having winding heads arranged on rotary capstan head
- 67/052 . . . having two or more winding heads arranged in parallel to each other
- 67/056 . . . having two or more winding heads arranged in series with each other
- 67/06 . . Supplying cores, receptacles, or packages to, or transporting from, winding or depositing stations {(between spinning and winding machines [D01H 9/18](#), e.g. transporting cans [D01H 9/185](#))}
- 67/061 . . {Orientating devices}
- 67/062 . . {Sorting devices for full/empty packages}
- 67/063 . . {Marking or identifying devices for packages}
- 67/064 . . {Supplying or transporting cross-wound packages, also combined with transporting the empty core}
- 67/065 . . . {Manipulators with gripping or holding means for transferring the packages from one station to another, e.g. from a conveyor to a creel trolley}
- 67/066 . . {Depositing full or empty bobbins into a container or stacking them}
- 67/067 . . {Removing full or empty bobbins from a container or a stack}
- 67/068 . . {Supplying or transporting empty cores}
- 67/069 . . {Removing or fixing bobbins or cores from or on the vertical peg of trays, pallets or the pegs of a belt}
- 67/08 . . Automatic end-finding and material-interconnecting arrangements (knot-tying devices [B65H 69/00](#))
- 67/081 . . {acting after interruption of the winding process, e.g. yarn breakage, yarn cut or package replacement}
- 67/083 . . . {handling the yarn-end of the new supply package}
- 67/085 . . . {end-finding at the take-up package, e.g. by suction and reverse package rotation}
- 67/086 . . {Preparing supply packages}
- 67/088 . . . {Prepositioning the yarn end into the interior of the supply package}
- 69/00** **Methods of, or devices for, interconnecting successive lengths of material; Knot-tying devices {;Control of the correct working of the interconnecting device}**
- 69/02 . . by means of adhesives

69/04	. by knotting	75/143	. . . . . {at least one end flange being shaped to cover the windings}
69/043	. . {the threads are moved in ducts having the form of the wanted knot}	75/145	. . . . . {Reinforcement or protection arrangements for the peripheral edge of the flanges}
69/046	. . . {by a fluid}	75/146	. . . . . {with at least one intermediate flange between the two end flanges}
69/06	. by splicing {(grommets made by splicing D07B 1/18 , auxiliary apparatus for splicing ropes or cables D07B 7/169)}	75/148	. . . . . {with at least one frustoconical end flange}
69/061	. . {using pneumatic means}	75/16	. . . Cans or receptacles, e.g. sliver cans
69/063	. . . {Preparation of the yarn ends}	75/18	. . Constructional details
69/065	. . . . {using mechanical means}	75/182	. . . {Identification means}
69/066	. . . {Wet splicing, i.e. adding liquid to the splicing room or to the yarn ends preparing rooms}	75/185	. . . {End caps, plugs or adapters}
69/068	. . {using a binding thread, e.g. sewing}	75/187	. . . . {Reinforcing end caps}
69/08	. by welding	75/20	. . . Skeleton construction, e.g. formed of wire {(perforated supports for textile materials to be treated D06B 23/042)}
69/085	. . {using ultrasonic means}	75/22	. . . collapsible; with removable parts
71/00	Moistening, sizing, oiling, waxing, colouring or drying filamentary material as additional measures during package formation (applying liquids or other fluent materials to surfaces in general B05)	75/24	. . . adjustable in configuration, e.g. expandable
71/002	. {Abrading, scraping (in general D02J 3/00)}	75/241	. . . . {axially adjustable reels or bobbins}
71/005	. {Oiling, waxing by applying solid wax cake during spooling}	75/242	. . . . {Expandable spindles, mandrels or chucks, e.g. for securing or releasing cores, holders or packages (expandable mandrels for machine tools B23B 31/00)}
71/007	. {Oiling, waxing by applying liquid during spooling}	75/243	. . . . . {comprising a fluid pressure actuated elastic member, e.g. a diaphragm or a pneumatic tube}
73/00	Stripping waste material from cores or formers, e.g. to permit their re-use	75/245	. . . . . {by deformation of an elastic or flexible material}
<u>Methods, apparatus, or devices of general interest or not otherwise provided for in connection with the handling of webs, tapes, or filamentary materials (unwinding, paying-out, forwarding or winding ropes or cables in load-moving apparatus B61B, B65G, B66)</u>		75/246	. . . . . {by relative rotation of the clamping elements and the supporting spindle or core}
75/00	Storing webs, tapes, or filamentary material, e.g. on reels (fishing reels A01K 89/00; storing means for record carriers, specially adapted for cooperation with the recording or reproducing apparatus G11B 23/02)	75/247	. . . . . {using rollers or rods moving relative to a wedge or cam surface}
75/005	. {Working on damaged packages, e.g. reshaping collapsed cores (working on cores, reels or the like to permit their reuse B65H 75/505)}	75/248	. . . . . {with clamping elements linked to the spindle}
75/02	. Cores, formers, supports, or holders for coiled, wound, or folded material, e.g. reels, spindles, bobbins, cop tubes, cans (packaging aspects B65D 85/67)	75/26	. . . Arrangements for preventing slipping of winding
75/025	. . {specially adapted for winding or storing webs with the confronting layers spaced from each other, e.g. frames for storing nap fabrics}	75/265	. . . . {Reels with grooves or grooved elements inhibiting aligned or orderly winding}
75/04	. . Kinds or types (B65H 75/18 takes precedence)	75/28	. . . Arrangements for positively securing ends of material
75/06	. . . Flat cores, e.g. cards	75/285	. . . . {Holding devices to prevent the wound material from unwinding}
75/08	. . . of circular or polygonal cross-section (cans or receptacles B65H 75/16)	75/30	. . . Arrangements to facilitate driving or braking
75/10	. . . . without flanges, e.g. cop tubes	75/305	. . . . {Arrangements to facilitate driving by a portable drill}
75/105	. . . . . {Pirns destined for use in shuttles, i.e. with a yarn receiving portion and a thicker base portion, this thicker portion being adapted to be engaged by a spindle in a spinning frame and also being adapted for fitting in a shuttle}	75/32	. . . Arrangements to facilitate severing of material
75/12	. . . . with a single end flange {(e.g. with a conical end flange)}; formed with one end of greater diameter than the barrel		
75/14	. . . . with two end flanges		
75/141	. . . . . {covers therefor}		

- 75/34 . . . specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material provided for particular purposes, e.g. anchored hoses, power cables ([retractors for storing flexible hoses as accessories of dental work stands A61G 15/18](#); vehicle safety belt retractors [B60R 22/34](#); hose-storing devices in apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or portable containers [B67D 7/40](#); clothes-line supports [D06F 53/00](#); spring drums for liftable blinds with horizontal lamellae [E06B 9/322](#); spring drums or tape drums for roll-type closures or roller blinds [E06B 9/56](#); hauling- or hoisting-chains with arrangements for holding electric cables, hoses or the like [F16G 13/16](#); devices for guiding pipes, cables or protective tubing, between relatively movable points, e.g. movable channels, [F16L 3/01](#); flexible rulers or tapes with scales [G01B 3/10](#); electrical features of stored material, [see the relevant subclasses, e.g. H02G](#))
- 75/36 . . . without essentially involving the use of a core or former internal to a stored package of material, e.g. with stored material housed within casing or container, or intermittently engaging a plurality of supports as in sinuous or serpentine fashion
- 75/362 . . . {with stored material housed within a casing or container ([B65H 75/368](#) takes precedence)}
- 75/364 . . . {the stored material being coiled}
- 75/366 . . . {with stored package of material loosely hanging on a support, e.g. a hose hanger}
- 75/368 . . . {with pulleys}
- 75/38 . . . involving the use of a core or former internal to, and supporting, a stored package of material
- 75/40 . . . mobile or transportable
- 75/403 . . . {Carriage with wheels}
- 75/406 . . . {hand-held during use ([B65H 75/48](#), [B65H 75/4473](#) take precedence)}
- 75/42 . . . attached to, or forming part of, mobile tools, machines or vehicles
- 75/425 . . . {attached to, or forming part of a vehicle, e.g. truck, trailer, vessel}
- 75/44 . . . Constructional details
- 75/4402 . . . {Guiding arrangements to control paying-out and re-storing of the material ([guides per se B65H 57/00](#))}
- 75/4405 . . . {Traversing devices; means for orderly arranging the material on the drum}
- 75/4407 . . . {positively driven, e.g. by a transmission between the drum and the traversing device}
- 75/441 . . . {with a handle on the guide for manual operation}
- 75/4413 . . . {with a transversely moving drum}
- 75/4415 . . . {Guiding ribs on the drum}
- 75/4418 . . . {Arrangements for stopping winding or unwinding; Arrangements for releasing the stop means}
- 75/4421 . . . {acting directly on the material}
- 75/4423 . . . {Manual stop or release button}
- 75/4426 . . . {Stopping at the end of winding or unwinding}
- 75/4428 . . . {acting on the reel or on a reel blocking mechanism}
- 75/4431 . . . {Manual stop or release button}
- 75/4434 . . . {actuated by pulling on or imparting an inclination to the material}
- 75/4436 . . . {Arrangements for yieldably braking the reel or the material for moderating speed of winding or unwinding}
- 75/4439 . . . {acting directly on the material}
- 75/4442 . . . {acting on the reel}
- 75/4444 . . . {with manually adjustable brake pads}
- 75/4447 . . . {centrifugally}
- 75/4449 . . . {Arrangements or adaptations to avoid movable contacts or rotary couplings, e.g. by the use of an expansion chamber for a length of the cord or hose}
- 75/4452 . . . {Simultaneous winding and unwinding of the material, e.g. winding or unwinding on a stationary drum while respectively unwinding or winding on a rotating drum using a planetary guiding roller}
- 75/4455 . . . {using a planetary assembly coaxially rotating around a central drum}
- 75/4457 . . . {Arrangements of the frame or housing}
- 75/446 . . . {for releasably or permanently attaching the frame to a wall, on a floor or on a post or the like}
- 75/4463 . . . {Swivelling attachment}
- 75/4465 . . . {Foldable or collapsible}
- 75/4468 . . . {Tubular frame}
- 75/4471 . . . {Housing enclosing the reel}
- 75/4473 . . . {without arrangements or adaptations for rotating the core or former ([cores or formers which are not specially adapted for repeatedly paying-out and re-storing lengths of material B65H 75/02](#))}
- 75/4476 . . . {with stored material wound around two spaced supports}
- 75/4478 . . . {relating to handling of fluids}
- 75/4481 . . . {Arrangements or adaptations for driving the reel or the material ([by a spring B65H 75/48](#))}
- 75/4484 . . . {Electronic arrangements or adaptations for controlling the winding or unwinding process, e.g. with sensors}
- 75/4486 . . . {Electric motors}
- 75/4489 . . . {Fluid motors}
- 75/4492 . . . {Manual drives}
- 75/4494 . . . {Arrangements or adaptations of the crank}
- 75/4497 . . . {driving by the wheels of the carriage or vehicle}
- 75/48 . . . Automatic restoring devices ([B65H 75/4418](#) takes precedence)}
- 75/483 . . . {Balance reel}
- 75/486 . . . {Arrangements or adaptations of the spring motor}
- 75/50 . . . Methods of making reels, bobbins, cop tubes, or the like by working an unspecified material, or several materials

75/505	. . {Working on cores, reels or the like to permit their reuse, e.g. correcting distortion, replacing parts of the core or reel}	2301/132	. . . single face or double face
79/00	Driving-gear for devices for forwarding, winding, unwinding, or depositing material, not otherwise provided for	2301/1321	. . . . Printed material
81/00	Methods, apparatus, or devices for covering or wrapping cores by winding webs, tapes, or filamentary material, not otherwise provided for (forming hollow objects by winding filamentary material on to fusible or soluble cores {B29C 53/56} ; wrapping for the purpose of packaging B65B 11/00; making wound articles of paper B31C)	2301/133	. . . Face-up or face-down handling mode
81/02	. Covering or wrapping annular or like cores forming a closed or substantially closed figure	2301/134	. . . Portrait or landscape printing
81/04	. . by feeding material obliquely to the axis of the core	2301/14	. . of batches of material of different characteristics
81/06	. Covering or wrapping elongated cores	2301/141	. . . of different format, e.g. A0 - A4
81/08	. . by feeding material obliquely to the axis of the core	2301/142	. . . of different thickness
83/00	Combinations of piling and depiling operations, e.g. performed simultaneously, of interest apart from the single operation of piling or depiling as such	2301/1421	. . . . Single sheet or set of sheets
83/02	. performed on the same pile or stack	2301/1422	. . . . Sheet or envelope
83/025	. . {onto and from the same side of the pile or stack}	2301/15	. . of sheets in pile or in shingled formation
85/00	Recirculating articles, i.e. feeding each article to, and delivering it from, the same machine work-station more than once	2301/151	. . . Selective shingled formation
99/00	Subject matter not provided for in other groups of this subclass	2301/1511	. . . . Selective shingled or non shingled formation
		2301/152	. . . of sheets piled horizontally or vertically
		2301/16	. . of discharge in bins, stacking, collating or gathering
		2301/161	. . . Mailing or sorting mode
		2301/162	. . . Normal or offset stacking mode
		2301/163	. . . Bound or non bound, e.g. stapled or non stapled stacking mode
		2301/1635	. . . selective stapling modes, e.g. corner or edge or central
		2301/164	. . . Folded or non folded stacking mode
		2301/165	. . . Normal or finished stacking mode
		2301/166	. . . Superposed or interfolded stacking mode
		2301/17	. . Selective folding mode
		2301/20	. Continuous handling processes
		2301/21	. . of batches of material of different characteristics
		2301/211	. . . of different format, e.g. A0 - A4
		2301/212	. . . of different thickness
		2301/22	. . of material of different characteristics
		2301/23	. . of multiple materials in parallel to each other
		2301/231	. . . Recto verso portions of a single material
		2301/30	. Orientation, displacement, position of the handled material
		2301/31	. . Features of transport path
		2301/311	. . . for transport path in plane of handled material, e.g. geometry
		2301/3111	. . . . circular
		2301/3112	. . . . S-shaped
		2301/31122	. . . . Omega-shaped
		2301/31124	. . . . U-shaped
		2301/3113	. . . . vertical
		2301/3114	. . . . oblique with respect to axis of handled material
		2301/3115	. . . . linear
		2301/312	. . . for transport path involving at least two planes of transport forming an angle between each other
		2301/3121	. . . . L-shaped
		2301/3122	. . . . U-shaped
		2301/3123	. . . . S-shaped
		2301/3124	. . . . Y-shaped
		2301/3125	. . . . T-shaped
		2301/314	. . . Closed loop
		2301/316	. . . of web roll
		2301/3162	. . . . involving only one plane containing the roll axis
		2301/31622	. . . . . rectilinear transport path
		2301/3164	. . . . involving at least two planes containing the roll axis
		2301/31642	. . . . . L-shaped
		2301/32	. . Orientation of handled material
2220/00	Function indicators		
2220/01	. indicating an entity as a function of which control, adjustment or change is performed, i.e. input		
2220/02	. indicating an entity which is controlled, adjusted or changed by a control process, i.e. output		
2220/03	. indicating an entity which is measured, estimated, evaluated, calculated or determined but which does not constitute an entity which is adjusted or changed by the control process <u>per se</u>		
2220/04	. for distinguishing adjusting from controlling, i.e. manual adjustments		
2220/08	. for distinguishing changing an entity in function of another entity purely by mechanical means, i.e. no electronics involved		
2220/09	. indicating that several of an entity are present		
2220/11	. indicating that the input or output entities exclusively relate to machine elements		
2301/00	Handling processes for sheets or webs		
2301/10	. Selective handling processes		
2301/11	. . of web or zig-zag web		
2301/12	. . of sheets or web		
2301/121	. . . for sheet handling processes, i.e. wherein the web is cut into sheets		
2301/122	. . . for web or sheet handling processes wherein the sheets are cut from the web		
2301/13	. . Relative to size or orientation of the material		
2301/131	. . . single width or double width		

2301/321	. . .	Standing on edge	2301/3621	. . . .	perpendicularly to a first direction in which the material is already in registered position
2301/322	. . .	Riding over one elongated or saddle-like member	2301/36212	. . . . .	centering, positioning material symmetrically relatively to said first direction
2301/3221	. . . .	on saddle-like member extending perpendicularly to the transport direction	2301/363	. . . .	of material in pile
2301/323	. . .	Hanging	2301/364	. . . .	of material in roll
2301/324	. . .	Inclined	2301/40	.	Type of handling process
2301/325	. . .	of roll of material	2301/41	. .	Winding, unwinding
2301/3251	. . . .	vertical axis	2301/412	. . .	Roll
2301/3253	. . . .	inclined axis	2301/4124	. . . .	Outer end attachment
2301/33	. .	Modifying, selecting, changing orientation	2301/41242	. . . . .	Tab arrangement
2301/331	. . .	Skewing, correcting skew, i.e. changing slightly orientation of material	2301/41244	. . . . .	glued between outmost layer and tail
2301/3311	. . . .	levelling	2301/41246	. . . . .	by machine, e.g. on unwinder turret
2301/332	. . .	Turning, overturning	2301/4127	. . . .	with interleaf layer, e.g. liner
2301/3321	. . . .	kinetic therefor	2301/4128	. . . .	Multiple rolls
2301/33212	. . . . .	about an axis parallel to the direction of displacement of material	2301/41282	. . . . .	coaxially arranged
2301/33214	. . . . .	about an axis perpendicular to the direction of displacement and parallel to the surface of material	2301/41284	. . . . .	involving juxtaposed lanes wound around a common axis
2301/33216	. . . . .	about an axis perpendicular to the direction of displacement and to the surface of material	2301/412845	. . . . .	and spliced to each other, e.g. for serial unwinding
2301/3322	. . . .	according to a determined angle	2301/413	. . .	Supporting web roll
2301/33222	. . . . .	90°	2301/41306	. . . .	Slot arrangement, e.g. saddle shaft bearing
2301/33224	. . . . .	180°	2301/41308	. . . .	Releasably clamping the web roll shaft
2301/333	. . .	Inverting	2301/4131	. . . .	Support with vertical axis
2301/3331	. . . .	Involving forward reverse transporting means	2301/41312	. . . . .	the axis being displaced on circular path of 360 degrees
2301/33312	. . . . .	forward reverse rollers pairs	2301/4132	. . . .	Cantilever arrangement
2301/33314	. . . . .	forward reverse belts	2301/41322	. . . . .	pivoting movement of roll support
2301/3332	. . . .	Tri-rollers type	2301/413223	. . . . .	around an axis parallel to roll axis
2301/34	. .	Modifying, selecting, changing direction of displacement	2301/413226	. . . . .	around an axis perpendicular to roll axis
2301/341	. . .	without change of plane of displacement	2301/41324	. . . . .	linear movement of roll support
2301/3411	. . . .	Right angle arrangement, i.e. 90 degrees	2301/413243	. . . . .	parallel to roll axis
2301/34112	. . . . .	changing leading edge	2301/413246	. . . . .	perpendicular to roll axis (e.g. lowering)
2301/3412	. . . .	involving transport means arranged obliquely to the in-feed or/and out-feed conveyor	2301/4133	. . . . .	special features
2301/342	. . .	with change of plane of displacement	2301/41335	. . . . .	locking mechanism for roll, e.g. axial flange
2301/3421	. . . .	for changing level of plane of displacement, i.e. the material being transported in parallel planes after at least two changes of direction	2301/4134	. . . .	Both ends type arrangement
2301/3422	. . . .	by travelling a path section in arc of circle	2301/41342	. . . . .	shaft transversing the roll (see also B65H 75/08)
2301/3423	. . . .	by travelling an angled curved path section for overturning and changing feeding direction	2301/41344	. . . . .	the roll being fixed to the shaft (e.g. by clamping)
2301/34232	. . . . .	involving conical angled curved path	2301/41346	. . . . .	separate elements engaging each end of the roll (e.g. chuck)
2301/35	. .	Spacing	2301/4135	. . . .	Movable supporting means
2301/351	. . .	parallel to the direction of displacement	2301/41352	. . . . .	moving on linear path (including linear slot arrangement)
2301/36	. .	Positioning; Changing position	2301/413523	. . . . .	reciprocating supporting means
2301/361	. . .	during displacement	2301/413526	. . . . .	vertically moving supporting means
2301/3611	. . . .	centering, positioning material symmetrically relatively to a given axis of displacement	2301/41354	. . . . .	moving along a path enclosing a circular area, e.g. turret
2301/36112	. . . . .	by elements engaging both sides of web	2301/41356	. . . . .	moving on path enclosing a non-circular area
2301/3612	. . . .	oscillating material transversely relatively to a given axis of displacement	2301/41358	. . . . .	moving on an arc of a circle, i.e. pivoting supporting means
2301/3613	. . . .	Lateral positioning	2301/4136	. . . .	Mounting arrangements not otherwise provided for
2301/36132	. . . . .	involving slanted belts or chains arrangement	2301/41361	. . . . .	sequentially used roll supports for the same web roll
2301/362	. . .	of stationary material	2301/41362	. . . . .	one of the supports for the roller axis being movable as auxiliary bearing
			2301/41364	. . . . .	the roller axis pivoting around an axis perpendicular to itself

- 2301/41366 arrangements for mounting and supporting and -preferably- driving the (un)winding shaft
- 2301/413665 articulated bearing
- 2301/41368 one or two lateral flanges covering part of or entire web diameter
- 2301/413683 at least one flange transmitting driving force
- 2301/413686 The driving flange being rotationally fixed
- 2301/41369 hub arrangements, i.e. involving additional part between core / roll and machine bearing
- 2301/4137 on its outer circumference
- 2301/41372 rollers or balls arrangement
- 2301/41374 arranged in a stationary manner
- 2301/41376 arranged in a non-stationary manner, i.e. changing according to actual roll diameter
- 2301/4138 belt arrangement
- 2301/41382 arranged in stationary manner
- 2301/41384 arranged in non-stationary manner, i.e. changing according to actual roll diameter
- 2301/41386 fixed or flexible frictional surface
- 2301/41387 on inclined surface
- 2301/4139 Supporting means for several rolls
- 2301/41392 moving in forced (kinematic) relationship
- 2301/41394 moving independently from each other
- 2301/41398 juxtaposed
- 2301/414 Winding
- 2301/4141 Preparing winding process
- 2301/41414 involving pulper or doctor blade or air knife
- 2301/41417 cutting leading strip (überführstreifen) for transferring web
- 2301/41419 Starting winding process
- 2301/41421 involving electrostatic means
- 2301/41422 involving mechanical means
- 2301/414222 fixed to frame, tucking leading edge to core, e.g. by brush
- 2301/414225 fixed to shaft or mandrel, e.g. clamping or pinching leading edge to shaft or mandrel
- 2301/414227 rotatable grippers for coreless winding
- 2301/41423 involving liquid, e.g. wetting core by water
- 2301/41424 involving use of glue
- 2301/41425 involving blowing means, e.g. air blast
- 2301/41426 involving suction means, e.g. core with vacuum supply
- 2301/41427 involving arrangements for securing leading edge to core, e.g. adhesive tape
- 2301/41428 involving additional element between core and web
- 2301/41429 in coreless applications
- 2301/4143 Performing winding process
- 2301/41432 special features of winding process
- 2301/414321 helical winding ([B65H 2701/18444 takes precedence](#))
- 2301/414322 oscillated winding, i.e. oscillating the axis of the winding roller or material
- 2301/414323 spiral winding, i.e. single layers not touching each other, e.g. for tyre rubber
- 2301/414324 involving interleaf web/sheet, e.g. liner
- 2301/414325 winding a core in-line with the web, e.g. wound core made out of sheet material
- 2301/414326 winding on core with non-circular cross-sectional profile, e.g. polygonal, oval, flat or slightly curved
- 2301/414327 winding on core irregular inner or outer longitudinal profile, e.g. stepped or grooved
- 2301/414328 different torques on both ends of core
- 2301/414329 blowing gas into winding gap
- 2301/4144 Finishing winding process
- 2301/41441 and blocking outer layers against falling apart
- 2301/41442 Specified by the sealing medium sealing used
- 2301/414421 Glue or hot-melt
- 2301/414422 Adhesive tape
- 2301/414424 Electrostatic charge
- 2301/414425 Simultaneous deformation of trailing edge and outer layers
- 2301/414427 Heating or use of thermoplastic material
- 2301/414428 Folding of trailing end
- 2301/41443 Specified by the place to where the sealing medium is applied
- 2301/414433 onto the roll
- 2301/414436 onto the web
- 2301/41444 Specified by process phase during which sealing /securing is performed
- 2301/414443 Sealing or securing within the winding station
- 2301/414446 Sealing or securing in a separate following station
- 2301/41445 after winding process
- 2301/41446 removing roll/core from shaft/mandrel, e.g. by compressed air
- 2301/41447 discharging roll by, e.g. rolling it down a slope
- 2301/4146 involving particular drive arrangement
- 2301/41461 centre drive
- 2301/41462 nip drive
- 2301/41464 lateral drive arrangement, e.g. operating on the flange of the web roll
- 2301/41466 combinations of drives
- 2301/41468 centre and nip drive
- 2301/4148 slitting
- 2301/41482 prepare slitting process
- 2301/41484 slitting roll after winding, i.e. cutting log into individual rolls
- 2301/41485 winding on one single shaft or support
- 2301/41486 winding on two or more winding shafts simultaneously
- 2301/414863 directly against central support roller
- 2301/414866 on bed rollers
- 2301/41487 trimming edge
- 2301/4149 features concerning supply of cores
- 2301/41493 integrated core cutter
- 2301/41496 loading pre-arranged set of cores
- 2301/415 Unwinding
- 2301/41501 Special features of unwinding process
- 2301/415013 Roll holder being able to pivot around an axis perpendicular to roller axis

2301/415016	Roll material fed from inner layer	2301/41816	by core magazine within winding machine, i.e. horizontal or inclined ramp holding cores
2301/41505	Preparing unwinding process	2301/41818	mandrels circulating (cycling) in machine or system
2301/41506	the web roll not yet being in the unwinding support / unwinding location	2301/4182	Core or mandrel insertion, e.g. means for loading core or mandrel in winding position
2301/415063	the preparation performed in a roll preparation station	2301/41822	from above, i.e. by gravity
2301/415066	by connecting trailing edge of expiring web to leading edge of following web	2301/41824	from below, e.g. between rollers of winding bed
2301/41508	the web roll being in the unwinding support / unwinding location	2301/41826	by gripping or pushing means, mechanical or suction gripper
2301/415085	by adjusting / registering the lateral position of the web roll	2301/41828	in axial direction
2301/41509	opening web roll and related steps	2301/41829	positioning the core, e.g. in axial direction
2301/415095	gripping an edge of the web, e.g. by clamping and forward it, e.g. to splicing web advancing unit	2301/4185	Core or mandrel discharge or removal, also organisation of core removal
2301/4151	Starting unwinding process	2301/41852	by extracting mandrel from wound roll, e.g. in coreless applications
2301/41518	Performing unwinding process	2301/418523	by movement of the wound web roll
2301/415185	Web unwound being guided over (pivoting) guide resting on the roller diameter	2301/418526	by movement of the mandrel
2301/4152	Finishing unwinding process	2301/41854	by extracting core from wound roll, i.e. in coreless applications only
2301/41522	Detecting residual amount of web	2301/41856	by stripping core from mandrel or chuck, e.g. by spring mechanism
2301/41524	Detecting trailing edge	2301/41858	by collecting cores in container
2301/41525	and consuming web roll up to trailing edge	2301/41859	by continuously operated device, e.g. conveyor
2301/4155	after unwinding process	2301/4186	by lifting or lowering device, e.g. crane
2301/41552	separating core from remaining layers of wound material from each other	2301/4187	Relative movement of core or web roll in respect of mandrel
2301/415525	by cutting wound material, e.g. transversally (core slabbing)	2301/4189	Cutting
2301/4165	Unwinding or winding material from or to one station in which the material is stored	2301/41891	Cutting knife located between two winding rollers
2301/417	Handling or changing web rolls	2301/41892	Cutting knife located in winding or guiding roller and protruding therefrom
2301/41702	management and organisation of stock and production	2301/418925	and cooperating with second assembly located in another roller
2301/41704	involving layout of production or storage facility	2301/41893	Cutting knife moving on circular path
2301/4171	Handling web roll	2301/41894	Cutting knife moving on circular or acuate path, e.g. pivoting around winding roller
2301/4172	by circumferential portion, e.g. rolling on circumference	2301/41896	Several cutting devices, e.g. located at different upstream/downstream positions of the web path
2301/41722	by acting on outer surface, e.g. gripping or clamping	2301/41898	Cutting threading tail and leading it to new core
2301/41724	by crane	2301/419	from or to storage, i.e. the storage integrating winding or unwinding means
2301/41726	by conveyor	2301/4191	for handling articles of limited length, e.g. AO format, arranged at intervals from each other
2301/4173	by central portion, e.g. gripping central portion	2301/41912	between two belt like members
2301/41732	by crane	2301/4192	for handling articles of limited length in shingled formation
2301/41734	involving rail	2301/41922	and wound together with single belt like members
2301/4174	by side portion, e.g. forwarding roll lying on side portion	2301/419225	Several belts spaced in axis direction
2301/41745	by axial movement of roll	2301/41924	between two belt like members
2301/4175	involving cart (see B65H 2405/422)	2301/4193	for handling continuous material
2301/4176	Preparing leading edge of replacement roll	2301/42	Piling, depiling, handling piles
2301/41764	by adhesive tab	2301/421	Forming a pile
2301/41766	by adhesive tab or tape with cleavable or delaminating layer	2301/4211	of articles alternatively overturned, or swivelled from a certain angle
2301/418	Changing web roll		
2301/4181	Core or mandrel supply		
2301/41812	by conveyor belt or chain running in closed loop		
2301/41814	by container storing cores and feeding through wedge-shaped slot or elongated channel		

- 2301/42112 swivelled from 180°
- 2301/42114 swivelled from 90°
- 2301/4212 of articles substantially horizontal
- 2301/42122 by introducing articles from under the pile
- 2301/42124 by introducing articles selectively from under or above the pile
- 2301/4213 of a limited number of articles, e.g. buffering, forming bundles
- 2301/42132 between belts
- 2301/42134 Feeder loader, i.e. picking up articles from a main stack for maintaining continuously enough articles in a machine feeder
- 2301/4214 of articles on edge
- 2301/42142 by introducing articles from beneath
- 2301/42144 by erecting articles from horizontal transport flushing with the supporting surface of the pile
- 2301/42146 by introducing articles from above
- 2301/4215 of articles riding on an elongated member
- 2301/4216 of web folded in zig-zag form
- 2301/42162 Juxtaposing several piles
- 2301/42164 Guiding web alternatively to corner of pile receiver
- 2301/421645 by stationary guide element
- 2301/4217 Forming multiple piles
- 2301/42172 simultaneously
- 2301/4218 Changing the pile
- 2301/4219 forming a pile in which articles are offset from each other, e.g. forming stepped pile
- 2301/42192 forming a pile of articles in zigzag fashion
- 2301/42194 forming a pile in which articles are offset from each other in the delivery direction
- 2301/422 Handling piles, sets or stacks of articles
- 2301/4221 Removing package around stack
- 2301/42212 Extracting staple from stapled set of articles
- 2301/4222 Squaring-up piles
- 2301/4223 Pressing piles
- 2301/4224 Gripping piles, sets or stacks of articles
- 2301/42242 by acting on the outermost articles of the pile for clamping the pile
- 2301/42244 Sets in which articles are offset to each other
- 2301/4225 in or on special supports
- 2301/42252 Vehicles, e.g. carriage, truck
- 2301/42254 Boxes; Cassettes; Containers
- 2301/422542 emptying or unloading processes
- 2301/422544 opening processes
- 2301/422546 superposed
- 2301/422548 filling or loading process
- 2301/42256 Pallets; Skids; Platforms with feet, i.e. handled together with the stack
- 2301/4226 Delivering, advancing piles
- 2301/42261 by dropping
- 2301/422615 from opposite part-support elements, e.g. operated simultaneously
- 2301/42262 by acting on surface of outermost articles of the pile, e.g. in nip between pair of belts or rollers (Nota: gripping pile see [B65H 2301/4224](#))
- 2301/42264 by moving the surface supporting the lowermost article of the pile, e.g. conveyor, carriage
- 2301/42265 by moving the surface supporting the pile of articles on edge, e.g. conveyor or carriage
- 2301/42266 by acting on edge of the pile for moving it along a surface, e.g. pushing
- 2301/42268 by acting on one of the outermost article for moving pile of articles on edge along a surface, e.g. pushing
- 2301/4227 Deforming piles, e.g. folding
- 2301/4228 Dividing piles
- 2301/4229 cutting piles
- 2301/423 Depiling; Separating articles from a pile
- 2301/4231 by two or more separators acting selectively on the same pile
- 2301/4232 of horizontal or inclined articles, i.e. wherein articles support fully or in part the mass of other articles in the piles
- 2301/42322 from bottom of the pile
- 2301/423225 by dropping the article through an opening beneath the pile
- 2301/42324 from top of the pile
- 2301/423245 the pile lying on a stationary support, i.e. the separator moving according to the decreasing height of the pile
- 2301/42326 selectively from bottom or top of the pile
- 2301/42328 of inclined articles and inclination angle >45
- 2301/4233 by peeling, i.e. involving elongated elements traversing pile
- 2301/4234 assisting separation or preventing double feed
- 2301/42342 vibrating
- 2301/42344 separating stack from the sheet separating means after separation step
- 2301/42346 Releasing stack holding means during separation step
- 2301/4236 of web material in zig-zag form
- 2301/4237 of vertical articles, e.g. by extracting articles laterally from the pile
- 2301/42372 by extracting articles upwards from the pile
- 2301/424 in sorter
- 2301/426 Forming batches
- 2301/4261 by inserting a wire or tape shaped marker element
- 2301/42612 cut into tabs before or upon insertion
- 2301/4262 by inserting auxiliary support as defined in [B65H 31/32](#)
- 2301/42622 and using auxiliary means for facilitating introduction of the auxiliary support
- 2301/4263 Feeding end plate or end sheet before formation or after completion of a pile
- 2301/42632 feeding batch receiving board or sheet into the pile for receiving next batch
- 2301/43 Gathering; Associating; Assembling
- 2301/431 Features with regard to the collection, nature, sequence and/or the making thereof
- 2301/4311 Making personalised books or mail packets according to personal, geographic or demographic data
- 2301/4312 Gathering material delivered from a digital printing machine
- 2301/4313 Making samples assemblies

2301/4314	. . . .	Making packets of bundles of banknotes or the like in correct sequence	2301/43825	. . . . .	involving elastically deformable member, e.g. clip
2301/4315	. . . .	Webs	2301/43826	. . . . .	involving wire element supplied from a wire dispenser
2301/43151	. . . . .	and ribbons, tapes or strips	2301/43827	. . . . .	involving coating adhesive on at least a part of the handled material
2301/43152	. . . . .	and threads	2301/43828	. . . . .	involving simultaneous deformation of at least a part of the articles to be bound
2301/4316	. . . .	sheet-like articles and threads	2301/44	. .	Moving, forwarding, guiding material
2301/4317	. . . .	Signatures, i.e. involving folded main product or jacket	2301/441	. . .	by vibrating
2301/43171	. . . . .	Inserting subproducts in a signature as main product	2301/442	. . .	by acting on edge of handled material
2301/431711	. . . . .	the subproduct being inserted in a direction substantially perpendicular to the fold of the main product	2301/4421	. . . .	by abutting edge
2301/431713	. . . . .	the main product being slightly inclined or horizontal and oriented with opening face laterally to its transport direction	2301/4422	. . . .	with guide member moving in the material direction
2301/431715	. . . . .	the main product being slightly inclined or horizontal and oriented with opening face rearwards to its transport direction	2301/4423	. . . .	with guide member rotating against the edges of material
2301/431716	. . . . .	the main product being oriented with opening face upwards	2301/443	. . .	by acting on surface of handled material
2301/431718	. . . . .	the subproduct being inserted in a direction parallel to the fold of the main product	2301/4431	. . . .	by means with operating surfaces contacting opposite faces of material
2301/43172	. . . . .	attaching subproducts on outer portion of a main product	2301/44312	. . . . .	between belts and rollers
2301/4318	. . . .	Gathering, associating, assembling articles from a single source which is supplied by several sources	2301/44314	. . . . .	between belts and cylinder
2301/432	. . .	in pockets, i.e. vertically	2301/44316	. . . . .	between belts
2301/4321	. . . .	and dropping material through bottom of the pocket	2301/44318	. . . . .	between rollers
2301/4322	. . . .	Asymmetric pockets	2301/44319	. . . . .	between balls
2301/433	. . .	in trays, i.e. horizontally	2301/4432	. . . .	by means having an operating surface contacting only one face of the material, e.g. roller
2301/434	. . .	In channels, e.g. in which the articles are substantially vertical or inclined	2301/44322	. . . . .	belt
2301/4341	. . . .	with several channels on a rotary carrier rotating around an axis parallel to the channels	2301/44324	. . . . .	Rollers
2301/435	. . .	on collecting conveyor	2301/443243	. . . . .	pivoting around an axis perpendicular to the plane of the material (especially when web is running in a U-loop)
2301/4351	. . . .	receiving articles astride thereon	2301/443246	. . . . .	pivoting around an axis parallel to the plane of the material
2301/4352	. . . .	with pushers, e.g. the articles being substantially horizontal	2301/4433	. . . .	by means holding the material
2301/4353	. . . .	with compartments, e.g. the articles being substantially horizontal in each compartment	2301/44331	. . . . .	at particular portion of handled material (to be used in combination with at least one code B65H 2701/13)
2301/4354	. . . .	with grippers	2301/44332	. . . . .	using magnetic forces
2301/4355	. . . .	with pins engaging into handled material	2301/44334	. . . . .	using electrostatic forces
2301/4356	. . . .	with supports for receiving combination of articles astride and in standing position	2301/44335	. . . . .	using adhesive forces
2301/436	. . .	on saddles	2301/44336	. . . . .	using suction forces
2301/4361	. . . .	on a rotary carrier rotating around an axis parallel to the saddles	2301/44338	. . . . .	using mechanical grippers
2301/437	. . .	Repairing a faulty collection due to, e.g. misfeed, multiplefeed	2301/4434	. . . .	involving user cooperation
2301/438	. . .	Finishing	2301/44342	. . . . .	pulling
2301/4381	. . . .	Bringing a cover	2301/4435	. . . .	by acting only on part of the surface
2301/4382	. . . .	Binding or attaching processes	2301/44352	. . . . .	on opposite lateral edge regions
2301/43821	. . . . .	involving binding tape	2301/444	. . .	Stream of articles in shingled formation, overlapping stream
2301/43822	. . . . .	involving heating	2301/4447	. . . .	multiple streams
2301/43823	. . . . .	involving pressure sensitive adhesive	2301/44472	. . . . .	superposed
2301/43824	. . . . .	involving wrapping, banding or strapping	2301/44474	. . . . .	interfolded
			2301/445	. . .	stream of articles separated from each other
			2301/4451	. . . .	forming a stream or streams of separated articles
			2301/44512	. . . . .	forming parallel streams of separated articles
			2301/44514	. . . . .	Separating superposed articles
			2301/44516	. . . . .	so that there are no intervals between the sheets
			2301/4452	. . . .	Regulating space between separated articles
			2301/44522	. . . . .	Varying space between separated articles
			2301/4453	. . . .	and performing dynamic accumulation

2301/4454	. . . .	Merging two or more streams	2301/452	. . . .	utilising rotary folding means
2301/4455	. . . .	Diverting a main stream into part streams	2301/4521	. . . .	without tucker blades
2301/44552	. . . . .	by alternatively directing articles following each other to appropriate part stream	2301/453	. . . .	opening folded material
2301/446	. . . .	Assisting moving, forwarding or guiding of material	2301/4531	. . . . .	by opposite opening drums
2301/4461	. . . . .	by blowing air towards handled material	2301/45312	. . . . .	adjusting stop relative to one of the drum, i.e. in function of format
2301/4462	. . . . .	by jogging	2301/4532	. . . . .	by movable member crossing the path of the folded material, i.e. traversing along product lip
2301/447	. . . .	transferring material between transport devices	2301/45322	. . . . .	Helical member
NOTE			2301/4533	. . . . .	by stationary member in the transport path of the folded material, i.e. the fold being parallel to the direction of transport
When classifying in this group, the notation + B65H 2220/01 designates downstream transport device, while the notation + B65H 2220/02 designates the upstream transport device			2301/46	. . . .	Splicing
2301/4471	. . . . .	Grippers, e.g. moved in paths enclosing an area	2301/4601	. . . . .	special splicing features or applications
2301/44712	. . . . .	carried by chains or bands	2301/46011	. . . . .	in winding process
2301/44714	. . . . .	carried by rotating members	2301/46013	. . . . .	and maintaining register of spliced webs
2301/44716	. . . . .	oscillated in arcuate paths	2301/46014	. . . . .	of webs with labels
2301/44718	. . . . .	reciprocated in rectilinear paths	2301/46015	. . . . .	of (half) tube webs
2301/4472	. . . . .	Suction grippers, e.g. moved in paths enclosing an area	2301/46016	. . . . .	replacing lap splice by butt splice
2301/44722	. . . . .	oscillated in arcuate paths	2301/46017	. . . . .	involving several layers
2301/44724	. . . . .	reciprocated in rectilinear paths	2301/46018	. . . . .	involving location or further processing of splice
2301/4473	. . . . .	Belts, endless moving elements on which the material is in surface contact	2301/460183	. . . . .	marking of splice
2301/44732	. . . . .	transporting articles in overlapping stream	2301/460186	. . . . .	detect location of splice
2301/44734	. . . . .	overhead, i.e. hanging material by attraction forces, e.g. suction, magnetic forces	2301/4602	. . . . .	Preparing splicing process
2301/44735	. . . . .	suction belt	2301/46022	. . . . .	by detecting mark on rotating new roll and/or synchronize roll with trailing web speed
2301/4474	. . . . .	Pair of cooperating moving elements as rollers, belts forming nip into which material is transported	2301/46024	. . . . .	by collecting a loop of material of the fresh web downstream of the splicing station
2301/4475	. . . . .	Rotary or endless transport devices having elements acting on edge of articles	2301/4604	. . . . .	Opening web rolls, remove outer layers
2301/4476	. . . . .	Endless transport devices with compartments	2301/46042	. . . . .	by tearing, bursting etc. preferably only outer (protective) layer
2301/44765	. . . . .	Rotary transport devices with compartments	2301/46043	. . . . .	by cutting or tearing only outermost layer
2301/4477	. . . . .	Transport device with transport surface in sliding contact with handled material	2301/46044	. . . . .	by cutting or perforating in transverse direction
2301/4478	. . . . .	Transport device acting on edge of material	2301/4606	. . . . .	Preparing leading edge for splicing
2301/4479	. . . . .	Saddle conveyor with saddle member extending in transport direction	2301/46064	. . . . .	by transversally operated carriage
2301/44795	. . . . .	Saddle conveyor with saddle member extending transversally to transport direction	2301/46066	. . . . .	by inserting adhesive tape between leading edge and wound roll
2301/448	. . . . .	Diverging	2301/4607	. . . . .	by adhesive tape
2301/4481	. . . . .	Stripping material from carrier web	2301/46072	. . . . .	inserted between leading edge and wound web roll
2301/4482	. . . . .	to multiple paths, i.e. more than 2	2301/46075	. . . . .	by adhesive tab
2301/44822	. . . . .	3 paths	2301/46078	. . . . .	the adhesive tab or tab having a cleavable or delaminating layer
2301/449	. . . . .	Features of movement or transforming movement of handled material	2301/461	. . . . .	Processing webs in splicing process
2301/4491	. . . . .	transforming movement from continuous to intermittent or <i>vice versa</i>	2301/4611	. . . . .	before splicing
2301/4492	. . . . .	braking	2301/46115	. . . . .	by bringing leading edge to splicing station, e.g. by chain or belt
2301/44921	. . . . .	by friction contact with non driven element	2301/4613	. . . . .	during splicing
2301/4493	. . . . .	intermittent	2301/46132	. . . . .	consuming web up to trailing edge
2301/45	. . . . .	Folding, unfolding	2301/4615	. . . . .	after splicing
2301/4505	. . . . .	Folding bound sheets, e.g. stapled sheets	2301/46152	. . . . .	cutting off tail after (flying) splicing
2301/451	. . . . .	involving manual operations	2301/46154	. . . . .	guiding tail after (flying) splicing
			2301/4617	. . . . .	cutting webs in splicing process
			2301/46171	. . . . .	cutting leading edge of new web, e.g. manually
			2301/46172	. . . . .	cutting expiring web only
			2301/46174	. . . . .	cutting both spliced webs separately
			2301/46176	. . . . .	cutting both spliced webs simultaneously
			2301/46178	. . . . .	cutting by transversally moving element

2301/462	. . .	Form of splice	2301/512145	. . . . .	Forming a tube
2301/4621	. . . .	Overlapping article or web portions	2301/5122	. . . .	Corrugating; Stiffening
2301/46212	. . . . .	with C-folded trailing edge for embedding leading edge	2301/5123	. . . .	Compressing, i.e. diminishing thickness
2301/46213	. . . . .	with L-folded edges sealed together	2301/51232	. . . . .	for flattening
2301/4622	. . . .	Abutting article or web portions, i.e. edge to edge	2301/5124	. . . .	Stretching; Tenting
2301/46222	. . . . .	involving double butt splice, i.e. adhesive tape applied on both sides of the article or web portions	2301/51242	. . . . .	Stretching transversely; Tenting
2301/4623	. . . .	Spaced article or web portions, i.e. gap between edges	2301/512422	. . . . .	involving roller pair acting on edge of web
2301/4625	. . . .	Slanted	2301/512425	. . . . .	involving guiding web along the circumference of a ring section
2301/463	. . .	splicing means, i.e. means by which a web end is bound to another web end	2301/512427	. . . . .	involving members moving axially on periphery of a drum
2301/4631	. . . .	Adhesive tape	2301/5125	. . . .	Restoring form
2301/46312	. . . . .	double-sided	2301/51252	. . . . .	Compensating stretching
2301/46314	. . . . .	Pieces of adhesive tape, e.g. labels	2301/51254	. . . . .	Unshirring
2301/4632	. . . .	Simultaneous deformation of the two web ends	2301/51256	. . . . .	Removing waviness or curl, smoothing
2301/46325	. . . .	Separate element, e.g. clip	2301/512565	. . . . .	involving tri-roller arrangement
2301/46326	. . . .	Stitched or seamed together	2301/5126	. . . .	Embossing, crimping or similar processes
2301/46327	. . . .	Ultrasonic sealing	2301/5127	. . . .	shredding
2301/4633	. . . .	Glue	2301/513	. . .	Modifying electric properties
2301/46332	. . . . .	hot melt	2301/5131	. . . .	Magnetising
2301/4634	. . . .	Heat seal splice	2301/5132	. . . .	Bringing electrostatic charge
2301/4636	. . . .	None, i.e. simply feeding both webs simultaneously or sequentially	2301/5133	. . . .	Removing electrostatic charge
2301/4637	. . . .	Male and female configuration	2301/514	. . .	Modifying physical properties
2301/464	. . .	effecting splice	2301/5141	. . . .	Rendering inert
2301/4641	. . . .	by pivoting element	2301/5142	. . . .	Moistening
2301/46412	. . . . .	by element moving in a direction perpendicular to the running direction of the web	2301/51422	. . . . .	by passing through a bath
2301/46414	. . . .	by nipping rollers	2301/5143	. . . .	Warming
2301/464145	. . . . .	at least one of the rollers having additional feature, eg. knife or at least partly non-cylindrical shape	2301/51432	. . . . .	Applying heat and pressure
2301/4695	. . .	longitudinally	2301/5144	. . . .	Cooling
2301/50	. .	Auxiliary process performed during handling process	2301/515	. . .	Cutting handled material
2301/51	. .	Modifying a characteristic of handled material	2301/5151	. . . .	transversally to feeding direction
2301/511	. . .	Processing surface of handled material upon transport or guiding thereof, e.g. cleaning	2301/51512	. . . . .	using a cutting member moving linearly in a plane parallel to the surface of the web and along a direction crossing the handled material
2301/5111	. . . .	Printing; Marking	2301/515123	. . . . .	arranged for cutting web supported on the surface of a cylinder
2301/51115	. . . . .	freeing product contained in handled material	2301/515126	. . . . .	for cutting from inside of the cylinder
2301/5112	. . . .	removing material from outer surface	2301/51514	. . . . .	Breaking; Bursting; Tearing, i.e. cutting without cutting member
2301/51121	. . . . .	removing printed information, e.g. marks	2301/5152	. . . .	Cutting partially, e.g. perforating
2301/51122	. . . . .	peeling layer of material	2301/5153	. . . .	Details of cutting means
2301/5113	. . . .	applying adhesive	2301/51531	. . . . .	involving forms of stored energy, e.g. compressed air or explosive
2301/51132	. . . . .	hot melt adhesive	2301/51532	. . . . .	Blade cutter, e.g. single blade cutter
2301/5114	. . . .	coating	2301/515323	. . . . .	rotary
2301/51145	. . . . .	by vapour deposition	2301/515326	. . . . .	Multiple blade cutter
2301/5115	. . . .	Cleaning	2301/51533	. . . . .	Air jet
2301/512	. . .	Changing form of handled material	2301/51534	. . . . .	Water jet
2301/5121	. . . .	Bending, buckling, curling, bringing a curvature	2301/51535	. . . . .	adhesive tape or tab
2301/51212	. . . . .	perpendicularly to the direction of displacement of handled material, e.g. forming a loop	2301/51536	. . . . .	Laser
2301/512125	. . . . .	by abutting against a stop	2301/51537	. . . . .	Vacuum means
2301/51214	. . . . .	parallel to direction of displacement of handled material	2301/51538	. . . . .	Die-cutting
			2301/51539	. . . . .	Wire
			2301/5154	. . . .	from hand-held or table dispenser
			2301/51541	. . . . .	with means mounted on roll of material
			2301/5155	. . . .	longitudinally
			2301/5159	. . . .	shredding
			2301/516	. . .	Securing handled material to another material
			2301/5161	. . . .	Binding processes

2301/51611	. . . . .	involving at least a binding element traversing the handled material, e.g. staple	2401/241	. . .	Self lubricating
2301/51612	. . . . .	involving ultrasonic waves	2401/242	. . .	porous
2301/51614	. . . . .	involving heating element	2401/243	. . .	heat-shrinkable
2301/51616	. . . . .	involving simultaneous deformation of parts of the material to be bound	2401/244	. . .	non-permeable
2301/5162	. . . . .	Coating, applying liquid or layer of any material to material	2402/00		Features of construction
2301/5163	. . . . .	Applying label, tab to handled material	2402/10	. .	Modular construction
2301/517	. . .	Drying material	2402/11	. .	using preforms, e.g. profiles
2301/52	. .	for starting	2402/20	. .	Force system
2301/521	. . .	Stripping web from roll	2402/21	. .	Concurrent force system
2301/522	. . .	Threading web into machine	2402/22	. .	Parallel force system
2301/52202	. . . . .	around several subsequent rollers (e.g. calendar)	2402/23	. .	Composition of forces
2301/53	. .	for acting on performance of handling machine	2402/231	. . .	Parallelogram of forces
2301/5305	. . .	Cooling parts or areas of handling machine	2402/232	. . .	Resolution of a force
2301/531	. . .	Cleaning parts of handling machine	2402/24	. .	Means for balancing forces
2301/532	. . .	Modifying characteristics of surface of parts in contact with handled material	2402/25	. .	Centrifugal force
2301/5321	. . . . .	Removing electrostatic charge generated at said surface	2402/30	. .	Support, subassembly, mounting thereof
2301/5322	. . . . .	Generating electrostatic charge at said surface	2402/31	. .	Pivoting support means
2301/5323	. . . . .	bringing adhesive properties	2402/32	. .	Sliding support means
2301/533	. . .	Self-repair; Self-recovery; Automatic correction of errors	2402/33	. .	cantilever support means
2301/54	. .	for managing processing of handled material	2402/34	. .	other support assembly
2301/541	. . .	Counting	2402/341	. . .	Eccentric mounting
2301/542	. . .	Quality control	2402/342	. . .	Parallelogram mounting
2301/5421	. . . . .	taking samples	2402/343	. . .	Telescopic mounting
2301/543	. . .	processing waste material	2402/344	. . .	scissor-like assembly
2301/544	. . .	Reading; Scanning	2402/35	. .	rotating around an axis
2401/00		Materials used in construction, properties thereof	2402/351	. . .	Turntable
2401/10	. .	Materials	2402/352	. . .	turret
2401/11	. .	Macromolecular composition	2402/40	. .	Features of frame, housing or mounting of the handling apparatus
2401/111	. . .	Elastomer	2402/41	. .	Portable or hand-held apparatus
2401/112	. . .	Fiber reinforced composition	2402/411	. . .	with means for mounting the apparatus on the user body, e.g. arm, wrist
2401/1121	. . . . .	Carbon fibre composition	2402/412	. . .	details or the parts to be hold by the user, e.g. handle
2401/113	. . .	Polymer composition	2402/413	. . .	with means for mounting the apparatus to clothing of a user
2401/114	. . .	Polyester composition	2402/414	. . .	Manual tools for filamentary material, e.g. for mounting or removing a bobbin, measuring tension or splicing
2401/1141	. . . . .	Flexible polyester film made from biaxially oriented polyethylene terephthalate	2402/42	. .	Mobile apparatus, i.e. mounted on mobile carrier such as tractor or truck
2401/115	. . .	Resin composition	2402/43	. .	Wall apparatus, i.e. mounted on vertical support
2401/12	. .	Ceramic composition	2402/44	. .	Housing
2401/13	. .	Coatings, paint, varnish and details thereof	2402/441	. . .	movable for facilitating access to area inside the housing, e.g. pivoting, sliding
2401/14	. .	textile materials	2402/442	. . .	with opening for introducing material to be handled, e.g. to insert wound roll of product
2401/141	. . .	woven or knit material	2402/443	. . .	with opening for delivering material, e.g. to pull out web (dispensing)
2401/15	. .	Metals	2402/45	. .	door (s)
2401/20	. .	Physical properties	2402/46	. .	table apparatus
2401/21	. .	electrical properties	2402/50	. .	Machine elements
2401/211	. . .	Conductivity	2402/51	. .	Joints
2401/212	. . .	electrical resistance	2402/511	. . .	riveted joints
2401/213	. . .	magnetic properties	2402/512	. . .	Key and spline joints
2401/22	. .	visual aspect properties	2402/5121	. . . . .	Key joint
2401/221	. . .	opaque material	2402/5122	. . . . .	Spline joint
2401/222	. . .	transparent material	2402/513	. . .	Welded joints
2401/23	. .	Strength of materials	2402/514	. . .	threaded joints
2401/231	. . .	Rigidity	2402/515	. . .	Quick release
2401/2311	. . . . .	tensile elastic, Young's modulus	2402/5151	. . . . .	involving pawl and ratched rack
2401/24	. .	Other properties	2402/5152	. . . . .	Snap

2402/5153	. . . . Clip	2403/40	. Toothed gearings
2402/5154	. . . . involving magnetic forces	2403/41	. . Rack-and-pinion, cogwheel in cog railway
2402/5155	. . . . Latch mechanism	2403/411	. . . Double rack cooperating with one pinion, e.g. for performing symmetrical displacement relative to pinion
2402/5156	. . . . Ball-spring release mechanism		
2402/516	. . . other joints	2403/412	. . . Flexible rack
2402/5161	. . . . Ball and socket, knee joint	2403/42	. . Spur gearing
2402/5162	. . . . Knuckle joint	2403/421	. . . involving at least a gear with toothless portion
2402/5163	. . . . Bayonet joint	2403/422	. . . involving at least a swing gear
2402/5164	. . . . plugs, dowels or other devices fastened in walls or the like by inserting them in holes made therein for that purpose	2403/43	. . Bevel gearing
		2403/44	. . Internal gearing
2402/517	. . . Washer	2403/45	. . helical gearing
2402/5171	. . . . of elastic material	2403/46	. . worm gearing
2402/52	. . Bearings	2403/47	. . Ratchet
2402/521	. . . Details of mounting	2403/48	. . Other
2402/5211	. . . . Self aligning bearings	2403/481	. . . Planetary
2402/522	. . . Support of bearing	2403/482	. . . Harmonic drive
2402/5221	. . . . Shaft	2403/483	. . . Differential gearing
2402/52211	. . . . . retractable	2403/484	. . . Speed reducers
2402/523	. . . Magnetic bearings	2403/50	. Driving mechanisms
2402/524	. . . Thrust bearings	2403/51	. . Cam mechanisms
2402/525	. . . using fluid, e.g. air cushion, hydrodynamic, hydrostatic bearings Thrust bearings	2403/511	. . . involving cylindrical cam, i.e. cylinder with helical groove at its periphery
2402/53	. . Guideways	2403/512	. . . involving radial plate cam
2402/531	. . . involving bearings	2403/513	. . . involving elongated cam, i.e. parallel to linear transport path
2402/54	. . Springs	2403/514	. . . involving eccentric
2402/541	. . . Wound tape or wire spring, i.e. spirally coiled tape or wire spring	2403/52	. . Translation screw-thread mechanisms
2402/542	. . . Helical spring	2403/53	. . Articulated mechanisms
2402/543	. . . Compression spring	2403/531	. . . Planar mechanisms
2402/544	. . . Leaf spring	2403/5311	. . . . Parallelogram mechanisms
2402/5441	. . . . Single point attachment, i.e. one end of the spring is free	2403/532	. . . Crank-and-rocker mechanism
2402/545	. . . Torsion spring	2403/5321	. . . . with oscillating crank, i.e. angular movement of crank inferior to 360
2402/546	. . . Dead point arrangement, i.e. wherein a mechanism is maintained in standstill by spring forces	2403/533	. . . Slotted link mechanism
		2403/5331	. . . . with sliding slotted link
		2403/5332	. . . . with rotating slotted link
2402/547	. . . constant force arrangement	2403/5333	. . . . with oscillating slotted link
2402/60	. Assembling, coupling means	2403/54	. . other
2402/61	. . Keying means, i.e. for preventing incorrect mounting of an element	2403/541	. . . Trigger mechanisms
2402/62	. . Adapter, interface	2403/542	. . . Geneva mechanisms
2402/63	. . Couplings	2403/543	. . . producing cycloids
2402/631	. . . flexible	2403/544	. . . involving rolling up - unrolling of transmission element, e.g. winch
2402/632	. . . Resilient material coupling	2403/5441	. . . . with steel band as tracting element
2402/633	. . . Universal joint; Hooke's coupling	2403/55	. . Tandem; twin or multiple mechanisms, i.e. performing the same operation
2402/64	. . Locking means		
2402/70	. Lubrication	2403/60	. Damping means, shock absorbers
2402/80	. Method of manufacturing	2403/61	. . Rotation damper
2403/00	Power transmission; Driving means	2403/70	. Clutches; Couplings
2403/10	. Friction gearings	2403/72	. . Clutches, brakes, e.g. one-way clutch +F204
2403/11	. . Variable-speed drive unit	2403/721	. . . Positive-contact clutches, jaw clutches
2403/111	. . . frontal	2403/722	. . . Gear clutches
2403/20	. Belt drives	2403/723	. . . Wrap spring clutches
2403/21	. . Timing belts	2403/724	. . . electromagnetic clutches
2403/211	. . . Double-sided timing belts	2403/7241	. . . . eddy current clutches
2403/22	. . planetary	2403/725	. . . Brakes
2403/25	. . Arrangement for tensioning	2403/7251	. . . . Block brakes
2403/30	. Chain drives	2403/7252	. . . . fluid controlled
2403/31	. . involving non endless chain, e.g. the chain being used as a flexible rack	2403/7253	. . . . pneumatically controlled
		2403/7254	. . . . Dynamo electric brakes
		2403/7255	. . . . Disc brakes

2403/73	. . Couplings	2404/1314	. . . . convex
2403/731	. . . Slip couplings	2404/1315	. . . . conical
2403/732	. . . Torque limiters	2404/1316	. . . . stepped or grooved
2403/733	. . . Spring overload-release arrangements	2404/13161	. . . . . Regularly spaced grooves
2403/735	. . . Rubber couplings	2404/13162	. . . . . Helicoidal grooves
2403/80	. Transmissions, i.e. for changing speed	2404/13163	. . . . . in longitudinal direction
2403/81	. . involving swing gear	2404/1317	. . . . End profile
2403/82	. . Variable speed drive units	2404/13171	. . . . . tapered
2403/821	. . . friction	2404/132	. . . arrangement of segments along axis
2403/8211	. . . . frontal	2404/1321	. . . . Segments juxtaposed along axis
2403/90	. Machine drive	2404/13211	. . . . . and interconnected by gearing, e.g. differential gearing
2403/91	. . Heat engine	2404/13212	. . . . . and driven independently
2403/92	. . Electric drive	2404/133	. . . Limited number of active elements on common axis
2403/921	. . . Piezoelectric drives	2404/134	. . . Axle
2403/923	. . . Synchronous motor	2404/1341	. . . . Elastic mounting, i.e. subject to biasing means
2403/93	. . Fluid power drive	2404/1342	. . . . Built-up, i.e. arrangement for mounting axle element on roller body
2403/94	. . Other features of machine drive	2404/13421	. . . . . involving two elements, i.e. an element at each end of roller body
2403/941	. . . Manually powered handling device	2404/1343	. . . . axially limiting roller
2403/942	. . . Bidirectional powered handling device	2404/1344	. . . . with eccentric shaft
2403/943	. . . Electronic shaft arrangement	2404/1345	. . . . with two or more degrees of freedom
2403/944	. . . Multiple power sources for one mechanism	2404/1346	. . . . balancing roller
2403/945	. . . Self-weight powered	2404/1347	. . . . curved
2403/946	. . . Means for restitution of accumulated energy, e.g. flywheel, spring	2404/135	. . . Body
2404/00	Parts for transporting or guiding the handled material	2404/1351	. . . . Pipe element
2404/10	. Rollers	2404/136	. . . with canals
2404/11	. . Details of cross-section or profile	2404/1361	. . . . with cooling/heating system
2404/111	. . . shape	2404/1362	. . . . vacuum
2404/1112	. . . . D-shape	2404/1363	. . . . air supply or suction
2404/1113	. . . . C-shape	2404/1364	. . . . liquid
2404/1114	. . . . Paddle wheel	2404/137	. . . Means for varying longitudinal profiles
2404/1115	. . . . toothed roller	2404/1371	. . . . Means for bending, e.g. for controlled deflection
2404/1116	. . . . Polygonal cross-section	2404/1372	. . . . anti-deflection
2404/1118	. . . . with at least a relief portion on the periphery	2404/1373	. . . . means for varying width
2404/1119	. . . . with at least an axial cavity on the periphery	2404/1374	. . . . means for varying longitudinal length
2404/112	. . . Means for varying cross-section	2404/1375	. . . . means for assemble/disassemble
2404/1121	. . . . for changing diameter	2404/138	. . . other
2404/11211	. . . . . by inflation	2404/1381	. . . . Hinge
2404/1122	. . . . for rendering elastically deformable	2404/1385	. . . . built up out of spar elements
2404/11221	. . . . . involving spring	2404/14	. . Roller pairs
2404/113	. . . made of circular segments	2404/141	. . . with particular shape of cross profile
2404/114	. . . Built-up elements	2404/1411	. . . . D-shape / cylindrical
2404/1141	. . . . covering a part of the periphery	2404/1412	. . . . Polygonal / cylindrical
2404/115	. . . other	2404/1413	. . . . Paddle / cylindrical
2404/1151	. . . . brush	2404/1414	. . . . complementary relief
2404/1152	. . . . Markings, patterns	2404/1415	. . . . with male / female profiles
2404/117	. . . comprising hollow portions	2404/1416	. . . . toothed or cylindrical
2404/12	. . with at least an active member on periphery	2404/142	. . . arranged on movable frame
2404/121	. . . articulated around axis parallel to roller axis	2404/1421	. . . . rotating, pivoting or oscillating around an axis, e.g. parallel to the roller axis
2404/122	. . . rotated around an axis parallel to the roller axis (B65H 2404/54 takes precedence)	2404/14211	. . . . . the axis being one the roller axis, i.e. orbiting roller
2404/123	. . . moving in parallel to roller axis	2404/14212	. . . . . rotating, pivoting or oscillating around an axis perpendicular to the roller axis
2404/1231	. . . . Arrangement of axially movable active elements, i.e. movable in parallel to roller axis	2404/1422	. . . . reciprocating
2404/13	. . Details of longitudinal profile	2404/1423	. . . . circulating on a path, e.g. not enclosing an area
2404/131	. . . shape		
2404/1311	. . . . Undulations, wavy shape		
2404/1312	. . . . tapered shape		
2404/1313	. . . . concave		

2404/14231	. . . . .	enclosing an area	2404/192	. . .	noise limiting roller
2404/1424	. . . .	moving in parallel to their axis	2404/193	. . .	Incorporating element used for control, e.g. IC tag
2404/143	. . .	driving roller and idler roller arrangement	2404/20	. . .	Belts
2404/1431	. . . .	idler roller details	2404/21	. . .	plan profile
2404/144	. . .	with relative movement of the rollers to / from each other	2404/211	. . .	edge structure
2404/1441	. . . .	involving controlled actuator	2404/22	. . .	Cross section profile
2404/1442	. . . .	Tripping arrangements	2404/221	. . .	Round belt
2404/145	. . .	other	2404/2211	. . . .	Multiplicity of round belts spaced out each other
2404/1451	. . . .	Pressure	2404/222	. . .	Flat belt
2404/1452	. . . .	web tension	2404/2221	. . . .	Flat belt wider than width of transported material
2404/147	. . .	both nip rollers being driven	2404/2222	. . . .	with protrusions on inner side; Beads
2404/15	. .	Roller assembly, particular roller arrangement	2404/223	. . .	V-belt
2404/152	. . .	Arrangement of roller on a movable frame	2404/224	. . .	details of edges
2404/1521	. . . .	rotating, pivoting or oscillating around an axis, e.g. parallel to the roller axis	2404/23	. .	with auxiliary handling means
2404/15212	. . . . .	rotating, pivoting or oscillating around an axis perpendicular to the roller axis	2404/231	. . .	pocket or gripper type
2404/1522	. . . .	moving linearly in feeding direction	2404/2311	. . . .	integrally attached to or part of belt material
2404/1523	. . . .	moving in parallel to its axis	2404/232	. . .	Blade, plate, finger
2404/1526	. . . .	both roller ends being journalled to be movable independently from each other	2404/2321	. . . .	on two opposite belts or set of belts, i.e. having active handling section cooperating with and facing to each other
2404/153	. . .	Arrangements of rollers facing a transport surface	2404/2322	. . . .	Dog pins, i.e. details of construction or arrangement
2404/1531	. . . .	the transport surface being a cylinder	2404/233	. . .	rotary means, e.g. rollers
2404/1532	. . . .	the transport surface being a belt	2404/234	. . .	penetrating means
2404/154	. . .	Rollers conveyor	2404/24	. .	Longitudinal profile
2404/1541	. . . .	Arrangement for curved path section, e.g. perpendicular to plane of handled material (quadrant conveyor section)	2404/241	. . .	Endless helicoidal spring
2404/1542	. . . .	Details of pattern of rollers	2404/242	. . .	Timing belts
2404/15421	. . . . .	Chevron or herringbone configuration	2404/2421	. . . .	Double-sided timing belts
2404/15422	. . . . .	Quadrant or basket roller configuration	2404/243	. . .	with portions of different thickness
2404/1543	. . . .	extensible	2404/25	. .	Driving or guiding arrangements
2404/1544	. . . .	on a movable frame	2404/251	. . .	Details of drive roller
2404/16	. .	Details of driving	2404/2511	. . . .	Arrangement for varying outer diameter, e.g. for adjusting speed or belts
2404/161	. . .	Means for driving a roller parallelly to its axis of rotation, e.g. during its rotation	2404/252	. . .	Details of idler roller
2404/162	. . .	containing, enclosing own driving means	2404/253	. . .	Relative position of driving and idler rollers
2404/1621	. . . .	containing, enclosing braking means	2404/2531	. . . .	for performing transport along a path curved according to an axis parallel to the transport surface
2404/164	. . .	self-centring or automatically centring	2404/2532	. . . .	Arrangement for selectively changing the relative position of the driving and idler rollers
2404/165	. . .	braking roller	2404/254	. . .	Arrangement for varying the guiding or transport length
2404/166	. . .	reverse roller	2404/255	. . .	Arrangement for tensioning
2404/167	. . .	Idle roller	2404/256	. . .	Arrangement of endless belt
2404/17	. .	Details of bearings	2404/2561	. . . .	twisted around an axis parallel the transport direction
2404/171	. . .	beam supply	2404/257	. . .	Arrangement of non endless belt
2404/172	. . .	tilting	2404/2571	. . . .	Wrapping/unwrapping arrangement
2404/173	. . .	bearing inside roller for surface to rotate	2404/26	. .	Particular arrangement of belt, or belts
2404/174	. . .	free bearing but slots or liquid support	2404/261	. . .	Arrangement of belts, or belt(s) / roller(s) facing each other for forming a transport nip
2404/18	. .	composed of several layers	2404/2611	. . . .	forming curved transport path
2404/181	. . .	with cavities or projections at least at one layer	2404/2612	. . . .	forming serpentine transport path
2404/182	. . .	with emery paper like coating (gripping, anti-slip)	2404/2613	. . . .	Means for changing the transport path, e.g. deforming, lengthening
2404/183	. . .	with outer layer helicoidally turned around shaft	2404/2614	. . . .	Means for engaging or disengaging belts into or out of contact with opposite belts, rollers or balls
2404/1831	. . . .	wire around shaft	2404/2615	. . . .	arranged on a movable frame, e.g. pivoting
2404/184	. . .	light weighted			
2404/185	. . .	easy deformable			
2404/186	. . .	with electro-conductive layer			
2404/187	. . .	with wear resistance			
2404/19	. .	Other features of rollers			
2404/191	. . .	magnetic			

2404/262	. . .	Arrangements of belts facing rollers	2404/412	. . .	made of circular segments
2404/263	. . .	Arrangements of belts facing balls	2404/4121	. . . .	moving relatively to each other during rotation
2404/264	. . .	Arrangement of side-by-side belts	2404/42	. .	Arrangement of pairs of drums
2404/2641	. . . .	on movable frame	2404/421	. . .	Bed arrangement, i.e. involving parallel and spaced drums, e.g. arranged horizontally for supporting a roll to be wound or unwound
2404/265	. . .	Arrangement of belt forming a deformable ring, e.g. driven in the nip of a roller pair	2404/4211	. . . .	with means for changing space between the drums
2404/267	. . .	Arrangement of belt(s) in edge contact with handled material	2404/4212	. . . .	with means for changing inclination of bed
2404/268	. . .	Arrangement of belts facing a transport surface, e.g. contact glass in copy machine	2404/4213	. . . .	the drums having different diameter
2404/2682	. . . .	means for engaging/disengaging with/from transport surface	2404/4214	. . . .	the drums having different deformability
2404/269	. . .	other arrangements	2404/422	. . .	Nip arrangement, i.e. parallel drums in pressure contact to each other
2404/2691	. . . .	Arrangement of successive belts forming a transport path	2404/43	. .	Rider roll construction
2404/2692	. . . .	Arrangement of belts in pressure contact with a roll of material	2404/431	. . .	involving several segments in axial direction
2404/2693	. . . .	Arrangement of belts on movable frame	2404/432	. . .	involving a plurality of parallel rider rolls
2404/27	. .	material used	2404/433	. . .	involving at least one rider roller following a spindle moved on a path, e.g. arcuate or circular path
2404/271	. . .	felt or wire mesh	2404/434	. . .	Driven rider roll arrangement
2404/28	. .	Other properties of belts	2404/50	. .	Surface of the elements in contact with the forwarded or guided material
2404/281	. . .	porous	2404/51	. .	Cross section, i.e. section perpendicular to the direction of displacement
2404/282	. . .	transparent	2404/511	. . .	convex
2404/283	. . .	magnetic	2404/512	. . .	concave
2404/284	. . .	Elasticity	2404/513	. . .	with limited number of active areas
2404/285	. . .	including readable marks, patterns, e.g. serving for control	2404/5131	. . . .	saw profile
2404/286	. . .	Hardness	2404/52	. .	other geometrical properties
2404/30	. .	Chains	2404/521	. . .	Reliefs
2404/31	. .	with auxiliary handling means	2404/5211	. . . .	only a part of the element in contact with the forwarded or guided material
2404/311	. . .	Blades, lugs, plates, paddles, fingers	2404/5212	. . . .	produced by embedding particles
2404/3111	. . . .	on two opposite chains or set of chains, i.e. having active handling section cooperating with and facing to each other	2404/52121	. . . . .	by subjecting to blast finishing
2404/312	. . .	Pockets, containers	2404/52122	. . . . .	by subjecting to knurling
2404/313	. . .	Bars, rods, e.g. bridging two chains running synchronously	2404/5213	. . . .	Geometric details
2404/3132	. . . .	arranged obliquely relatively to transport direction	2404/52131	. . . . .	Grooves
2404/314	. . .	Means penetrating in handled material, e.g. needle, pin	2404/52132	. . . . .	perforations
2404/3141	. . . .	Wicket pins	2404/5214	. . . .	extending in parallel to transport direction
2404/315	. . .	Details of arrangement of the auxiliary handling means on the chain(s)	2404/522	. . .	details of surface roughness and/or surface treatment
2404/32	. .	Saddle conveyor	2404/5221	. . . .	knurling
2404/321	. . .	with articulated pusher element, e.g. retractable	2404/53	. .	with particular mechanical, physical properties
2404/33	. .	Means for guiding chains	2404/531	. . .	particular coefficient of friction
2404/34	. .	Gripper bars bridging at least two chains running synchronously and parallelly	2404/5311	. . . .	Surface with different coefficients of friction
2404/341	. . .	Details of driving or return drum	2404/532	. . .	with particular durometer
2404/342	. . .	Details of guiding	2404/5321	. . . .	means for changing hardness
2404/3421	. . . .	in curved sections	2404/5322	. . . .	surface with different hardness
2404/343	. . .	Details of the bar bridging the chains	2404/533	. . .	with particular electric properties, e.g. dielectric material
2404/35	. .	Arrangement of chains facing each other for forming a transport nip	2404/5331	. . . .	with conductive material
2404/351	. . .	the nip being formed between elongate members bridging two chains running synchronously and in parallel	2404/539	. . .	other
2404/352	. . .	Details of guiding	2404/5391	. . . .	adhesive properties
2404/36	. .	Arrangement of side-by-side chains	2404/5392	. . . .	reflecting particular waves
2404/40	. .	Shafts, cylinders, drums, spindles	2404/54	. .	Surface including rotary elements, e.g. balls or rollers
2404/41	. .	Details of cross section profile	2404/55	. .	Built-up surface, e.g. arrangement for attaching the surface to the forwarding or guiding element
2404/411	. . .	Means for varying cross-section	2404/551	. . .	Non permanent attachment, i.e. allowing interchange ability of the surface
			2404/5511	. . . .	Non permanent attachment, i.e. allowing interchange ability

- 2404/5512 covering only a part of the surface
- 2404/5513 Strip-shaped built-up surface
- 2404/552 . . . permanent attachment
- 2404/5521 Coating
- 2404/56 . . Flexible surface
- 2404/561 . . . Bristles, brushes
- 2404/562 . . . involving inflatable elements
- 2404/563 . . . Elastic, supple built-up surface
- 2404/5631 Floating built-up surface
- 2404/60 . Other elements in face contact with handled material
- 2404/61 . . Longitudinally-extending strips, tubes, plates, or wires
- 2404/611 . . . arranged to form a channel
- 2404/6111 and shaped for curvilinear transport path
- 2404/6112 and displaceable for changing direction of transport
- 2404/612 . . . and shaped for curvilinear transport path
- 2404/62 . . Transversely-extending bars or tubes
- 2404/621 . . . with variable cross-section, e.g. inflatable
- 2404/622 . . . Details of longitudinal profile
- 2404/6221 Concave
- 2404/623 . . . gate arrangement
- 2404/63 . . Oscillating, pivoting around an axis parallel to face of material, e.g. diverting means
- 2404/631 . . . Juxtaposed diverting means with each an independant actuator
- 2404/632 . . . Wedge member
- 2404/633 . . . Sword member, i.e. member contacting the surface of material with an edge portion
- 2404/64 . . reciprocating perpendicularly to face of material, e.g. pushing means
- 2404/65 . . rotating around an axis parallel to face of material and perpendicular to transport direction, e.g. star wheel
- 2404/651 . . . having at least one element, e.g. stacker/inverter
- 2404/652 . . . having two elements diametrically opposed
- 2404/653 . . . having 3 or 4 elements
- 2404/654 . . . having more than 4 elements
- 2404/655 . . . Means for holding material on element
- 2404/6551 Suction means
- 2404/6552 peripheral means closing the area formed between the transport elements
- 2404/656 . . . Means for disengaging material from element
- 2404/657 . . . Means for varying the space between the elements
- 2404/658 . . . Means for introducing material on elements
- 2404/6581 in a direction parallel to the axis of rotation of elements
- 2404/6582 multiple, i.e. for introducing material selectively, alternatively or simultaneously at different angular positions at the periphery
- 2404/659 . . . particular arrangement
- 2404/6591 Pair of opposite elements rotating around parallel axis, synchronously in opposite direction
- 2404/66 . . rotating around an axis perpendicular to face of material
- 2404/661 . . . Paddle wheel
- 2404/662 . . . Disc shaped
- 2404/663 . . . Helical or worm shaped
- 2404/67 . . rotating around an axis parallel to face of material and parallel to transport direction
- 2404/68 . . reciprocating in transport direction
- 2404/69 . . Other means designated for special purpose
- 2404/691 . . . Guiding means extensible in material transport direction
- 2404/6911 by unwinding from storage section
- 2404/692 . . . Chute, e.g. inclined surface on which material slides by gravity
- 2404/6922 Shaft-like element channel
- 2404/693 . . . Retractable guiding means, i.e. between guiding and non guiding position
- 2404/694 . . . Non driven means for pressing the handled material on forwarding or guiding elements
- 2404/6942 in sliding contact with handled material
- 2404/695 . . . Paternoster type
- 2404/696 . . . Ball, sphere
- 2404/6961 Driving means
- 2404/70 . Other elements in edge contact with handled material, e.g. registering, orientating, guiding devices
- 2404/71 . . Adaptor, mask, i.e. restricting the working area of the parts for transporting or guiding the handled material
- 2404/72 . . Stops, gauge pins, e.g. stationary
- 2404/721 . . . adjustable
- 2404/722 . . . movable in operation
- 2404/723 . . . formed of forwarding means
- 2404/7231 by nip rollers in standby
- 2404/7232 by nip rollers in reversed rotation
- 2404/724 . . . formed of sensing means
- 2404/725 . . . retractable
- 2404/73 . . Means for sliding the handled material on a surface, e.g. pushers
- 2404/731 . . . moved in a path enclosing an area
- 2404/7312 by means of chains
- 2404/732 . . . in a direction perpendicular to a feeding / delivery direction
- 2404/733 . . . reciprocating
- 2404/74 . . Guiding means
- 2404/741 . . . movable in operation
- 2404/7412 retractable
- 2404/7414 pivotable
- 2404/742 . . . for guiding transversely
- 2404/743 . . . for guiding longitudinally
- 2404/7431 along a curved path
- 2405/00 Parts for holding the handled material**
- 2405/10 . Cassettes, holders, bins, decks, trays, supports or magazines for sheets stacked substantially horizontally
- 2405/11 . . Parts and details thereof
- 2405/111 . . . Bottom
- 2405/1111 with several surface portions forming an angle relatively to each other
- 2405/1112 with stepped surface portions
- 2405/1113 with surface portions curved in width-wise direction
- 2405/11131 forming a wavy profile
- 2405/1114 with surface portions curved in lengthwise direction
- 2405/11141 forming wavy profile

- 2405/1115 with surface inclined, e.g. in width-wise direction
- 2405/11151 with surface inclined upwardly in transport direction
- 2405/11152 with surface inclined downwardly in transport direction
- 2405/1116 with means for changing geometry
- 2405/11161 by at least a protruding portion arrangement
- 2405/11162 Front portion pivotable around an axis perpendicular to transport direction
- 2405/11163 Portion pivotable around an axis parallel to transport direction
- 2405/11164 Rear portion extensible in parallel to transport direction
- 2405/111643 involving extension members pivotable around an axis perpendicular to bottom surface
- 2405/111646 involving extension members pivotable around an axis parallel to bottom surface and perpendicular to transport direction
- 2405/1117 pivotable, e.g. around an axis perpendicular to transport direction, e.g. arranged at rear side of sheet support
- 2405/11171 around an axis parallel to transport direction
- 2405/11172 around an axis perpendicular to both transport direction and surface of sheets
- 2405/1118 Areas with particular friction properties, e.g. friction pad arrangement
- 2405/1119 Areas with particular deformation properties, e.g. flexible, elastic
- 2405/112 Rear, i.e. portion opposite to the feeding / delivering side
- 2405/1122 movable linearly, details therefor
- 2405/1124 pivotable, details therefor
- 2405/113 Front, i.e. portion adjacent to the feeding / delivering side
- 2405/1132 with stepped surface portions
- 2405/1134 movable, e.g. pivotable
- 2405/1136 inclined, i.e. forming an angle different from 90 with the bottom
- 2405/1138 curved
- 2405/114 Side, i.e. portion parallel to the feeding / delivering direction
- 2405/1142 Projections or the like in surface contact with handled material
- 2405/11425 retractable
- 2405/1144 extendible
- 2405/115 Cover
- 2405/12 Parts to be handled by user
- 2405/121 Locking means
- 2405/13 Elements acting on corner of sheet, e.g. snubber member
- 2405/14 Details of surface
- 2405/141 Reliefs, projections
- 2405/1412 Ribs extending in parallel to feeding/delivery direction
- 2405/1414 Hook and loop-type fastener
- 2405/142 relating to particular friction properties
- 2405/15 Large capacity supports arrangements
- 2405/20 Cassettes, holders, bins, decks, trays, supports or magazines for sheets stacked on edge
- 2405/21 Parts and details thereof
- 2405/211 bottom
- 2405/2111 with several surface portions forming an angle relatively to each other
- 2405/212 end supports
- 2405/214 sides
- 2405/22 pocket like holder
- 2405/221 details of bottom
- 2405/30 Other features of supports for sheets
- 2405/31 Supports for sheets fully removable from the handling machine, e.g. cassette
- 2405/311 and serving also as package
- 2405/312 Trolley, cart, i.e. support movable on the floor
- 2405/313 with integrated handling means, e.g. separating means
- 2405/32 Supports for sheets partially insertable - extractable, e.g. upon sliding movement, drawer
- 2405/321 Shutter type element, i.e. involving multiple interlinked support elements
- 2405/3211 with means to span a long self-supporting length
- 2405/322 with belt or curtain like support member, i.e. for avoiding relative movement between sheets and support during insertion or extraction
- 2405/323 Cantilever finger member, e.g. reciprocating in parallel to plane of handled material
- 2405/3231 Cantilever during insertion but supported on both sides of the pile upon full insertion
- 2405/324 between operative position and non operative position
- 2405/325 with integrated handling means, e.g. separating means
- 2405/33 Compartmented support
- 2405/331 Juxtaposed compartments
- 2405/3311 for storing articles horizontally or slightly inclined
- 2405/33115 Feed tray juxtaposed to discharge tray
- 2405/3312 for storing articles vertically or inclined (>45)
- 2405/33125 Feed tray juxtaposed to discharge tray
- 2405/332 Superposed compartments
- 2405/3321 Feed tray superposed to discharge tray
- 2405/3322 discharge tray superposed to feed tray
- 2405/34 Holder with cylindrical section
- 2405/35 Means for moving support
- 2405/351 shifting transversely to transport direction, e.g. for handling stepped piles
- 2405/352 in closed loop
- 2405/3521 rail guided means, e.g. without permanent interconnection
- 2405/353 vertically
- 2405/354 around an axis, e.g. horizontal
- 2405/36 Multiple support
- 2405/361 Movable from storage of support, e.g. stack of empty support
- 2405/40 Holders, supports for rolls
- 2405/42 Supports for rolls fully removable from the handling machine
- 2405/421 and serving also as package
- 2405/422 Trolley, cart, i.e. support movable on floor
- 2405/4221 for both full and empty (or partial) roll
- 2405/4222 Carts with full reels placed laterally one beside the other

- 2405/4223 Cart holding roll placed onto another cart
- 2405/4225 comprising means for rotating the roll around a vertical axis
- 2405/4226 Cart comprising splicing means
- 2405/4228 with air bearing, e.g. Luftkissen
- 2405/423 Overhead means, gantry
- 2405/43 Supports for rolls partially removable from the handling machine
- 2405/44 Supports for storing rolls
- 2405/441 Palette
- 2405/4412 combined with a frame for superposing several palettes
- 2405/4414 Rib-cage bin
- 2405/45 Shafts for winding/unwinding
- 2405/451 Radially extending end abutments
- 2405/452 Active holding elements, e.g. inflatable bladders
- 2405/4521 engaging the side portion of the web roll
- 2405/453 Passive holding elements, e.g. spring-biased pins
- 2405/454 Means for penetrating into the core material, e.g. for transmitting torque
- 2405/46 Grippers for bobbins, i.e. rolls
- 2405/461 center gripper (inside the core)
- 2405/462 outer gripper (on circumference)
- 2405/50 Gripping means
- 2405/51 oscillating in arcuate paths
- 2405/52 reciprocating
- 2405/53 Rotary gripping arms
- 2405/531 with relative movement of the arms relatively to the axis of rotation during rotation
- 2405/532 with means for changing the length of the arms during rotation
- 2405/54 Rotary gripping arms, i.e. integrated in a rotary element as for instance a cylinder, a disk or a turntable
- 2405/541 arranged on opposite and synchronised rotary element
- 2405/55 Rail guided gripping means running in closed loop, e.g. without permanent interconnecting means
- 2405/551 with permanent interconnection allowing variable spacing between the grippers
- 2405/552 with permanent interconnection and determined spacing between the grippers
- 2405/5521 details of interconnection, e.g. chain, link
- 2405/56 releasably connected to transporting means
- 2405/57 Details of the gripping parts
- 2405/571 Compliant material
- 2405/572 Retractable parts
- 2405/573 Pair of L-shaped reciprocating jaws
- 2405/574 laterally projecting from feeding direction
- 2405/575 Details of gripping surface
- 2405/58 Means for achieving gripping/releasing operation
- 2405/581 moving only one of the gripping parts towards the other
- 2405/5812 pivoting the movable gripping part towards the other part
- 2405/582 movable in transport direction, e.g. on a portion of the transport path of the gripping means
- 2405/583 Details of gripper orientation
- 2405/5831 Gripping mouth orientated in direction of gripper displacement
- 2405/5832 and varying its orientation after gripping
- 2405/584 Associated control means
- 2405/60 Penetrating means
- 2406/00 Means using fluid**
- 2406/10 made only for exhausting gaseous medium
- 2406/11 producing fluidised bed
- 2406/111 for handling material along a curved path, e.g. fluidised turning bar
- 2406/1115 pivoting around an axis perpendicular to the axis of the guided material
- 2406/112 for handling material along preferably rectilinear path, e.g. nozzle bed for web
- 2406/113 Details of the part distributing the air cushion
- 2406/1131 Porous material
- 2406/1132 Multiple nozzles arrangement
- 2406/11325 Adjustable impact angle
- 2406/12 producing gas blast
- 2406/121 Fan
- 2406/1211 Axial
- 2406/122 Nozzles
- 2406/1222 adjustable impact angle
- 2406/13 pressure arrangement for compensating weight of handled material
- 2406/131 in combination with rollers or drums
- 2406/14 with selectively operated air supply openings
- 2406/15 rotary pressurized means, e.g. cylinder, drum, shaft, spindle
- 2406/20 made only for liquid medium
- 2406/21 for spraying liquid
- 2406/211 nozzles
- 2406/30 Suction means
- 2406/31 Suction box; Suction chambers
- 2406/311 for accumulating a loop of handled material
- 2406/312 incorporating means for transporting the handled material against suction force
- 2406/3122 Rollers
- 2406/3124 Belts
- 2406/32 Suction belts
- 2406/321 integral in feed table
- 2406/322 Suction distributing means
- 2406/3221 for variable distribution in the direction of transport
- 2406/3222 switchable suction elements
- 2406/3223 details of the openings in the belt, e.g. shape, distribution
- 2406/32231 belt with alternated perforated and non perforated sections in transport direction
- 2406/323 Overhead suction belt, i.e. holding material against gravity
- 2406/33 Rotary suction means, e.g. roller, cylinder or drum
- 2406/331 arranged for rotating while moving along material to be handled, e.g. rolling on material
- 2406/3312 arranged for planetary movement on rotary support means
- 2406/3314 arranged for linear movement, e.g. on reciprocating support
- 2406/332 Details on suction openings
- 2406/333 rotating around an axis perpendicular to the surface of handled material, e.g. disk
- 2406/334 arranged on movable frame
- 2406/34 Suction grippers

2406/341	. . .	being oscillated in arcuate paths
2406/342	. . .	being reciprocated in a rectilinear path
2406/343	. . .	Details of sucking member
2406/3432	. . . .	Elongated sucking member; Sucking bar
2406/344	. . .	circulating in closed loop
2406/345	. . .	Rotary suction grippers
2406/3452	. . . .	performing reciprocating movement during rotation
2406/34525	. . . . .	parallelly to the axis of rotation
2406/3454	. . . .	performing oscillating movement during rotation
2406/35	. .	Other elements with suction surface, e.g. plate or wall
2406/351	. . .	facing the surface of the handled material
2406/3511	. . . .	with nozzles oriented obliquely towards the material
2406/352	. . .	facing the edge of the handled material
2406/36	. .	Means for producing, distributing or controlling suction
2406/361	. . .	distributing vacuum from stationary element to movable element
2406/3612	. . . .	involving a shoe in sliding contact with flanges of a rotating element
2406/3614	. . . .	involving a shoe in sliding contact with an inner section of the periphery of a rotating element
2406/362	. . .	adjusting or controlling distribution of vacuum transversally to the transport direction, e.g. according to the width of material
2406/3622	. . . .	adjusting or controlling distribution of vacuum in the transport direction
2406/363	. . .	adjusting or controlling distribution of vacuum for a plurality of suction means
2406/3632	. . . .	means for auto adjustment of vacuum distribution according to the size of handled material
2406/364	. . .	simultaneously blowing and sucking
2406/365	. . .	selectively blowing or sucking
2406/366	. . .	producing vacuum
2406/3661	. . . .	Injectors
2406/3662	. . . .	Fans
2406/36625	. . . . .	cross flow, transverse
2406/3663	. . . .	Pumps
2406/40	. .	Fluid power drive; Fluid supply elements
2406/41	. .	Valves
2406/411	. . .	Spool or slide valves
2406/412	. . .	Rotary valves
2406/413	. . .	Seat valves
2406/414	. . .	Servo valves
2406/415	. . .	Throttle valves
2406/416	. . .	Check valves
2406/417	. . .	Bleed valves
2406/418	. . .	Diaphragm valves
2406/42	. .	Distribution circuits
2406/421	. . .	with means for changing the temperature of the fluid
2406/4212	. . . .	for cooling fluid
2406/422	. . .	Air throttling devices
2406/423	. . .	distributing fluid from stationary elements to movable element
2407/00	Other means designed for special purposes	
2407/10	. .	Safety means, e.g. for preventing injury to operator
2407/11	. .	Means preventing illegal operation
2407/20	. .	for manual intervention of operator
2407/21	. .	Manual feeding
2407/22	. .	means for observing the handled material during its handling
2407/30	. .	Means for preventing damage of handled material
2407/31	. .	Controlling atmosphere confining the handled material
2407/311	. . .	involving humidity control means
2407/32	. . .	Protective cover
2407/33	. .	Means for controlling access to the area confining the handled material
2407/40	. .	Means for adding commercial value
2407/41	. .	Sound producing means
2407/42	. .	Animation displaying means
2407/43	. .	Optic means, e.g. transparent body
2407/431	. . .	Built up optic means, e.g. magnifying glass
2407/44	. .	Static information displaying means, e.g. logo
2407/50	. .	Means for protecting parts of handling machine
2407/51	. .	Means for making dustproof
2408/00	Specific machines	
2408/10	. .	for handling sheet(s)
2408/11	. .	Sorters or machines for sorting articles
2408/111	. . .	with stationary location in space of the bins and a diverter per bin
2408/112	. . .	with stationary location in space of the bins and in-feed member movable from bin to bin
2408/1121	. . . .	pivoting in-feed member
2408/113	. . .	with variable location in space of the bins relative to a stationary in-feed path
2408/1131	. . . .	and variable bin capacity
2408/114	. . .	means for shifting articles contained in at least one bin, e.g. for displacing the articles towards processing means as stapler, perforator
2408/1141	. . . .	performing alignment in the totality or a large number of bins at a time
2408/1142	. . . .	performing alignment in one bin or a limited number of bins at a time
2408/1143	. . . .	performing extraction of the sheets from the bin
2408/1144	. . . .	combination of shifting means for performing shifting in several directions
2408/116	. . .	non sort tray arrangement, i.e. high capacity tray for collecting multiple set
2408/1162	. . . .	above sorting trays
2408/1164	. . . .	beneath sorting trays
2408/118	. . .	Combination of several sorting modules
2408/12	. .	stapler arrangement
2408/121	. . .	stationary stapler
2408/122	. . .	movable stapler
2408/1221	. . . .	movable from bin to bin
2408/1222	. . . .	movable transversely to direction of transport
2408/1223	. . . .	reciprocating relatively to the bin
2408/123	. . .	means for replenishing stapler with staples
2408/124	. . .	means for changing size of staple
2408/125	. . .	head unit separate from anvil unit
2408/13	. .	Wall or kiosk dispenser, i.e. for positively handling or holding material until withdrawal by user
2408/20	. .	for handling web(s)
2408/21	. .	Accumulators
2408/211	. . .	Coil type accumulator

2408/212	. . .	of zigzag-type	2511/00	Dimension; Position; Number; Identification; Occurrence
2408/213	. . .	with several cascaded loops	2511/10	. Size; Dimension
2408/214	. . .	loop hanger accumulator	2511/11	. Length
2408/215	. . .	supported by vacuum or blown air	2511/112	. . . of a loop, e.g. a free loop or a loop of dancer rollers
2408/216	. . .	roller with accumulated material wound around it (scrap roll)	2511/114	. . . Remaining length of web roll
2408/217	. . .	of rollers type, e.g. with at least one fixed and one movable roller	2511/12	. Width
2408/2171	. . . .	the position of the movable roller(s), i.e. the web loop, being positively actuated	2511/13	. Thickness
2408/2172	. . . .	several cascaded loops of rollers	2511/135	. Surface texture; e.g. roughness
2408/2173	. . . .	the rollers wrapped by the web being rotationally driven otherwise than by web	2511/14	. Diameter
2408/2174	. . . .	belt or similar device for carrying web through the accumulator	2511/142	. . . of roll or package
2408/22	. .	Splicing machines	2511/15	. Height
2408/221	. . .	features of splicing unit	2511/152	. . . of stack
2408/2211	. . . .	splicing unit located above several web rolls arranged parallel to each other	2511/16	. Irregularities
2408/23	. .	Winding machines	2511/162	. . . Protuberances or enlargements on the surface
2408/231	. . .	Turret winders	2511/164	. . . Cavities, recesses or holes in the surface
2408/2312	. . . .	with bedroll, i.e. very big roll used as winding roller	2511/166	. . . relative to diameter, eccentricity or circularity
2408/23121	. . . . .	and transfer pad (to attach leading edge to new core)	2511/17	. Deformation
2408/23122	. . . . .	with integrated core supply	2511/172	. . . Elongation; Stretching
2408/2313	. . . .	with plurality of reel supporting or back-up rollers travelling around turret axis	2511/18	. relative to handling machine
2408/2315	. . . .	specified by number of arms	2511/182	. . . Capacity of area accommodating handled material
2408/23152	. . . . .	with two arms	2511/20	. Location in space
2408/23155	. . . . .	with three arms	2511/21	. Angle
2408/23157	. . . . .	with more than three arms	2511/212	. . . Rotary position
2408/232	. . .	Winding beds consisting of two rollers	2511/214	. . . Inclination
2408/2321	. . . .	with winding bed supplied with vacuum or compressed air	2511/216	. . . Orientation, e.g. with respect to direction of movement
2408/2324	. . . .	The winding rollers having different properties	2511/22	. Distance
2408/2326	. . . .	at least one of the winding rollers being movable	2511/222	. . . Stroke
2408/233	. . .	Central support turret	2511/224	. . . Nip between rollers, between belts or between rollers and belts
2408/234	. . .	Hand-held winding device	2511/23	. Coordinates
2408/235	. . .	Cradles	2511/232	. . . in two dimensions
2408/236	. . .	Pope-winders with first winding on an arc of circle and secondary winding along rails	2511/234	. . . in three dimensions
2408/2362	. . . .	with two secondary winding spools, e.g. on separate carriages	2511/24	. Irregularities
2408/2364	. . . .	with additional element for facilitating web roll change	2511/242	. . . in orientation, e.g. skew
2408/237	. . .	with substantially continuous horizontal movement of roll support, e.g. Metso-Type	2511/25	. Sequence
2408/238	. . .	Modified Pope-winders with secondary winding on a arc of a circle	2511/30	. Number
2408/24	. .	unwinding machines	2511/31	. . Numeric flow, i.e. number per unit of time
2408/241	. . .	Turret	2511/32	. . of windings
2408/2411	. . . .	with protruding guiding roll or surface between unwound rolls on mobile assembly	2511/33	. . of rotations
2408/2412	. . . .	details of indexing drive or mechanism	2511/34	. Credit
2408/2415	. . . .	specified by number of arms	2511/40	. Identification
2408/24153	. . . . .	with two arms	2511/411	. . of colour
2408/24156	. . . . .	with three arms	2511/412	. . of user, e.g. user code
2408/40	. .	Machines for test or simulation purposes	2511/413	. . of image
			2511/414	. . of mode of operation
			2511/415	. . of job
			2511/416	. . of material
			2511/417	. . of state of the machine
			2511/50	. Occurrence
			2511/51	. Presence
			2511/511	. . . of user
			2511/512	. . . Marks; Patterns
			2511/5125	. . . . Marks invisible for the human eye
			2511/514	. . . Particular portion of element
			2511/515	. . Absence (error, fault B65H 2511/52)
			2511/516	. . . Marks; Patterns
			2511/518	. . . Particular portion of element

- 2511/52 . . Error; Fault ([dimensional irregularities B65H 2511/16](#); [irregularities in location B65H 2511/24](#); [speed irregularities B65H 2513/106](#))
- 2511/521 . . . Presence of foreign object or undesirable material, i.e. material of another nature than the handled material
- 2511/522 . . . Folds or misfolding
- 2511/524 . . . Multiple articles, e.g. double feed
- 2511/526 . . . Breakdown
- 2511/528 . . . Jam
- 2511/529 . . . number thereof, frequency of occurrence
- 2513/00 Dynamic entities; Timing aspect**
- 2513/10 . Speed
- 2513/102 . . Reference
- 2513/104 . . Relative speed
- 2513/106 . . Variation; Irregularities
- 2513/108 . . Passage from one speed to another speed
- 2513/11 . . angular
- 2513/112 . . . of the yarn balloon
- 2513/114 . . . Converting or comparing angular speed to linear speed, e.g. when detecting remaining length of web roll
- 2513/20 . Acceleration or deceleration
- 2513/21 . . Acceleration
- 2513/212 . . . angular
- 2513/22 . . Deceleration
- 2513/222 . . . angular
- 2513/30 . Kinetic energy
- 2513/40 . Movement
- 2513/41 . . Direction of movement
- 2513/412 . . . Direction of rotation of motor powering the handling device
- 2513/42 . . Route, path
- 2513/50 . Timing
- 2513/51 . . Sequence of process
- 2513/511 . . . relating to a particular timing for sensing a variable
- 2513/512 . . Stopping
- 2513/514 . . Starting
- 2513/52 . . Age; Life time
- 2513/53 . . duration of event
- 2513/54 . . Chronology of event
- 2515/00 Physical entities not provided for in groups [B65H 2511/00](#) or [B65H 2513/00](#)**
- 2515/10 . Mass; Weight
- 2515/11 . . Mass flow rate
- 2515/112 . . Specific weight
- 2515/114 . . Denier
- 2515/116 . . Inertia
- 2515/12 . Density
- 2515/20 . Volume
- 2515/21 . . Volume flow rate
- 2515/212 . . . of air
- 2515/30 . Force; Stress
- 2515/31 . . Tensile force
- 2515/312 . . . in direction perpendicular to transport direction
- 2515/314 . . . Tension profile, i.e. distribution of tension, e.g. across the material feeding direction or along diameter of web roll
- 2515/32 . . Torque; Moment
- 2515/322 . . . Braking torque
- 2515/34 . . Pressure
- 2515/342 . . . Fluid pressure
- 2515/37 . . Elasticity modulus
- 2515/40 . Temperature
- 2515/41 . . Heat conductivity
- 2515/50 . Vibrations; Oscillations
- 2515/60 . Optical characteristics, e.g. colour, light
- 2515/70 . Electrical characteristics
- 2515/702 . . Voltage
- 2515/704 . . Current
- 2515/706 . . Power
- 2515/708 . . Resistance
- 2515/71 . . Magnetic properties
- 2515/712 . . Capacitance
- 2515/714 . . Inductance
- 2515/716 . . Static electricity
- 2515/80 . Miscellaneous
- 2515/805 . . Humidity
- 2515/81 . . Rigidity; Stiffness; Elasticity
- 2515/815 . . Slip
- 2515/82 . . Sound; Noise
- 2515/83 . . Environmental conditions, i.e. in the area confining the handled material or the handling machine
- 2515/84 . . Quality
- 2515/842 . . . Condition, e.g. degree of wear, presence of wrinkles
- 2519/00 Chemical characteristics**
- 2551/00 Means for control to be used by operator; User interfaces**
- 2551/10 . Command input means
- 2551/11 . . Slidable members
- 2551/12 . . Rotating members
- 2551/13 . . Remote control devices
- 2551/132 . . . Speech recognition
- 2551/14 . . Switches; Selectors ([contact switches B65H 2553/25](#))
- 2551/15 . . Push buttons; Keyboards
- 2551/152 . . Pedals
- 2551/16 . . Levers; Joysticks
- 2551/18 . . Graphical interactive displays; Mouses; Touchscreens
- 2551/185 . . Voice actuated input means
- 2551/20 . Display means; Information output means
- 2551/21 . . Monitors; Video displays
- 2551/212 . . . Liquid crystal display [LCD]
- 2551/22 . . Numerical displays
- 2551/23 . . Analog displays
- 2551/24 . . Voice generating means
- 2551/25 . . Printing or plotting means
- 2551/26 . . for input variables
- 2551/27 . . for output variables
- 2551/28 . . Sound generating means
- 2551/29 . . Means displaying permanently a particular information, e.g. mark, ruler
- 2553/00 Means for sensing, detecting or otherwise used for control**
- 2553/10 . using fluid
- 2553/11 . . pneumatic

2553/12	. . hydraulic	2555/26	. . Stepper motors
2553/20	. using electric elements	2555/27	. . piezoelectric
2553/21	. . Variable resistances, rheostats or potentiometers	2555/30	. Multi-axis
2553/212	. . . Strain gauges	2555/31	. . Robots
2553/22	. . Magnetic detectors, e.g. Hall detectors	2555/32	. . Automatic guided vehicle system
2553/23	. . Capacitive detectors	2555/40	. Powering means
2553/232	. . . Electrodes arrangement	2555/41	. Electrostatic forces
2553/24	. . Inductive detectors	2555/42	. . Magnets
2553/25	. . Contact switches	2557/00	Means for control not provided for in groups
2553/26	. . Piëzo-electric sensors		B65H 2551/00 - B65H 2555/00
2553/27	. . Electro mechanical thermal sensors, e.g. thermocouples, pyroelectric sensors, temperature sensitive sensor	2557/10	. for signal transmission
2553/30	. using acoustic or ultrasonic elements	2557/11	. . wireless (input by remote control devices B65H 2551/13)
2553/40	. using optical, e.g. photographic, elements	2557/112	. . . using sound
2553/41	. . Photoelectric detectors	2557/12	. . Network
2553/412	. . . in barrier arrangements, i.e. emitter facing a receptor element	2557/13	. . Data carrier, e.g. chip, transponder, magnetic strip
2553/414	. . . involving receptor receiving light reflected by a reflecting surface and emitted by a separate emitter	2557/20	. Calculating means; Controlling methods
2553/416	. . . Array arrangement, i.e. row of emitters or detectors	2557/22	. . Fuzzy logic
2553/42	. . Cameras	2557/23	. . Recording or storing data
2553/43	. . Bar code reader	2557/24	. . Calculating methods; Mathematic models
2553/44	. . involving light guide	2557/242	. . . involving a particular data profile or curve
2553/442	. . . optical fibres	2557/2423	. . . . involving an average value
2553/45	. . Scanning means	2557/2426	. . . . involving a standard deviation
2553/46	. . Illumination arrangement	2557/25	. . Modular control, i.e. systems which work independently or partially dependently on other systems
2553/51	. Encoder, e.g. rotary	2557/26	. . with key characteristics based on open loop control
2553/512	. . linear	2557/262	. . with key characteristics based on feed forward control
2553/52	. RFID sensor	2557/264	. . with key characteristics based on closed loop control
2553/60	. Details of intermediate means between the sensing means and the element to be sensed	2557/2644	. . . characterised by PID control
2553/61	. . Mechanical means	2557/266	. . characterised by function other than PID for the transformation of input values to output values, e.g. mathematical
2553/612	. . . Contact arms; Levers; Antennas	2557/30	. Control systems architecture or components, e.g. electronic or pneumatic modules; Details thereof
2553/614	. . . Impact generating means	2557/31	. . for converting, e.g. A/D converters
2553/62	. . involving vibrating element	2557/32	. . for modulating frequency or amplitude
2553/80	. Arrangement of the sensing means	2557/33	. . for digital control, e.g. for generating, counting or comparing pulses
2553/81	. . on a movable element	2557/34	. . for analog control, e.g. proportional, integral or differentiated
2553/82	. . with regard to the direction of transport of the handled material	2557/35	. . for timing
2553/822	. . . Multiple sensors in a direction perpendicular to the direction of transport of the handled material	2557/352	. . . Clocks; Timers
2553/83	. . selectively positionable in operative state	2557/354	. . . Sequence controllers
2555/00	Actuating means	2557/36	. . Stroboscopes
2555/10	. linear	2557/37	. . for fluid control
2555/11	. . pneumatic	2557/371	. . . Rotary valve
2555/112	. . . Inflatable element	2557/38	. . for neural adaptive control
2555/12	. . hydraulic	2557/50	. Use of particular electromagnetic waves, e.g. light, radiowaves or microwaves
2555/13	. . magnetic, e.g. linear solenoids	2557/51	. . Laser
2555/132	. . . Linear induction motors	2557/512	. . infra-red
2555/134	. . . Linear stepper motor	2557/514	. . ultraviolet
2555/14	. . piezoelectric	2557/516	. . Polarized light
2555/20	. angular	2557/518	. . X-ray
2555/21	. . pneumatic	2557/52	. . Particle radiation
2555/22	. . hydraulic	2557/60	. Details of processes or procedures
2555/23	. . magnetic, e.g. rotary solenoids	2557/61	. . for calibrating
2555/24	. . Servomotors		
2555/25	. . D.C. motors		
2555/252	. . . in derivation; Shunt motors		

- 2557/62 . . for web tracking, i.e. retrieving a certain position of a web
- 2557/63 . . Optimisation, self-adjustment, self-learning processes or procedures, e.g. during start-up
- 2557/64 . . for detecting type or properties of handled material
- 2557/65 . . for diagnosing
- 2557/652 . . . need of maintenance
- 2601/00 Problem to be solved or advantage achieved**
- 2601/10 . Ensuring correct operation
- 2601/11 . . Clearing faulty handling, e.g. jams
- 2601/111 . . . Clearing uncorrect discharge of sheet
- 2601/12 . . Compensating; Taking-up
- 2601/121 . . . Wear
- 2601/122 . . . Play
- 2601/123 . . . Defaults of handled material
- 2601/1231 . . . relative to geometry, shape of handled material
- 2601/124 . . . Unbalance
- 2601/125 . . . Vibration ([B65H 2601/524 takes precedence](#))
- 2601/20 . Avoiding or preventing undesirable effects
- 2601/21 . . Dynamic air effects
- 2601/211 . . . Entrapping air in or under the material
- 2601/212 . . . Environmental change in the area confining the handled material
- 2601/22 . . Gravity effects, e.g. effect of weight of handled material
- 2601/221 . . . Centrifugal force effect
- 2601/24 . . Deformation of part of handling machine
- 2601/25 . . Damages to handled material
- 2601/251 . . . Smearing
- 2601/252 . . . Collapsing, e.g. of piles
- 2601/2525 . . . Collisions
- 2601/253 . . . to particular parts of material
- 2601/2531 Edges
- 2601/2532 Surface
- 2601/254 . . . Permanent deformation
- 2601/255 . . . Jam
- 2601/26 . . Damages to handling machine
- 2601/261 . . . Clogging
- 2601/2611 Soiling
- 2601/2612 Pollution
- 2601/2613 Oxidation
- 2601/27 . . Other problems
- 2601/271 . . . Over stacking
- 2601/272 . . . Skewing of handled material during handling
- 2601/273 . . . Adhering of handled material to another handled material or to part of the handling machine
- 2601/30 . Facilitating or easing
- 2601/31 . . entities relating to handled material
- 2601/32 . . entities relating to handling machine
- 2601/321 . . . Access
- 2601/322 . . . Replenishing
- 2601/3222 of binding material, e.g. needles
- 2601/324 . . . Removability or inter-changeability of machine parts, e.g. for maintenance
- 2601/325 . . . Manual handling of handled material
- 2601/326 . . . Manual handling of handling machine
- 2601/40 . Increasing or maximizing
- 2601/41 . . entities relating to handled material
- 2601/42 . . entities relating to the handling machine
- 2601/421 . . . Capacity
- 2601/422 . . . Versatility
- 2601/423 . . . Life span
- 2601/50 . Diminishing, minimizing or reducing
- 2601/51 . . entities relating to handled material
- 2601/511 . . . Waste of handled material
- 2601/52 . . entities relating to handling machine
- 2601/521 . . . Noise
- 2601/522 . . . Wear of friction surface
- 2601/523 . . . Required space
- 2601/524 . . . Vibration
- 2601/5242 by using mass damper
- 2601/5244 by using electro-rheological fluid [ERF]
- 2601/525 . . . Cost of application or use, e.g. energy, consumable
- 2601/60 . Miscellaneous
- 2601/61 . . Refurbishing; Renewing the handling machine; Upgrading modifying functions of the handling machine
- 2701/00 Handled material; Storage means**
- 2701/10 . Handled articles or webs
- 2701/11 . . Dimensional aspect of article or web
- 2701/111 . . . Plane geometry, contour
- 2701/1111 Geometric shape
- 2701/11112 disk
- 2701/11114 triangle
- 2701/1113 irregular shape
- 2701/11132 tabbed sheet
- 2701/112 . . . Section geometry
- 2701/1121 shape
- 2701/11212 U-shape
- 2701/11214 tube
- 2701/11216 circular segment
- 2701/11218 corrugations
- 2701/1123 Folded article or web
- 2701/11231 Fan-folded material or zig-zag or leporello
- 2701/11232 Z-folded
- 2701/11234 C-folded
- 2701/11238 Asymmetric folded material
- 2701/1125 variable thickness
- 2701/11252 thicker edges, e.g. reinforced
- 2701/11254 Splice
- 2701/113 . . . Size
- 2701/1131 of sheets
- 2701/11312 large formats, i.e. above A3
- 2701/1133 of webs
- 2701/11332 strip, tape, narrow web
- 2701/12 . . Surface aspects
- 2701/121 . . . Perforations
- 2701/1211 arranged linearly
- 2701/12112 transversally
- 2701/1212 where perforations serve for handling
- 2701/122 . . . Projecting portions
- 2701/1221 regularly distributed
- 2701/12212 ball relief
- 2701/12213 polygonal humps relief
- 2701/123 . . . Hollow portions
- 2701/1231 grooves
- 2701/12312 linear, e.g. for further folding
- 2701/124 . . . Patterns, marks, printed information

2701/1241	. . . .	register marks	2701/1824	. . . .	Web material folded in zig-zag form
2701/12411	. . . .	line	2701/18242	. . . .	Juxtaposed sets
2701/1242	. . . .	printed information	2701/1826	. . . .	Arrangement of sheets
2701/12422	. . . .	codes or the like which can be used for further processing, e.g. relative to consumed or still available material	2701/18262	. . . .	Ordered set of articles forming one batch
			2701/18263	. . . .	wherein each article is offset from its neighbour in the pile
2701/1243	. . . .	hologram	2701/18264	. . . .	Pile of alternate articles of different properties, e.g. pile of working sheets with intermediate sheet between each working sheet
2701/1244	. . . .	RFID [Radio Frequency Identification Data] transponder	2701/18265	. . . .	Ordered set of batches of articles
2701/125	. . .	Particular treatment	2701/18266	. . . .	wherein the batches are offset from each other, e.g. stepped pile
2701/1252	. . . .	for facilitating sliding contact	2701/18267	. . . .	wherein the batches are separated by separator elements in the pile
2701/13	. .	Parts concerned of the handled material	2701/18268	. . . .	Unordered set of articles
2701/131	. . .	Edges	2701/18269	. . . .	Marker arrangement
2701/1311	. . . .	leading edge	2701/1827	. . . .	Interleaf layers
2701/1313	. . . .	trailing edge	2701/18271	. . . .	of folded sheet material
2701/1315	. . . .	side edges, i.e. regarded in context of transport	2701/18272	. . . .	Z-folded
2701/132	. . .	Side portions	2701/18274	. . . .	W-folded
2701/1321	. . . .	of folded article or web	2701/1828	. . . .	Parts concerned of piled package
2701/13212	. . . .	Fold, spine portion of folded article	2701/18282	. . . .	Sides
2701/13214	. . . .	Side opposite to spine portion of folded article	2701/1829	. . . .	Bound, bundled or stapled stacks or packages
2701/1322	. . . .	corner	2701/18292	. . . .	Stapled sets of sheets
2701/139	. . .	Piled package	2701/184	. . .	Wound packages
2701/17	. .	Nature of material	2701/1842	. . . .	of webs
2701/171	. . .	Physical features of handled article or web	2701/18422	. . . .	Coreless
2701/1712	. . . .	Transparent	2701/1844	. . . .	Parts concerned
2701/1714	. . . .	Magnetic	2701/18442	. . . .	Core
2701/1716	. . . .	Elastic	2701/18444	. . . .	Helically wound material
2701/1718	. . . .	Porous or permeable	2701/1846	. . . .	Parts concerned
2701/1719	. . . .	Photosensitive, e.g. exposure, photographic or phosphor	2701/1848	. . . .	Dimensional aspect
2701/172	. . .	Composite material	2701/18482	. . . .	Proportion
2701/1722	. . . .	including layer with adhesive properties	2701/18483	. . . .	Diameter much larger than width, e.g. audio/video tape bobbin
2701/17222	. . . .	Encapsulated adhesive	2701/18484	. . . .	Diameter substantially equal to width, e.g. toilet paper roll
2701/17224	. . . .	distributed only on a part of the surface of the material	2701/18485	. . . .	Diameter much smaller than width
2701/1724	. . . .	including layer with magnetic properties	2701/18486	. . . .	Non-cylindrical form, e.g. flat bobbin
2701/1726	. . . .	including detachable components	2701/1849	. . . .	in cartridge or similar packaging device
2701/17262	. . . .	distributed only on a part of the surface of the material	2701/186	. . .	Several articles or webs processed together
2701/1727	. . . .	including layer with anti-adhesive properties	2701/1862	. . . .	Rolls and sheets
2701/1728	. . . .	Liquid soaked material	2701/1864	. . . .	Superposed webs
2701/173	. . .	Metal	2701/19	. .	Specific article or web
2701/1732	. . . .	Aluminium	2701/191	. . .	Bags, sachets and pouches or the like
2701/174	. . .	Textile, fibre (for filamentary material B65H 2701/31 and subgroups)	2701/1912	. . .	Banknotes, bills and cheques or the like
2701/1742	. . . .	Fibreglass	2701/1914	. . .	Cards, e.g. telephone, credit and identity cards
2701/175	. . .	Plastic	2701/1916	. . .	Envelopes and articles of mail
2701/1752	. . . .	Polymer film	2701/1918	. . .	Insert between web or strip layer, e.g. wire
2701/176	. . .	Cardboard	2701/192	. . .	Labels (carrying webs or liners B65H 2701/194)
2701/1762	. . . .	Corrugated	2701/1922	. . .	for covering surfaces such as carpets, roads, roofs or walls
2701/1764	. . . .	Cut-out, single-layer, e.g. flat blanks for boxes	2701/1924	. . .	Napkins or tissues, e.g. dressings, toweling, serviettes, kitchen paper and compresses
2701/1766	. . . .	Cut-out, multi-layer, e.g. folded blanks or boxes	2701/1926	. . .	Opened booklet
2701/1768	. . . .	Book covers and the like	2701/1928	. . .	Printing plate
2701/177	. . .	Fibrous or compressible material	2701/193	. . .	Sample, e.g. laminate
2701/178	. . .	Hide, leather or skin	2701/1932	. . .	Signatures, folded printed matter, newspapers or parts thereof and books
2701/18	. .	Form of handled article or web			
2701/182	. . .	Piled package			
2701/1822	. . . .	Juxtaposed stacks			

2701/1934	. . .	Sticky notes, e.g. sheets partially coated with temporary adhesive	2701/38	. .	Thread sheet, e.g. sheet of parallel yarns or wires
2701/1936	. . .	Tickets or coupons	2701/39	. .	Other types of filamentary materials or special applications
2701/1938	. . .	Veneer sheet	2701/391	. . .	Spiral coiled hoses or cords
2701/194	. . .	Web supporting regularly spaced adhesive articles, e.g. labels, rubber articles, labels or stamps	2701/3911	. . .	Chains
2701/19402	. . . .	Glue dots, arranged individually or in patterns	2701/3912	. . .	Fences made of wire
2701/19404	. . . .	Supporting second web with articles as precut portions	2701/3913	. . .	Extruded profiled strands
2701/1942	. . .	Web supporting regularly spaced non-adhesive articles	2701/3914	. . .	Irregular cross section, i.e. not circular
2701/1944	. . .	Wrapping or packing material	2701/3915	. . .	Strings of lights, e.g. Christmas lighting
2701/20	. .	Features of handled material other than dimensional aspect, use, or nature	2701/3916	. . .	Inserts between layers of wire, hose or yarn
2701/30	. .	Handled filamentary material	2701/3917	. . .	Faired cables
2701/31	. .	Textiles threads or artificial strands of filaments	2701/3918	. . .	Surgical sutures
2701/311	. . .	Slivers	2701/3919	. . .	USB, earphones, audio or video cables, e.g. for connecting small electronic devices such as MP3 players or mobile telephones
2701/312	. . .	Fibreglass strands	2701/50	. .	Storage means for webs, tapes, or filamentary material
2701/3122	. . . .	extruded from spinnerets	2701/51	. .	Cores or reels characterised by the material
2701/313	. . .	Synthetic polymer threads	2701/511	. . .	essentially made of sheet material
2701/3132	. . . .	extruded from spinnerets	2701/5112	. . . .	Paper or plastic sheet material
2701/314	. . .	Carbon fibres	2701/5114	. . . .	Metal sheets
2701/319	. . .	Elastic threads	2701/5116	. . . .	Wood veneer
2701/32	. .	Optical fibres or optical cables	2701/5118	. . . .	Textile material
2701/33	. .	Hollow or hose-like material	2701/512	. . .	moulded
2701/331	. . .	leaving an extruder	2701/5122	. . . .	Plastics
2701/332	. . .	Flattened hoses	2701/5124	. . . .	Metals
2701/333	. . .	Hoses for drip irrigation	2701/5126	. . . .	Particles of fibres, e.g. lignocelluloses material
2701/34	. .	electric cords or electric power cables	2701/5128	. . . .	Vitreous material
2701/341	. . .	in a manufacturing process	2701/513	. . .	assembled mainly from rigid elements of the same kind
2701/35	. .	Ropes, lines	2701/5132	. . . .	Wooden planks or similar material
2701/351	. . .	in a manufacturing process	2701/5134	. . . .	Metal elements
2701/352	. . .	Clotheslines	2701/51342	. . . . .	Moulded metal elements
2701/353	. . .	Construction lines, e.g. masonry line or for gardening	2701/51344	. . . . .	Metal profiles
2701/354	. . .	Cutting lines, e.g. for grass cutting	2701/5136	. . . .	Moulded plastic elements
2701/355	. . .	Fishlines	2701/514	. . .	Elastic elements
2701/356	. . .	Kitelines	2701/515	. . .	assembled from parts made of different materials
2701/357	. . .	Marking strings, e.g. pre-inked lines	2701/5152	. . . .	End flanges and barrel of different material
2701/358	. . .	Strings for guiding plants	2701/51522	. . . . .	Wooden barrel
2701/36	. .	Wires	2701/51524	. . . . .	Paperboard barrel
2701/361	. . .	Semiconductor bonding wires	2701/51526	. . . . .	Metal barrel
2701/362	. . .	Tying wires, e.g. for tying concrete reinforcement rods	2701/51528	. . . . .	Plastic barrel
2701/363	. . .	Barbed wires	2701/52	. .	Integration of elements inside the core or reel
2701/364	. . .	Wires used in fences	2701/522	. . .	Chemical agents
2701/365	. . .	Aerial wires, e.g. for wireless telegraph installation on aircraft	2701/524	. . .	Weights
2701/366	. . .	Pintle for seaming paper machine fabrics	2701/526	. . .	Magnets
2701/37	. .	Tapes	2701/528	. . .	Heating or cooling devices
2701/371	. . .	Curved tapes, e.g. "Spreizband"	2701/53	. .	Adaptations of cores or reels for special purposes
2701/372	. . .	Ink ribbons	2701/532	. . .	Tearable or frangible cores or reels
2701/373	. . .	Spring steel	2701/533	. . .	Storage compartments for accessories
2701/374	. . .	Warning bands, e.g. police warning tapes	2701/534	. . .	Stackable or interlockable reels or parts of reels
2701/375	. . .	Strapping tapes	2701/535	. . .	Dimensional aspect, e.g. non-cylindrical cores
2701/376	. . .	Electrician's fish tapes	2701/536	. . .	Arrangements for protecting connectors attached to the wound material
2701/377	. . .	Adhesive tape	2701/537	. . .	Stopping the winding or unwinding of reels which do not feature spring motors
2701/3772	. . . .	Double-sided	2701/70	. .	Use of material
2701/378	. . .	Recording tape	2701/71	. .	Special purposes; Special handling other than the normal handling
2701/379	. . .	Sealing tape	2801/00		Application field

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- 2801/03 . Image reproduction devices
- 2801/06 . . Office-type machines, e.g. photocopiers
- 2801/09 . . Single-function copy machines
- 2801/12 . . Single-function printing machines, typically table-top machines
- 2801/15 . . Digital printing machines
- 2801/18 . . Stencil printing machines
- 2801/21 . . Industrial-size printers, e.g. rotary printing press
- 2801/24 . Post -processing devices
- 2801/27 . . Devices located downstream of office-type machines
- 2801/31 . . Devices located downstream of industrial printers
- 2801/36 . Plotting
- 2801/39 . Scanning
- 2801/42 . Die-cutting
- 2801/45 . Audio or video tape players, or related mechanism
- 2801/48 . Bookbinding
- 2801/51 . Automobile
- 2801/54 . Cigarette making
- 2801/57 . Diaper manufacture
- 2801/61 . Display device manufacture, e.g. liquid crystal displays
- 2801/63 . Dunnage conversion
- 2801/66 . Envelope filling machines
- 2801/69 . Form fill-and-seal machines
- 2801/72 . Fuel cell manufacture
- 2801/75 . Labelling machines
- 2801/78 . Mailing systems
- 2801/81 . Packaging machines
- 2801/84 . Paper-making machines
- 2801/87 . Photovoltaic element manufacture, e.g. solar panels
- 2801/91 . Recording tape manufacture
- 2801/93 . Tyres