

Compilation of Changes to the CPC Scheme Between 2015.10 and 2015.11

Presentation Details

- Entries for new symbols and headings: *Black text in italics*
- Entries for existing symbols and headings
- text insertions: *Green text in italics with yellow background*
 - text deletions: ~~Red strikethrough text with grey background~~
- Entries for deleted symbols and headings: ~~Black strikethrough text~~
- Entries arranged by project.
 - In cases when the originating project cannot be found, "N/A" is given for the Project information (e.g. the change could be due to an Editorial Correction).
 - Projects ending in "-F" indicate finalisation after reclassification was completed.

Project: MP0122 (H01L)

- U H01L 29/00** **Semiconductor devices adapted for rectifying, amplifying, oscillating or switching, or capacitors or resistors with at least one potential-jump barrier or surface barrier, e.g. PN junction depletion layer or carrier concentration layer; Details of semiconductor bodies or of electrodes thereof; {Multistep manufacturing processes therefor}(H01L 31/00 - H01L 47/00, H01L 51/05 take precedence; processes or apparatus adapted for the manufacture or treatment thereof or of parts thereof H01L 21/00; details other than of semiconductor bodies or of electrodes thereof H01L 23/00; devices consisting of a plurality of solid state components formed in or on a common substrate H01L 27/00; {passive two-terminal components without a potential-jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor H01L 28/00; } resistors in general H01C; capacitors in general H01G, {e.g. ceramic barrier-layer capacitors H01G 4/1272})**

NOTE

In this main group, classification is made both in groups [H01L 29/02](#) to [H01L 29/51](#) and in groups [H01L 29/66](#) to [H01L 29/94](#) if both of these sets of groups are relevant.

- U H01L 29/66 · Types of semiconductor device; {Multistep manufacturing processes therefor}
- U H01L 29/68 · · controllable by only the electric current supplied, or only the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched
- U H01L 29/76 · · · Unipolar devices, {e.g. field effect transistors}
- U H01L 29/772 · · · · Field effect transistors
- U H01L 29/775 · · · · · with one dimensional charge carrier gas channel, e.g. quantum wire FET
- M H01L 29/778 · · · · · with two-dimensional charge carrier gas channel, e.g. HEMT ~~{~~; {with two-dimensional charge-carrier layer formed at a heterojunction interface (H01L 29/803 takes precedence)}
- M H01L 29/7781 · · · · · · {with inverted single heterostructure, i.e. with active layer formed on top of wide bandgap layer, e.g. IHEMT}
- M H01L 29/7782 · · · · · · {with confinement of carriers by at least two heterojunctions, e.g. DHHEMT, quantum well HEMT, DHMODFET}
- M H01L 29/7783 · · · · · · · {using III-V semiconductor material}
- M H01L 29/7784 · · · · · · · {with delta or planar doped donor layer (H01L 29/7785 takes precedence)}
- M H01L 29/7785 · · · · · · · · {with more than one donor layer}

- M H01L 29/7786 {with direct single heterostructure, i.e. with wide bandgap layer formed on top of active layer, e.g. direct single heterostructure MIS-like HEMT}
- M H01L 29/7787 {with wide bandgap charge-carrier supplying layer, e.g. direct single heterostructure MODFET}
- M H01L 29/7788 {Vertical transistors}
- M H01L 29/7789 {the two-dimensional charge carrier gas being at least partially not parallel to a main surface of the semiconductor body}

Project: MP0147 (H04W)

- U H04W 28/00 Network traffic or resource management**
- U H04W 28/02 . Traffic management, e.g. flow control or congestion control
- M H04W 28/06 . . Optimizing *{the usage of the radio link}*, e.g. header compression, information sizing *{, discarding information (system modifying transmission characteristic according to link quality by modifying frame length H04L 1/0007; dynamic adaptation of the packet size for flow control or congestion control H04L 47/365)}*

Project: MP0267 (G03B)

- M G03B 7/00 Control of exposure by setting shutters, diaphragms or filters, separately or conjointly (control of exposure in television cameras by means of circuitry for compensating for variation in the brightness of the object H04N 5/235)**

WARNING

Group G03B 7/00 is impacted by reclassification into groups G03B 7/01 and G03B 7/30.

Groups G03B 7/00, G03B 7/01 and G03B 7/30 should be considered in order to perform a complete search.

- M G03B 7/01 . with selection of either manual or automatic mode

WARNING

Group G03B 7/01 is incomplete pending reclassification of documents from group G03B 7/00.

Groups G03B 7/00 and G03B 7/01 should be considered in order to perform a complete search.

- U G03B 7/08 . Control effected solely on the basis of the response, to the intensity of the light received by the camera, of a built-in light-sensitive device

- M G03B 7/0807 (Frozen) . . {Control circuits (G03B 7/10 takes precedence)}

WARNING

Group G03B 7/0807 is no longer used for the classification of documents as of **January 15 July 1, 2015 2014**. The **backfile content** of this group is being reclassified into groups **G03B 7/081 - G03B-7/091 G03B 7/097**.

Until reclassification is complete, groups **G03B 7/0807; and G03B 7/081 and- G03B-7/091 G03B 7/097** should be considered in order to perform a complete search.

- M G03B 7/081 . . Analogue circuits

WARNING

Group Groups G03B 7/081 is- G03B 7/089 are incomplete pending reclassification of documents from group **G03B 7/0807**.

~~Until reclassification is complete, groups Group [G03B 7/0807](#) and should be considered when searching any group of the range [G03B 7/081](#) should be considered - [G03B 7/089](#) in order to perform a complete search.~~

M G03B 7/087

- • for control of both exposure time and aperture

WARNING

~~Group G03B 7/087 is incomplete pending reclassification of documents from group G03B 7/081.~~

~~Until reclassification is complete, groups G03B 7/081 and G03B 7/087 should be considered in order to perform a complete search.~~

M G03B 7/089

- • for storage of exposure value in mirror reflex cameras

WARNING

~~Group G03B 7/089 is incomplete pending reclassification of documents from group G03B 7/081.~~

~~Until reclassification is complete, groups G03B 7/081 and G03B 7/089 should be considered in order to perform a complete search.~~

M G03B 7/091

- • Digital circuits

WARNING

~~Group Groups [G03B 7/091](#) is - [G03B 7/097](#) are incomplete pending reclassification of documents from group [G03B 7/0807](#).~~

~~Until reclassification is complete, groups Group [G03B 7/0807](#) and should be considered when searching any group of the range [G03B 7/091](#) should be considered - [G03B 7/097](#) in order to perform a complete search.~~

M G03B 7/097

- • for control of both exposure time and aperture

WARNING

~~Group G03B 7/097 is incomplete pending reclassification of documents from group G03B 7/091.~~

~~Until reclassification is complete, groups G03B 7/091 and G03B 7/097 should be considered in order to perform a complete search.~~

M G03B 7/16

- in accordance with both the intensity of the flash source and the distance of the flash source from the object, e.g. in accordance with the "guide number" of the flash bulb and the focusing of the camera

WARNING

Group [G03B 7/16](#) is impacted by reclassification into group [G03B 7/17](#). Groups [G03B 7/16](#) and [G03B 7/17](#) should be considered in order to perform a complete search.

M G03B 7/17

- • Selection of modes in flash units by exposure control arrangements

WARNING

Group [G03B 7/17](#) is incomplete pending reclassification of documents from group [G03B 7/16](#).

Groups [G03B 7/16](#) and [G03B 7/17](#) should be considered in order to perform a complete search.

M G03B 7/30

- Safety arrangements for control of exposure

WARNING

Group [G03B 7/30](#) is incomplete pending reclassification of documents from group [G03B 7/00](#).

Groups G03B 7/00 and G03B 7/30 should be considered in order to perform a complete search.

Project: RP0059 (G05G)

G05G

CONTROL DEVICES OR SYSTEMS INsofar AS CHARACTERISED BY MECHANICAL FEATURES ONLY ("Bowden" or like mechanisms [F16C 1/10](#); gearings or mechanisms not peculiar to this purpose [F16H](#); speed changing or reversing mechanisms for gearings conveying rotary motion [F16H 59/00](#) to [F16H 63/00](#))

NOTES

1. This subclass ~~covers~~ covers:
 - members of general applicability for mechanical control;
 - mechanical systems for moving members to one or more definite settings.
2. Systems peculiar to the control of particular machines or apparatus provided for in a single other class are classified in the relevant class for such machines or apparatus, for example:

[A61G 13/02](#) Controls for adjusting operating tables
[A61G 15/02](#) Controls for adjusting operating chairs—
~~[B25J](#) Manipulators, e.g. controls therefor~~ [A63F 13/20](#),
[A63F 13/98](#) Accessories for games using an electronically
generated display
~~[B60K 26/00](#) Arrangement or mounting of propulsion unit
control devices in vehicles~~ [B25J](#) Manipulators, e.g.
controls therefor
~~[B60T 7/00](#) Vehicle brake action initiating means~~
[B60K 26/00](#) Arrangement or mounting of propulsion-unit control
devices in vehicles
~~[B62D 33/073](#) Adaptations of control devices for movable
vehicle cabs~~ [B60T 7/00](#) Vehicle brake-action initiating means
~~[B62K 21/00](#) Cycle-steering devices~~ [B62D 33/073](#)
Adaptations of control devices for movable vehicle cabs
~~[B62K 23/00](#) Rider~~ [B62K 21/00](#) Cycle-operated controls
specially adapted for cyclessteering devices
~~[B62L 3/00](#) Brake~~ [B62K 23/00](#) Rider-actuating
mechanismsoperated controls specially adapted for cycles
~~[B63H 25/02](#) Marine steering initiating means~~ [B62L 3/00](#)
Brake-actuating mechanisms specially adapted for cycles
~~[B66B 1/00](#) Controls for elevators~~ [B63H 25/02](#) Marine
steering initiating means
~~[B66C 13/18](#) Control systems or devices for cranes~~
[B66B 1/00](#) Controls for elevators
~~[B66C 13/56](#) Arrangements of handles or pedals for crane
operation~~ [B66C 13/18](#) Control systems or devices for cranes
~~[E02F 9/20](#) Control devices for dredging or soil shifting
machines~~ [B66C 13/56](#) Arrangements of handles or pedals for crane
operation
~~[F16C 3/28](#) Adjustable cranks or eccentrics~~ [E02F 9/20](#)
Control devices for dredging or soil shifting machines
~~[F16D 43/00](#) Automatic clutches~~ [F16C 3/28](#) Adjustable
cranks or eccentrics
{~~[F16H 59/00](#) to [F16H 63/00](#)~~ Speed changing or reversing
mechanisms for gearings conveying rotary motion} [F16D 43/00](#)
Automatic clutches
[F16K 31/00](#), [F16K 33/00](#) Controls for valves
[F16P 3/00](#) Safety devices acting in conjunction with the
control or operation of a machine

[F16P 7/02](#) Stopping machines on occurrence of dangerous conditions therein
[G02B 21/32](#) Micromanipulators structurally combined with microscopes
[G04B 1/00](#) to [G04B 18/00](#) Driving mechanisms in clocks or watches
[G06C](#) Digital computers in which all the computation is effected mechanically
[G06F 3/02](#) Manual computer input arrangements
[G06K 11/00](#) Converting a pattern of mechanical parameters into electric signals
[G21C 7/08](#) Displacement of solid control elements in nuclear reactors
[H01H](#) Mechanisms for operating switch contacts
[H03J 1/00](#) Mechanical control of resonant circuits.

Project: RP0090 (C09K)

M C09K 8/00 Compositions for drilling of boreholes or wells; Compositions for treating boreholes or wells, e.g. for completion or for remedial operations

NOTE

In *{When classifying in groups [C09K 8/00](#) to [C09K 8/40](#) and [C09K 8/50](#) - [C09K 8/94](#), it is desirable mandatory when appropriate to add classify with indexing codes for aspects relating to compositions for drilling or treating boreholes or wells. The indexing codes are chosen from the groups [C09K 2208/00](#) to [C09K 2208/32](#) - [C09K 2208/34](#)}*

M C09K 8/02 · Well-drilling compositions

NOTE

In groups [C09K 8/02](#) - [C09K 8/38](#), in the absence of an indication to the contrary, classification is made in the last appropriate place.

Project: RP0095 (G06F)

U G06F 9/00 Arrangements for programme control, e.g. control unit (programme control for peripheral devices [G06F 13/10](#); in regulating or control systems [G05B](#))

U G06F 9/06 · using stored programme, i.e. using internal store of processing equipment to receive and retain programme

U G06F 9/44 · · Arrangements for executing specific programmes

D G06F 2009/4441 · · · {Programme partitioning, e.g. concurrency or parallelism detection; programming parallel machines in general}

U G06F 9/445 · · · Programme loading or initiating {(bootstrapping [G06F 9/4401](#); movement of software or configuration parameters for network-specific applications [H04L 67/34](#))}

D G06F 2009/44515 · · · {using non-volatile memory from which the program can be directly executed, e.g. EEPROM}

D G06F 2009/44531 · · · {involving multiple processors}

Project: RP0105 (B60B)

U B60B 33/00 Castors in general; {Anti-clogging castors}{castors for large containers [B65D 90/18](#)}

U B60B 33/0028 · {Construction of wheels; methods of assembling on axle}

D B60B 2033/0031 · · {the axle being inclined}

D B60B 2033/0034 · {having means for blocking by gripping on the ground}

Project: RP0108 (F25B)

D F25B 2100/00

Project: RP0108 (F25D)

D F25D 2230/00

D F25D 2240/00

D F25D 2250/00

D F25D 2260/00

D F25D 2270/00

Project: N/A (A01)

A01 - A01

AgricultureAGRICULTURE**Project: N/A (A01N)**

A01N

PRESERVATION OF BODIES OF HUMANS OR ANIMALS OR PLANTS OR PARTS THEREOF; BIOCIDES, e.g. AS DISINFECTANTS, AS PESTICIDES, AS HERBICIDES (preparations for medical, dental or toilet purposes [A61K](#); methods or apparatus for disinfection or sterilisation in general, or for deodorising of air [A61L](#)); PEST REPELLANTS OR ATTRACTANTS (decoys [A01M 1/06](#); medicinal preparations [A61K](#)); PLANT GROWTH REGULATORS (compounds in general [C01](#), [C07](#), [C08](#); fertilisers [C05](#); soil conditioners or stabilisers [C09K 17/00](#))

NOTES

1. This subclass covers:

- compositions, physical forms, methods of application of specific materials or the use of single compounds or compositions
- chemosterilants for the sexual sterilisation of invertebrates, e.g. insects (sex sterilants for other purposes [A61K](#)).

2. This subclass does not cover materials which affect the growth of a plant solely by supplying nutrients, i.e. plant food, ordinarily required for growth or materials which are used to prevent or cure mineral deficiencies in plants, e.g. addition of iron chelates to cure iron chlorosis, which materials are covered by class [C05](#).

3. In this subclass, the following expression is used with the meaning indicated:

- "plant growth regulators" are those materials which alter the plant through a chemical modification of the plant metabolism, such as auxins.

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

A01N 43/824	covered by A01N 43/82
A01N 43/828	covered by A01N 43/82
A01N 43/832	covered by A01N 43/82
A01N 43/836	covered by A01N 43/82
A01N 53/02	covered by A01N 53/00
A01N 53/04	covered by A01N 53/00
A01N 53/06	covered by A01N 53/00
A01N 53/08	covered by A01N 53/00
A01N 53/10	covered by A01N 53/00
A01N 53/12	covered by A01N 53/00
A01N 53/14	covered by A01N 53/00
A01N 55/10	covered by A01N 55/00

U A01N 3/00

Preservation of plants or parts thereof, e.g. inhibiting evaporation, improvement of the appearance of leaves {or protection against physical influences such as UV radiation using chemical compositions; Grafting wax}{preservation of foodstuffs [A23](#); preservation or chemical ripening of fruit or vegetables [A23B 7/00](#)}; {(protective coverings [A01G 13/02](#))} Grafting wax

A01N 3/04

- Grafting-wax

NOTE

~~1.~~

Attention is drawn to the definitions of groups of chemical elements following the title of section C.

In groups A01N 27/00 to A01N 65/00, in the absence of an indication to the contrary, classification is made in the last appropriate place for an active ingredient.

Where a compound is described as existing in tautomeric forms, it is classified as if existing in the form which is classified last in the system.

Compounds covered by different main groups according to alternatively specified parts of their formulae are classified in every one of the relevant main groups.

Salts formed between two or more organic compounds are classified as the compound providing the essential ion and it is also classified as the compound providing the other ion.

Salts or metal chelates of an organic compound are classified as that compound.

In this subclass, a foodstuff is not considered as an active ingredient.

Different materials applied in sequence, at different times, are considered as a mixture of all materials employed

Synergistic or potentiated compositions are classified as if the synergist or potentiator were an active ingredient.

In groups A01N 25/00 to A01N 65/00, the symbol X means nitrogen, oxygen, sulfur or a halogen; Y means nitrogen, oxygen or sulfur. A dotted line between atoms indicates an optional bond, e.g.



indicates one or two single bonds or a double bond.

~~2.~~ In groups A01N 25/00 to A01N 65/00, it is required to use Combination Sets for classifying mixtures of (active or formulation-relevant) ingredients.

Symbols relating to additional ingredients of mixtures or specific formulation types are added to the Combination Set of the main ingredient.

The additional ingredient may be a further active ingredient (for example in case of synergistic mixtures) or may relate to a particular special formulation-ingredient (such as a surfactant or safener) or to a special formulation embodiment (like a wettable powder or microcapsule).

~~3.~~ ~~1.~~ For compositions containing more than one known active ingredients (e.g. synergistic mixtures) the symbol [A01N 2300/00](#) is additionally given to the symbol of the main ingredient.

A01N 25/00 -
A01N 65/00**Biocides; Pest repellants or attractants; Plant growth regulators**NOTES

1. Attention is drawn to the definitions of groups of chemical elements following the title of section C.
2. In groups A01N 27/00 to A01N 65/00, in the absence of an indication to the contrary, classification is made in the last appropriate place for an active ingredient.
3. Where a compound is described as existing in tautomeric forms, it is classified as if existing in the form which is classified last in the system.
4. Compounds covered by different main groups according to alternatively specified parts of their formulae are classified in every one of the relevant main groups.
5. Salts formed between two or more organic compounds are classified as the compound providing the essential ion and it is also classified as the compound providing the other ion.
6. Salts or metal chelates of an organic compound are classified as that compound.
7. In this subclass, a foodstuff is not considered as an active ingredient.
8. Different materials applied in sequence, at different times, are considered as a mixture of all materials employed
9. Synergistic or potentiated compositions are classified as if the synergist or potentiator were an active ingredient.
10. In groups A01N 25/00 to A01N 65/00, the symbol X means nitrogen, oxygen, sulfur or a halogen; Y means nitrogen, oxygen or sulfur. A dotted line between atoms indicates an optional bond, e.g.  indicates one or two single bonds or a double bond.
11. In groups A01N 25/00 to A01N 65/00, it is required to use Combination Sets for classifying mixtures of (active or formulation-relevant) ingredients. Symbols relating to additional ingredients of mixtures or specific formulation types are added to the Combination Set of the main ingredient. The additional ingredient may be a further active ingredient (for example in case of synergistic mixtures) or may relate to a particular special formulation-ingredient (such as a surfactant or safener) or to a special formulation embodiment (like a wettable powder or microcapsule).

Project: N/A (A21)

A21 - A24

Foodstuffs**FOODSTUFFS**; **tobacco****TOBACCO**

Project: N/A (A23G)

A23G

COCOA; COCOA PRODUCTS, e.g. CHOCOLATE; SUBSTITUTES FOR COCOA OR COCOA PRODUCTS; CONFECTIONERY; CHEWING GUM; ICE-CREAM; PREPARATION THEREOFNOTES

1. In this subclass, the following term is used with the meaning indicated:
 - "ice-cream" includes any edible frozen or congealed semi-liquid or pasty substance, e.g. slush ice
2. In this subclass, subject matter which cannot be completely classified in a single one of the main groups should be classified in each relevant main group
3. The classification symbols of groups: [A23G 1/305](#), [A23G 1/56](#), [A23G 3/343](#), [A23G 3/346](#), [A23G 4/062](#), [A23G 9/322](#) and [A23G 9/52](#)

can be followed by additional symbols preceded by the sign "+", e.g. [A23G 1/56](#) +D8. The symbols give further information concerning structure, composition or form and have the meaning as listed below:

D . Containing organic compounds
D2 .. containing micro-organisms, enzymes
D4 .. containing vitamins, antibiotics
D6 .. containing beet sugar or cane sugar if specifically mentioned; containing other carbohydrates, e.g. starches, gums, alcohol sugar, polysaccharides, dextrans
D8 .. containing cocoa fat if specifically mentioned; containing products of cocoa fat; containing other fats, e.g. fatty acid, fatty alcohol, their esters, lecithin, paraffins
D10 .. containing amino-acids, proteins, e.g. gelatine, polypeptides
D12 .. containing dairy products
D14 .. containing fruits, nuts, e.g. almonds, seeds, plants or their extracts (gums D6)
F . Containing inorganic compounds
H . Products with special structure
H2 .. foamed, gas-expanded or cellular products
H4 .. products with a supported structure
H4D ... products with an inedible support, e.g. a stick
H4F ... products with an edible support, e.g. a cornet
H6 .. products with a composite structure, e.g. laminated products
H8 .. hollow products, e.g. with inedible or edible filling, fixed or movable within the cavity

Project: N/A (A41)

A41 - A47

~~Personal or domestic articles~~ **PERSONAL OR DOMESTIC ARTICLES**

Project: N/A (A44B)

U A44B 19/00

Slide fasteners

U A44B 19/02

· with a series of separate interlocking members secured to each stringer tape

A44B 19/04

· · {Stringers arranged edge-to-edge when fastened}, e.g. abutting stringers}

Project: N/A (A46B)

A46B

BRUSHES (handles not integral with brushware [B25G](#))

WARNING

The following IPC groups are not used in the classification scheme. Subject matter covered by these groups is classified in the following groups:

[A46B 11/02](#) covered by [A46B 11/00](#) or [A46B 11/0017](#) or [A46B 11/0017](#) or [A46B 11/002](#)

[A46B 11/04](#) covered by [A46B 11/00](#) or [A46B 11/0013](#)

Project: N/A (A47C)**A47C**

CHAIRS (seats specially adapted for vehicles [B60N 2/00](#); {hunting stands, e.g. hunting seats [A01M 31/02](#); seats adapted for angling, e.g. fisherman's seats [A01K 97/22](#); bath seats [A47K 3/12](#); shower seats [A47K 3/282](#); chairs with toilet means [A47K 11/04](#); seats for surgeons, dentists [A61B 19/28](#); chairs for disabled persons [A61G 5/00](#); operating chairs, dental chairs, physiotherapeutic chairs, gynaecological chairs [A61G 15/00](#); chairs with massage means [A61H 2201/0149](#); ski-lift seats [B61B 12/002](#); rail vehicles seats [B61D 33/00](#); vessel furniture, e.g. boat seats [B63B 29/04](#); aircraft seats [B64D 11/06](#)); **SOFAS**; **BEDS** (upholstery in general [B68G](#); {beds specially adapted for nursing [A61G 7/00](#); sleeping accommodation for caravans [B60P 3/38](#), sleeping accommodation for rail vehicles [B61D 31/00](#); sleeping accommodation for load-carrying vehicles [B62D 33/0612](#); berths for vessels [B63B 29/10](#)})

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

[A47C 1/038](#) covered by [A47C 1/0355](#)

[A47C 23/053](#) covered by [A47C 23/05](#), [A47C 23/0507](#), [A47C 23/0515](#)

Project: N/A (A61)**A61 - A63**

HealthHEALTH; amusementAMUSEMENT

Project: N/A (A61B)**U A61B 5/00**

Detecting, measuring or recording for diagnostic purposes (radiation diagnosis [A61B 6/00](#); diagnosis by ultrasonic, sonic or infrasonic waves [A61B 8/00](#)); Identification of persons {(measuring or recording in general subclasses of [G01](#); medical informatics [G06F 19/30](#))}

U A61B 5/04

• Detecting, measuring or recording bioelectric signals of the body of parts thereof

U A61B 5/0402

• • Electrocardiography, i.e. ECG

U A61B 5/0452

• • • Detecting specific parameters of the electrocardiograph cycle

A61B 5/0456

• • • • {Detecting R peaks, e.g. for synchronising diagnostic apparatus} {(physiological signal analysis for synchronising or triggering a measurement or image acquisition [A61B 5/7285](#))}

U A61B 10/00

Other methods or instruments for diagnosis, e.g. instruments for taking a cell sample, for biopsy, for vaccination diagnosis (vaccination prophylaxis, vaccination therapy [A61B 17/20](#)); Sex determination; Ovulation-period determination (menstruation tables [G06C 3/00](#)); Throat striking implements

NOTE

Attention is drawn to group [A61F 13/15](#) which provides for swabs

A61B 10/02

• {Instruments for taking a cell ~~sample~~ **samples** or for biopsy {([A61B 10/0038](#) and [A61B 10/0045](#) take precedence; needle locating or guiding means [A61B 17/3403](#); samplers for enzymology or microbiology [C12M 1/26](#); sampling or preparing biological specimens [G01N 33/48](#))}

U A61B 17/00

Surgical instruments, devices or methods, e.g. tourniquets ([A61B 18/00](#) takes precedence; contraceptive devices, pessaries, or applicators therefor [A61F 6/00](#); eye surgery [A61F 9/007](#); ear surgery [A61F 11/00](#))

A61B 17/068

- {Surgical staplers {, e.g. containing multiple staples or clamps}}({staplers containing only one staple [A61B 17/10](#); magazines or containers for staples [A61B 17/105](#);} for performing anastomosis [A61B 17/115](#); {staplers in general [B25C 5/00](#)})

Project: N/A (A61C)

A61C

DENTISTRY; APPARATUS OR METHODS FOR ORAL OR DENTAL HYGIENE (non-driven toothbrushes [A46B](#); {tongue scrapers [A61B 17/24](#);} preparations for dentistry [A61K 6/00](#); preparations for cleaning the teeth or mouth [A61K 8/00](#), [A61Q 11/00](#))

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

~~A61C 5/09 covered by A61C 5/08~~
~~A61C 5/11 covered by A61C 5/08~~
~~A61C 7/24 covered by A61C 7/20~~
~~A61C 7/26 covered by A61C 7/20~~
~~A61C 7/32 covered by A61C 7/28~~
~~A61C 8/02 covered by A61C 8/0004~~
~~A61C 11/04 covered by A61C 11/00~~
~~A61C 13/003 covered by A61C 13/26~~
~~A61C 13/007 covered by A61C 13/01~~
~~A61C 13/03 covered by A61C 13/01~~
~~A61C 13/07 covered by A61C 13/0025~~
~~A61C 13/093 covered by A61C 13/1006~~
~~A61C 13/103 covered by A61C 13/1009~~
~~A61C 13/105 covered by A61C 13/1009~~
~~A61C 13/107 covered by A61C 13/0001~~
~~A61C 13/113 covered by A61C 13/0001~~
~~A61C 13/15 covered by A61C 19/003~~
~~A61C 13/23 covered by A61C 13/0025~~
~~A61C 13/263 covered by A61C 13/225~~
~~A61C 13/271 covered by A61C 13/26~~
~~A61C 13/32 covered by A61C 13/225~~
~~A61C 13/36 covered by A61C 13/1016~~
~~A61C 13/38 covered by A61C 13/12~~
~~A61C 17/024 covered by A61C 17/02~~
~~A61C 17/032 covered by A61C 17/02~~
~~A61C 17/06 covered by A61C 17/00~~
~~A61C 17/08 covered by A61C 17/00~~
~~A61C 17/10 covered by A61C 17/00~~
~~A61C 17/12 covered by A61C 17/00~~
~~A61C 17/18 covered by A61C 17/16~~

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

A61C 5/09 covered by A61C 5/08
A61C 5/11 covered by A61C 5/08
A61C 7/24 covered by A61C 7/20
A61C 7/26 covered by A61C 7/20
A61C 7/32 covered by A61C 7/28
A61C 8/02 covered by A61C 8/0004
A61C 11/04 covered by A61C 11/00
A61C 13/003 covered by A61C 13/26
A61C 13/007 covered by A61C 13/01
A61C 13/03 covered by A61C 13/01
A61C 13/07 covered by A61C 13/0025

A61C 13/093 covered by A61C 13/1006
A61C 13/103 covered by A61C 13/1009
A61C 13/105 covered by A61C 13/1009
A61C 13/107 covered by A61C 13/0001
A61C 13/113 covered by A61C 13/0001
A61C 13/15 covered by A61C 19/003
A61C 13/23 covered by A61C 13/0025
A61C 13/263 covered by A61C 13/225
A61C 13/271 covered by A61C 13/26
A61C 13/32 covered by A61C 13/225
A61C 13/36 covered by A61C 13/1016
A61C 13/38 covered by A61C 13/12
A61C 17/024 covered by A61C 17/02
A61C 17/032 covered by A61C 17/02
A61C 17/06 covered by A61C 17/00
A61C 17/08 covered by A61C 17/00
A61C 17/10 covered by A61C 17/00
A61C 17/12 covered by A61C 17/00
A61C 17/18 covered by A61C 17/16

Project: N/A (A61K)

A61K

PREPARATIONS FOR MEDICAL, DENTAL, OR TOILET PURPOSES (devices or methods specially adapted for bringing pharmaceutical products into particular physical or administering forms [A61J 3/00](#); chemical aspects of, or use of materials for deodorisation of air, for disinfection or sterilisation, or for bandages, dressings, absorbent pads or surgical articles [A61L](#); {compounds per se [C01](#), [C07](#), [C08](#), [C12N](#)} ; soap compositions [C11D](#); {micro-organisms per se [C12N](#)})

NOTES

1. This subclass covers the following subject matter, whether set forth as a composition (mixture), process of preparing the composition or process of treating using the composition:

- a. Drug or other biological compositions which are capable of:
 - preventing, alleviating, treating or curing abnormal or pathological conditions of the living body by such means as destroying a parasitic organism, or limiting the effect of the disease or abnormality by chemically altering the physiology of the host or parasite (biocides [A01N 25/00](#) to [A01N 65/00](#));
 - maintaining, increasing, decreasing, limiting, or destroying a physiological body function, e.g. vitamin compositions, sex sterilants, fertility inhibitors, growth promoters, or the like (sex sterilants for invertebrates, e.g. insects, [A01N](#); plant growth regulators [A01N 25/00](#) to [A01N 65/00](#));
 - diagnosing a physiological condition or state by an in vivo test, e.g. X-ray contrast or skin patch test compositions (measuring or testing processes involving enzymes or micro-organisms [C12Q](#); in vitro testing of biological material, e.g. blood, urine, [G01N](#), e.g. [G01N 33/48](#))
- b. Body treating compositions generally intended for deodorising, protecting, adorning or grooming the body, e.g. cosmetics, dentifrices, tooth filling materials.

2. Attention is drawn to the definitions of groups of chemical elements following the title of section C.

3. Attention is drawn to the notes in class [C07](#), for example the notes following the title of the subclass [C07D](#), setting forth the rules for classifying organic

compounds in that class, which rules are also applicable, if not otherwise indicated, to the classification of organic compounds in [A61K](#).

4. In this subclass, with the exception of group [A61K 8/00](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

WARNINGS

1.

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

A61K 9/133	covered by	A61K 9/127
A61K 9/18	covered by	A61K 9/14
A61K 9/22	covered by	A61K 9/20
A61K 9/24	covered by	
A61K 9/209		
A61K 9/26	covered by	A61K 9/2077 ,
A61K 9/2081		
A61K 9/30	covered by	A61K 9/28
A61K 9/32	covered by	A61K 9/28
A61K 9/34	covered by	A61K 9/28
A61K 9/36	covered by	A61K 9/28
A61K 9/38	covered by	A61K 9/28
A61K 9/40	covered by	A61K 9/28
A61K 9/42	covered by	A61K 9/28
A61K 9/44	covered by	
A61K 9/2072		
A61K 9/46	covered by	
A61K 9/0007		
A61K 9/52	covered by	A61K 9/50
A61K 9/54	covered by	A61K 9/5073 ,
A61K 9/5078 ,	A61K 9/5084	
A61K 9/56	covered by	A61K 9/50
A61K 9/58	covered by	A61K 9/50
A61K 9/60	covered by	A61K 9/50
A61K 9/62	covered by	A61K 9/50
A61K 9/64	covered by	A61K 9/50
A61K 9/66	covered by	A61K 9/48
A61K 9/68	covered by	
A61K 9/0058		
A61K 9/72	covered by	
A61K 9/0073		
A61K 45/08	covered by	A61K 31/00 ,
A61K 47/00		
A61K 47/04	covered by	
A61K 47/02		
A61K 50/00	covered by	A61K 9/0009 ,
C09J 9/02		

The following IPC indexing codes are not used in the CPC scheme:

[A61K 101/00](#) - [A61K 135/00](#)

2. Subgroups of [A61K 48/00](#) are incomplete (Jan. 2003). Documents are being reclassified from [A61K 48/00](#) to its subgroups

Project: N/A (A61M)

A61M

DEVICES FOR INTRODUCING MEDIA INTO, OR ONTO, THE BODY (introducing media into or onto the bodies of animals [A61D 7/00](#); means for inserting tampons [A61F 13/26](#); devices for administering food or medicines orally [A61J](#); containers for collecting, storing or administering blood or medical fluids [A61J 1/05](#)); **DEVICES FOR TRANSDUCING BODY MEDIA OR FOR TAKING MEDIA FROM THE BODY** (surgery [A61B](#); chemical aspects of surgical articles [A61L](#)); **DEVICES FOR PRODUCING OR ENDING SLEEP OR STUPOR**

NOTE

1.

~~This subclass covers suction, pumping or atomising devices for medical use (e.g. cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers), apparatus for general or local anaesthetics, devices or methods for causing a change in the state of consciousness, catheters, dilators, apparatus for introducing medicines into the body other than orally~~

Void

~~When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned~~

This subclass covers suction, pumping or atomising devices for medical use (e.g. cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers), apparatus for general or local anaesthetics, devices or methods for causing a change in the state of consciousness, catheters, dilators, apparatus for introducing medicines into the body other than orally

2. Void

3. When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

[A61M 1/18](#) covered by [B01D 63/02](#), [B01D 63/04](#)

[A61M 1/20](#) covered by [B01D 63/06](#)

[A61M 1/22](#) covered by [B01D 63/08](#)

[A61M 1/24](#) covered by [B01D 63/10](#)

[A61M 3/04](#) covered by [A61M 3/02](#)

[A61M 5/175](#) covered by [A61M 5/168](#)

[A61M 5/303](#) covered by [A61M 5/30](#)

[A61M 5/307](#) covered by [A61M 5/30](#)

[A61M 23/00](#) covered by [A61M 25/01](#), [A61M 29/00](#)

[A61M 25/08](#) covered by [A61M 25/0105](#)

[A61M 25/082](#) covered by [A61M 25/0116](#)

[A61M 25/085](#) covered by [A61M 25/0122](#)

[A61M 25/088](#) covered by [A61M 25/01](#)

[A61M 25/092](#) covered by [A61M 25/0133](#)

[A61M 25/095](#) covered by [A61M 25/01](#), [A61B 5/00](#), [A61N 1/056](#)

[A61M 25/098](#) covered by [A61M 25/0108](#)

[A61M 25/12](#) covered by [A61M 25/10](#), [A61M 29/02](#)

[A61M 25/14](#) covered by [A61M 25/0021](#)

[A61M 25/16](#) covered by [A61M 25/0009](#)

[A61M 25/18](#) covered by [A61M 25/0014](#)

[A61M 29/04](#) covered by [A61M 29/02](#)

[A61M 36/00](#) covered by [A61M 37/0069](#), [A61N 5/10](#)

[A61M 36/02](#) covered by [A61M 37/0069](#), [A61N 5/10](#)

A61M 36/04 covered by [A61M 37/0069](#), [A61N 5/10](#), [A61M 15/02](#)
A61M 36/06 covered by [A61M 37/0069](#), [A61N 5/10](#); [A61M 15/02](#)
A61M 36/08 covered by [A61M 5/1785](#)
A61M 36/10 covered by [A61M 37/0069](#), [A61N 5/10](#)
A61M 36/12 covered by [A61M 37/0069](#), [A61N 5/10](#)
A61M 36/14 covered by [A61M 37/0069](#), [A61N 5/10](#)

- U A61M 5/00** **Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way; Accessories therefor, e.g. filling or cleaning devices, arm-rests ({vaccination appliances for veterinary use [A61D 1/025](#)} ; tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#); containers specially adapted for medical or pharmaceutical purposes [A61J 1/00](#); {combinations of vial and syringe for mixing or transferring their contents [A61J 1/20](#); holders for containers for collecting, storing or administering blood or medical fluids [A61J 1/16](#)})**
- U A61M 5/14** • Infusion devices, e.g. infusing by gravity; Blood infusion; Accessories therefor (suction in pumping blood transfusion [A61M 1/02](#); {infusion containers [A61J 1/05](#)})
- U A61M 5/158** • • Needles {for infusions; Accessories therefor, e.g. for inserting infusion needles, or for holding them on the body}
- A61M 2005/1586** • • • {Holding accessories for holding infusion needles on the body **holding devices for catheters [A61M 25/02](#) (*holding devices for catheters [A61M 25/02](#)*)}**
- U A61M 2202/00** **Special media to be introduced, removed or treated (applying radioactive material [A61N 5/1028](#))**

NOTE

The classification symbols [A61M 2202/0007](#) to [A61M 2202/0092](#) are not listed first when assigned to patent documents. They are used only when associated to other subgroups of [A61M 2202/00](#) in combination sets
Example: [A61M 2202/0417](#), [A61M 2202/0057](#)

- A61M 2202/04** • Liquids

NOTE

The codes can be followed by additional symbols. The symbols have the meaning as listed below:

+A fluid entering a filter;
+B fluid leaving the cross-flow filter without having passed through the filtering element ;
+C filtrate, i.e. the fluid passing through the filter;
+D residue retained by the filter due to size;
+E retained by adsorption;
+F changed by biological action;
+H product to be retained or harvested, e.g. by pheresis;
+K changed by chemical action;
+W product washed out;
+Z starting product created by centrifuging.

Project: N/A (A63C)

- U A63C 5/00 Skis or snowboards (sledges with runners, e.g. ski-bobs, [B62B 13/00](#); runners for sledges [B62B 17/02](#); runners for carrying wheeled vehicles to facilitate travel on snow or ice [B62B 19/00](#))
- A63C 5/03 · {Mono skis; -Snowboards}
- U A63C 17/00 Roller skates; Skate-boards
- U A63C 17/04 · with wheels arranged otherwise than in two pairs {{[A63C 17/01](#) takes precedence}}
- U A63C 17/06 · · single-track type
- A63C 17/08 · · · {Single-wheel type {with single axis}}

Project: N/A (B01)

B01 - B09

SeparatingSEPARATING; MixingMIXING**Project: N/A (B05C)**

- U B05C 17/00 Hand tools or apparatus using hand held tools, for applying liquids or other fluent materials to, for spreading applied liquids or other fluent materials on, or for partially removing applied liquids or other fluent materials from, surfaces ({casings or accessories for storing or handling solid or pasty toilet or cosmetic substances [A45D 40/00](#);} brushes [A46B](#); {shoe polish applicators [A47L 23/05](#); surgical glue applicators [A61B 17/00491](#);} absorbent pads, e.g. swabs, for applying media to the human body [A61F 13/15](#); {hand-held applicators for applying or spreading media, e.g. remedies, on the human body [A61M 35/003](#); implements for writing or drawing [B43K](#); hand-held desk devices for applying liquid, e.g. adhesive, by contact to surfaces [B43M 11/06](#);} implements or apparatus for removing dry paint from surfaces [B44D 3/16](#) {; container closures with pads or like contents-applying means [B65D 47/42](#)})
- B05C 17/005 · {for discharging material {from a reservoir or container located in or on the hand tool} through an outlet orifice by pressure {without using surface contacting members like pads or brushes}}

Project: N/A (B21)

B21 - B33

ShapingSHAPING**Project: N/A (B21J)**

- U B21J 15/00 Riveting
- U B21J 15/02 · Riveting procedures
- B21J 15/06 · · {Riveting hollow rivets by means of hydraulic, liquid, or gas pressure {portable riveters [B21J 15/105](#)}}

Project: N/A (B29C)

- U B29C 47/00 Extrusion moulding, i.e. expressing the moulding material through a die or nozzle which imparts the desired form; Apparatus therefor (extrusion blow-moulding [B29C 49/04](#); extrusion presses in general [B30B 11/22](#))
- U B29C 47/04 · of multilayered {or multi-component, e.g. co-extruded layers or components} or multicoloured articles {or coloured articles}{{adapter blocks [B29C 47/56](#)}}
- B29C 47/06 · · {Multilayered articles {or multi-component articles}}
- U B29C 47/08 · Component parts, details or accessories; Auxiliary operations

- U B29C 47/36
- • Means for plasticising or homogenising the moulding material or forcing it through the nozzle or die
- U B29C 47/58
- • • Details
- B29C 47/60
- • • ~~{Screws}~~ **{{(screws characterized by the material or by their manufacturing process [B29C 47/0844](#))}}**
- U B29C 65/00**
- Joining {or sealing} of preformed parts, {e.g. welding of plastics materials}; Apparatus therefor {{general aspects of processes or apparatus for joining preformed parts [B29C 66/00](#); using porous material formed by internal pressure generated therein for joining preformed parts [B29C 44/1228](#), [B29C 44/326](#); } for making boxes, cartons, envelopes or bags [B31B](#); for sealing or securing package folds or closures [B65B 51/00](#); joining constructional elements in general [F16B](#); splicing of light guides [G02B 6/255](#))**
- WARNING
- Groups [B29C 65/00](#) to [B29C 65/70](#) are not complete, mainly for documents published before the year 1995, pending reclassification; see also [B29C 65/74](#) and its subgroups
- U B29C 65/02
- by heating, with or without pressure
- WARNING
- Group [B29C 65/02](#) and subgroups are not complete, pending a reorganisation; see also [B29C 65/48](#) and its subgroups
- U B29C 65/18
- • using heated tools
- U B29C 65/24
- • • characterised by the means for heating the tool **{{(by impulse heating [B29C 65/38](#))}}**
- NOTES
1. Classification is made in groups [B29C 65/24](#) to [B29C 65/32](#) only if the details or adaptations of the heating means are of interest.
 2. When classifying in this group, heated tools are additionally classified in groups [B29C 65/18](#), [B29C 65/20](#) or [B29C 65/22](#)
- B29C 65/30
- • • • ~~{Electrical means}~~ **{{([B29C 65/38](#) takes precedence)}}**
- U B29C 65/48
- using adhesives **{, i.e. using supplementary joining material}(heat-activated {to be additionally classified in} [B29C 65/02](#) {and subgroups}; {applying molten plastics, e.g.} hot melts {to be additionally classified in} [B29C 65/40](#); non-mechanical parts of adhesive processes, in general [C09J 5/00](#)); {solvent bonding}**
- NOTE
- When classifying in this group, heat-activated adhesives are further classified in group [B29C 65/02](#). When classifying in this group, applying molten plastics is further classified in group [B29C 65/40](#).
- WARNING
- Subgroups [B29C 65/4805](#) to [B29C 65/4895](#) are not complete, pending a reorganisation; see also this group and [B29C 65/4895](#)
- B29C 65/52
- • {characterised by the way of} applying the adhesive **{{([B29C 65/50](#) takes precedence; apparatus for applying liquids in general [B05C](#); processes for applying liquids in general [B05D](#))}}**
- WARNING
- Subgroups [B29C 65/521](#) to [B29C 65/528](#) are not complete, pending a reorganisation; see also this group

B29C 69/00

{Combinations of shaping techniques not provided for in a single one of main groups [B29C 39/00](#) to [B29C 67/00](#), e.g. associations of moulding and joining techniques; -Apparatus therefore {([B29C 47/0038](#) takes precedence)}

Project: N/A (B29K)**U B29K 2227/00**

Use of polyvinylhalogenides {or derivatives thereof} as reinforcement {(as such [C08L 27/00](#))}

B29K 2227/06

- {PVC, i.e. polyvinylchloride {(as such [C08L 27/06](#))}}

U B29K 2427/00

Use of polyvinylhalogenides {or derivatives thereof} as filler {(as such [C08L 27/00](#))}

B29K 2427/06

- {PVC, i.e. polyvinylchloride {(as such [C08L 27/06](#))}}

U B29K 2505/00

Use of metals, their alloys or their compounds, as filler

NOTE

Alloys or compounds of specified metals are indexed with the same code as the specified metals.

U B29K 2505/08

- Transition metals

B29K 2505/14

- · {Noble metals, e.g. Silver, Gold, Platinum}

U B29K 2627/00

Use of polyvinylhalogenides {or derivatives thereof} for preformed parts, e.g. inserts {(as such [C08L 27/00](#))}

B29K 2627/06

- {PVC, i.e. polyvinylchloride {(as such [C08L 27/06](#))}}

U B29K 2701/00

Use of unspecified macromolecular compounds for preformed parts, e.g. inserts (unspecified rubbers [B29K621/00](#)){(as such [C08L 101/00](#))}

B29K 2701/10

- {Thermosetting resins}

B29K 2701/12

- {Thermoplastic materials}

U B29K 2705/00

Use of metals, their alloys or their compounds, for preformed parts, e.g. for inserts

NOTE

Alloys or compounds of specified metals are indexed with the same code as the specified metals.

U B29K 2705/08

- Transition metals

B29K 2705/14

- · {Noble metals, e.g. Silver, Gold, Platinum}

Project: N/A (B32B)**U B32B 21/00**

Layered products comprising {a layer of} wood, e.g. wood board, veneer, wood particle board

B32B 21/02

- {the layer being formed} of fibres, chips, or particles {, e.g. MDF, HDF, OSB, chipboard, particle board, hardboard}

B32B 21/04

- {comprising wood as the main or only constituent of a layer {, which is next to another layer of the same or of a different material}; ([B32B 17/062](#) and [B32B 23/044](#) take precedence; next to a layer of a particular substance [B32B 9/042](#); next to a bituminous or tarry layer [B32B 11/042](#); next to a water setting substance layer [B32B 13/10](#); next to a metal layer [B32B 15/10](#); next to a layer formed of natural mineral fibres or particles [B32B 19/042](#));

Project: N/A (B41)

B41 - B44

~~Printing~~**PRINTING****Project: N/A (B44D)**

B44D 5/00

{Surface treatment to obtain special artistic surface effects or finishes (pretreatment or after-treatment of surface coated by applying liquids [B05D 3/00](#); obtaining special surface effects by applying liquids or other fluent materials to surfaces [B05D 5/00](#); surface shaping of plastics, e.g. embossing, [B29C 59/00](#))}

Project: N/A (B60)

B60 - B68

~~Transporting~~**TRANSPORTING****Project: N/A (B60C)**

U B60C 19/00

B60C 19/12

Tyre parts or constructions not otherwise provided for

- Puncture preventing arrangements ([B60C 9/00](#) takes precedence; inflatable inserts having reinforcing means [B60C 5/08](#) {; *sealing compositions per se* [B29C 73/163](#); *devices for introducing sealing compositions into the tyre* [B29C 73/166](#)}); ~~{sealing compositions per se [B29C 73/163](#); devices for introducing sealing compositions into the tyre [B29C 73/166](#)}~~

Project: N/A (B60G)

U B60G 5/00

Resilient suspensions for a set of tandem wheels or axles having interrelated movement

U B60G 5/04

- with two or more pivoted arms, the movements of which are resiliently interrelated, {e.g. the arms being rigid}

B60G 5/047

- {at least one arm being resilient, e.g. a leafspring ([B60G 5/053](#) takes precedence)}

U B60G 9/00

Resilient suspensions of a rigid axle or axle housing for two or more wheels {(the axle being a part of a set of tandem axles [B60G 5/00-B60G 5/065](#); with leaf springs [B60G 11/02-B60G 11/08](#))}

B60G 9/04

- {the axle or housing not being pivotally mounted on the vehicle {([B60G 9/003](#) takes precedence)}

Project: N/A (B60S)

B60S 5/00

Servicing, maintaining, repairing or refitting of vehicles (~~{collecting or removing exhaust gases in workshops [B08B 15/002](#); straightening vehicle body parts [B21D 1/12](#), [B21D 1/14](#)}; vehicles adapted to carry a workshop for servicing or maintenance [B60P 3/14](#); servicing rail locomotives [B61K](#); *{registering or indicating the working of vehicles [G07C 5/00](#): testing of vehicles [G01M 17/00](#); arrangements for electrical testing [G01R 31/00](#); devices for monitoring or checking brake systems [B60T 17/22](#); filling or draining lubricant [F01M 11/04](#); means for collecting, retaining, or draining-off lubricant [F16N 31/00](#); draining of lubricant from gearing [F16H 57/0406](#); assembly or repair of springs or dampers [F16F 9/3271](#); tool, instrument or work supports or storage means used in association with vehicles [B25H 5/00](#)};* ~~{registering or indicating the working of vehicles [G07C 5/00](#): testing of vehicles [G01M 17/00](#); arrangements for electrical testing [G01R 31/00](#); devices for monitoring or checking brake systems [B60T 17/22](#); filling or draining lubricant [F01M 11/04](#); means for collecting, retaining, or draining-off lubricant [F16N 31/00](#); draining of lubricant from gearing [F16H 57/0406](#); assembly or repair of springs or dampers [F16F 9/3271](#); tool, instrument or work supports or storage means used in association with vehicles [B25H 5/00](#)}~~);~~

B60S 9/00

Ground-engaging vehicle fittings for supporting, lifting, or manoeuvring the vehicle, wholly or in part, e.g. built-in jacks ~~{props for vehicle draw bars [B60D 1/66](#) (*{props for vehicle draw bars [B60D 1/66](#); anti-theft devices acting on vehicle jacking means [B60R 25/001](#)}; lifting devices in general [B66F](#), supports in general [F16M](#)}; anti-theft devices acting on vehicle jacking means [B60R 25/001](#)};* (~~lifting devices in general [B66F](#), supports in general [F16M](#))~~);~~

Project: N/A (B61B)

B61B

RAILWAY SYSTEMS; EQUIPMENT THEREFOR NOT OTHERWISE PROVIDED FOR (lifts or hoists, elevators, escalators, moving walkways [B66B](#))

NOTE

In this subclass, the following terms are used with the meanings indicated:

- *"rope railways" covers railways using cables or chains as traction or suspension means;*
- ~~"rope railways" covers railways using cables or chains as traction or suspension means;—"ropes", "cables", or "chains" are equivalent unless specifically mentioned~~

Project: N/A (B62D)

U B62D 55/00

Endless track vehicles (steering aspects [B62D 11/00](#); {characterised by the driver not being seated [B62D 51/007](#)})

U B62D 55/08

• Endless track units; Parts thereof

U B62D 55/18

• • Tracks (self-cleaning track links [B62D 55/088](#))

U B62D 55/20

• • • of articulated type, e.g. chains {(with lubrication means [B62D 55/092](#))}

U B62D 55/205

• • • • Connections between track links

B62D 55/215

• • • • • {Resilient connections between links}

Project: N/A (B63B)

- U B63B 35/00 Vessels or like floating structures adapted for special purposes (vessels characterised by load-accommodating arrangements [B63B 25/00](#); fire-fighting vessels [A62C 29/00](#); submarines, mine-layers or mine-sweepers [B63G](#); large containers for use in or under water [B65D 88/78](#); {Advertising on ships or other floating means [G09F 21/18](#)})
- B63B 35/71 · {Canoes, kayaks or the like {(collapsible, foldable, inflatable or like vessels [B63B 7/00](#))}}

Project: N/A (B63G)

- U B63G 8/00 Underwater vessels, e.g. submarines; {Equipment specially adapted therefor}(submarine hulls [B63B 3/13](#); diving chambers with mechanical link, e.g. cable, to a base [B63C 11/34](#); divers' sleds [B63C 11/46](#); torpedoes [F42B 19/00](#))
- B63G 8/38 · {Arrangement of visual or electronic watch equipment, e.g. of periscopes, of radar} {(periscopes, optical aiming or sighting devices per se [G02B 23/00](#))}

Project: N/A (B64C)

- U B64C 27/00 Rotorcraft; Rotors peculiar thereto (alighting gear [B64C 25/00](#))
- B64C 27/51 · {Damping of blade movements}

Project: N/A (B64D)

- B64D 10/00 {Flying suits (helmets in general [A42B 3/00](#); breathing helmets [A62B 18/00](#))}

Project: N/A (B65D)

- U B65D 81/00 Containers, packaging elements, or packages, for contents presenting particular transport or storage problems, or adapted to be used for non-packaging purposes after removal of contents
- U B65D 81/38 · with thermal insulation (vacuum bottles or the like [A47J 41/00](#); {thermal insulation of domestic water storage heaters [F24H 1/182](#)})
- U B65D 81/3848 · · {semi-rigid container folded up from one or more blanks}
- B65D 81/3858 · · · {formed of different materials, e.g. laminated or foam filling between walls; *(for shock absorbing purposes [B65D 81/1275](#))*~~for shock absorbing purposes [B65D 81/1275](#)~~}

Project: N/A (B81)

- B81 - B82 **MicroMICRO-structural technology****STRUCTURAL TECHNOLOGY**;
NanoNANO-technology**TECHNOLOGY**

Project: N/A (C01)

- C01 - C14 **ChemistryCHEMISTRY**

Project: N/A (C07C)

- U C07C 2/00 Preparation of hydrocarbons from hydrocarbons containing a smaller number of carbon atoms (redistribution reactions involving splitting [C07C 6/00](#))
- U C07C 2/86 · by condensation between a hydrocarbon and a non-hydrocarbon
- C07C 2/88 · · {Growth and elimination reactions {(preparation of metallo-organic compounds [C07F](#))}}

Project: N/A (C07D)C07D 451/00 -
C07D 521/00

Heterocyclic compounds containing condensed hetero ring systems
C07D 451/00 - C07D 517/00 cover compounds containing one system of two or more relevant hetero rings condensed among themselves or condensed with a common carbocyclic ring system, with or without other non-condensed hetero rings. For the purpose of classification in groups C07D 451/00 - C07D 519/00, the degree of hydrogenation of the ring system is not taken into consideration. For the purpose of classification in groups C07D 451/00 - C07D 463/00, C07D 473/00 - C07D 477/00, C07D 489/00, C07D 499/00 - C07D 507/00, the wording of the groups has to be understood, in the absence of an indication to the contrary, as including ring systems further condensed with carbocyclic rings or ring systems, but excluding ring systems further condensed with other hetero rings, either directly or through a common carbocyclic ring system, e.g. sparteine is classified in group C07D 471/22, not in group C07D 455/02. In groups C07D 471/00, C07D 487/00, C07D 491/00 - C07D 498/00 or C07D 513/00 - C07D 517/00, the subdivision is based on the number of relevant hetero rings.

NOTES

1. C07D 451/00 - C07D 517/00 cover compounds containing one system of two or more relevant hetero rings condensed among themselves or condensed with a common carbocyclic ring system, with or without other non-condensed hetero rings.

2. For the purpose of classification in groups C07D 451/00 - C07D 519/00, the degree of hydrogenation of the ring system is not taken into consideration.

3. For the purpose of classification in groups C07D 451/00 - C07D 463/00, C07D 473/00 - C07D 477/00, C07D 489/00, C07D 499/00 - C07D 507/00, the wording of the groups has to be understood, in the absence of an indication to the contrary, as including ring systems further condensed with carbocyclic rings or ring systems, but excluding ring systems further condensed with other hetero rings, either directly or through a common carbocyclic ring system, e.g. sparteine is classified in group C07D 471/22, not in group C07D 455/02.

4. In groups C07D 471/00, C07D 487/00, C07D 491/00 - C07D 498/00 or C07D 513/00 - C07D 517/00, the subdivision is based on the number of relevant hetero rings.

Project: N/A (C07F)U C07F 7/00
C07F 7/24**Compounds containing elements of the 4th Group of the Periodic System**

- {Lead compounds}

U C07F 9/00
U C07F 9/02**Compounds containing elements of the 5th Group of the Periodic System**

- Phosphorus compounds (sugar phosphates [C07H 11/04](#); nucleotides [C07H 19/00](#), [C07H 21/00](#); nucleic acids [C07H 21/00](#))

U C07F 9/547

- • Heterocyclic compounds, e.g. containing phosphorus as a ring hetero atom

U C07F 9/6536

- • • having nitrogen and sulfur atoms with or without oxygen atoms, as the only ring hetero atoms

U C07F 9/6539

- • • • Five-membered rings

C07F 9/6541

- • • • • {condensed with carbocyclic rings or {carbocyclic} ring systems}

U C07F 9/6544

- • • • Six-membered rings

C07F 9/6547

- • • • • {condensed with carbocyclic rings or {carbocyclic} ring systems}

Project: N/A (C07K)**U C07K 5/00****Peptides containing up to four amino acids in a fully defined sequence; Derivatives thereof**

C07K 5/04

- containing only normal peptide links

NOTE

In groups [C07K 5/06](#) to [C07K 5/10](#) the following terms or expressions are used with the meaning indicated:

neutral: amino acids having in the sidechain the same number of amino groups and carboxylic acid groups or derivatives thereof, e.g. Gly;

basic: amino acids having in the sidechain more amino groups than carboxylic acid groups or derivatives thereof, e.g. Arg;

acidic: amino acids having in the sidechain more carboxylic acid groups or derivatives thereof than amino groups, e.g. Asp;

aliphatic: amino acids having only acyclic carbon atoms in the sidechain, e.g. Ala aromatic;

cycloaliphatic: amino acids having a carbocyclic ring in the sidechain, e.g. Phe

heterocyclic: amino acids wherein the sidechain contains or is part of a heteroring, e.g. Pro;

side chain: the R radical in the optionally functionalised amino acid R-CH(NH₂)CO₂H)

Project: N/A (C08B)**C08B 1/00****{Preparatory treatment of cellulose for making derivatives thereof {, e.g. pre-treatment, pre-soaking, activation}}****U C08B 3/00****Preparation of cellulose esters of organic acids {(rendering cellulose suitable for esterification [C08B 1/02](#))}**

C08B 3/06

- {Cellulose acetate {, e.g. mono-acetate, di-acetate or tri-acetate}

Project: N/A (C08F)**U C08F 4/00****Polymerisation catalysts (catalysts in general [B01J](#))**NOTES

1. Group [C08F 4/00](#) and subgroups can be incomplete according to the following classification rules:

- if a catalyst is specifically used for only one type of polymer, it is not classified in [C08F 4/00](#);
- in such a case, the classification symbol of [C08F 4/00](#) providing for the catalyst may be used as a symbol for a C-Set in the groups providing for the polymer, e.g. ([C08F 12/04](#), [C08F 4/62](#))
- this method of classification is applied only when a note after the group providing for the polymer explicitly indicates which symbols of [C08F 4/00](#) may be used for forming the C-set.

2. When classifying in group [C08F 4/00](#), the type of catalyst can be further indexed by using indexing codes chosen from [C08F 2410/00](#), [C08F 2420/00](#) or their subgroups

U C08F 4/42

- Metals; Metal hydrides; Metallo-organic compounds; Use thereof as catalyst precursors

U C08F 4/44

- selected from light metals, zinc, cadmium, mercury, copper, silver, gold, boron, gallium, indium, thallium, rare earths or actinides

- U C08F 4/60
- • • together with refractory metals, iron group metals, platinum group metals, manganese, rhenium {technetium} or compounds thereof
- NOTES**
1. In groups [C08F 4/60](#) to [C08F 4/64](#), the term "component" comprises the transition metal or a compound thereof, pretreated or not { (pretreating per se [C08F 4/61](#), [C08F 4/63](#) and [C08F 4/65](#)) }
 2. Group [C08F 4/60003](#) takes precedence over groups [C08F 4/602](#) to [C08F 4/619](#)
- U C08F 4/619
- • • • Component covered by group [C08F 4/60](#) containing a transition metal-carbon bond {([C08F 4/60003](#) - [C08F 4/60196](#) take precedence)}
- C08F 4/6192
- • • • {containing at least one cyclopentadienyl ring, condensed or not, e.g. an indenyl or a fluorenyl ring}
- U C08F 4/62
- • • • Refractory metals or compounds thereof
- NOTE**
- Group [C08F 4/62003](#) takes precedence over groups [C08F 4/622](#) to [C08F 4/639](#)
- U C08F 4/63
- • • • • Pretreating the metal or compound covered by group [C08F 4/62](#) before the final contacting with the metal or compound covered by group [C08F 4/44](#) {([C08F 4/62003](#) - [C08F 4/62196](#) take precedence)}
- U C08F 4/632
- • • • • Pretreating with metals or metal-containing compounds
- C08F 4/638
- • • • • • {with metals or metal-containing compounds, not provided for in a single group of groups [C08F 4/633](#) to [C08F 4/637](#)}

Project: N/A (C08J)

- U C08J 5/00
- Manufacture of articles or shaped materials containing macromolecular substances (shaping of foodstuffs [A23P](#); manufacture of semi-permeable membranes [B01D 67/00](#) to [B01D 71/00](#); mechanical features, see the relevant classes, e.g. [B29](#))**
- C08J 5/20
- Manufacture of shaped of ion-exchange resins {Use of macromolecular compounds as anion [B01J 41/14](#) or cation [B01J 39/20](#) exchangers}

Project: N/A (C08L)

- U C08L 1/00
- Compositions of cellulose, modified cellulose or cellulose derivatives**
- U C08L 1/02
- Cellulose; Modified cellulose
- C08L 1/04
- • {Oxycellulose; ~~Hydrocellulose~~[Hydrocellulose](#) {, e.g. microcrystalline cellulose}
- U C08L 1/08
- Cellulose derivatives
- C08L 1/10
- • {Esters of organic acids {, i.e. acylates}
- U C08L 1/16
- • Esters of inorganic acids
- C08L 1/18
- • • {Cellulose nitrate {, i.e. nitrocellulose}
- U C08L 3/00
- Compositions of starch, amylose or amylopectin or of their derivatives or degradation products**
- C08L 3/04
- {Starch derivatives {, e.g. crosslinked derivatives}
- U C08L 5/00
- Compositions of polysaccharides or of their derivatives not provided for in groups [C08L 1/00](#) or [C08L 3/00](#)**
- C08L 5/12
- {Agar or} agar-agar {, i.e. mixture of agarose and agaropectin}; -Derivatives thereof}

U C08L 89/00 **Compositions of proteins; Compositions of derivatives thereof (foodstuff preparations [A23J 3/00](#))**

- U C08L 89/04 · Products derived from waste materials, e.g. horn, hoof or hair
- C08L 89/06 · · {derived from leather or skin {, e.g. gelatin}}

Project: N/A (C09B)**U C09B 31/00** **Disazo and polyazo dyes of the type A->B->C, A->B->C->D, or the like, prepared by diazotising and coupling**

- U C09B 31/02 · Disazo dyes
- U C09B 31/06 · · from a coupling component "C" containing a directive hydroxyl group
- U C09B 31/068 · · · Naphthols
- C09B 31/072 · · · · {containing acid groups, e.g. -CO₂H, -SO₃H, -PO₃H₂, -OSO₃H, -OPO₂H₂; -Salts thereof}

Project: N/A (C10L)**U C10L 1/00** **Liquid carbonaceous fuels**

- U C10L 1/10 · containing additives
- U C10L 1/14 · · Organic compounds
- U C10L 1/18 · · · Containing oxygen
- C10L 1/192 · · · · {Macromolecular compounds} {(C10L 1/1814, C10L 1/1817 take precedence)}
- U C10L 1/195 · · · · · obtained by reactions involving only carbon-to-carbon unsaturated bonds
- C10L 1/196 · · · · · · {derived from monomers containing a carbon-to-carbon unsaturated bond and a carboxyl group or salts, anhydrides or esters thereof {homo- or copolymers of compounds having one or more unsaturated aliphatic radicals each having one carbon bond to carbon double bond, and at least one being terminated by a carboxyl radical or of salts, anhydrides or esters thereof}}

Project: N/A (C12P)**U C12P 17/00** **Preparation of heterocyclic carbon compounds with only O, N, S, Se or Te as ring hetero atoms (C12P 13/04 to C12P 13/24 take precedence)**

- U C12P 17/18 · containing at least two hetero rings condensed among themselves or condensed with a common carbocyclic ring system, e.g. rifamycin, {(e.g. Rifamycin [C12P 17/189](#))}
- C12P 17/185 · · {Heterocyclic compounds containing sulfur atoms as ring hetero atoms in the condensed system}{~~cepham nucleus C12P 35/00~~ (*cepham nucleus C12P 35/00*; *penam nucleus C12P 37/00*); ~~penam nucleus C12P 37/00~~}

Project: N/A (C13K)

C13K 13/00 **{Sugars not otherwise provided for in this class}**

Project: N/A (C21)

C21 - C40

Metallurgy*METALLURGY***Project: N/A (C23C)**

U C23C 16/00

Chemical coating by decomposition of gaseous compounds, without leaving reaction products of surface material in the coating, i.e. chemical vapour deposition [CVD] processes (reactive sputtering or vacuum evaporation [C23C 14/00](#))

U C23C 16/44

- characterised by the method of coating ([C23C 16/04](#) takes precedence)

U C23C 16/448

- • characterised by the method used for generating reactive gas streams, e.g. by evaporation or sublimation of precursor materials

C23C 16/452

- • • {by activating reactive gas streams before {their} introduction into the reaction chamber, e.g. by {ionisation} or addition of reactive species}

U C23C 18/00

Chemical coating by decomposition of either liquid compounds or solutions of the coating forming compounds, without leaving reaction products of surface material in the coating (chemical surface reaction [C23C 8/00](#), [C23C 22/00](#)); Contact plating

NOTE

This groups covers also suspensions containing reactive liquids and non-reactive solid particles.

U C23C 18/16

- by reduction or substitution, e.g. electroless plating ([C23C 18/54](#) takes precedence)

U C23C 18/18

- • Pre-treatment of the material to be coated

U C23C 18/20

- • • of organic surfaces, e.g. resins

U C23C 18/28

- • • • Sensitising or activating {(not used, see subgroups)}

C23C 18/30

- • • • • {Activating {or accelerating or sensitising with palladium or other noble metal}}

Project: N/A (D01)

D01 - D10

~~Textiles or flexible materials not otherwise provided for~~*TEXTILES OR FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR***Project: N/A (D01H)**

U D01H 13/00

Other common constructional features, details or accessories (for open-end spinning [D01H 4/00](#))

D01H 13/14

- Warning or safety devices, e.g. automatic fault detectors, stop motions; ~~{Monitoring the entanglement of slivers in drafting arrangements};~~ **safety devices of general application F16P** (*safety devices of general application F16P; indicating devices of general application G08B*); ~~indicating devices of general application G08B~~

Project: N/A (D21)

D21 - D21

Paper*PAPER***Project: N/A (E01)**

E01 - E06

Building*BUILDING***Project: N/A (E05B)**

U E05B 17/00

Accessories in connection with locks (buffers [E05F 5/00](#); means for preventing rattling of wings [E05F 7/04](#); means for taking the weight of the wing [E05F 7/06](#))

E05B 17/04

- {Devices for coupling the turning cylinder of a single or a double cylinder lock with the bolt operating member}

Project: N/A (E06C)

U E06C 7/00

Component parts, supporting parts, or accessories

E06C 7/48

- Ladder heads; Supports for heads of ladders for resting against objects
{~~ladders attachable to structures such as poles [E06C 1/34](#)~~ (*ladders attachable to structures such as poles [E06C 1/34](#)*)}

Project: N/A (E21)

E21 - E21

Earth drilling*EARTH DRILLING; mining**MINING***Project: N/A (F01)**

F01 - F05

Engines or pumps*ENGINES OR PUMPS***Project: N/A (F02D)**

U F02D 1/00

Controlling fuel-injection pumps, e.g. of high pressure injection type ([F02D 3/00](#) takes precedence; controlling fuel-injection electrically [F02D 41/30](#) {pumping elements on fuel pressure acting for varying fuel delivery in quantity or timing [F02M](#)})

NOTE

- in this subclass the following indexing codes are used:

[F02D 2700/0282](#) and [F02D 2700/10](#)

U F02D 1/02

- not restricted to adjustment of injection timing, e.g. varying amount of fuel delivered

F02D 1/04

- {by mechanical means dependent on engine speed, e.g. using centrifugal governors ([F02D 1/08](#) takes precedence)}

U F02D 1/16

- Adjustment of injection timing ([F02D 1/02](#) takes precedence {rotary distributor pumps [F02M 41/00](#); by adjustment of pumping elements [F02M 59/20](#)})

F02D 1/18

- {with non-mechanical means for transmitting control impulse; -with amplification of control impulse}

Project: N/A (F02M)

U F02M 7/00

Carburettors with means for influencing, e.g. enriching or keeping constant, fuel/air ratio of charge under varying conditions (choke valves for starting [F02M 1/00](#))

F02M 7/06

- {Means for enriching charge on sudden {air} throttle opening, i.e. at acceleration, e.g. storage means in passage way system}

Project: N/A (F04B)

- U F04B 1/00 Multi-cylinder machines or pumps characterised by number or arrangements of cylinders ([F04B 3/00](#) takes precedence; fluid-driven pumps [F04B 9/08](#); control of reciprocating machines or pumps in general [F04B 49/00](#))
- U F04B 1/12 · having cylinder axes coaxial with, or parallel or inclined to main shaft axis
- F04B 1/14 · · {having stationary cylinders}

Project: N/A (F04D)

- F04D 19/00 **Axial-flow pumps (F04D 21/00 takes precedence); {pump comprising axial-Axial-flow and radial flow stages F04D 17/025} pumps (F04D 21/00 takes precedence; {pump comprising axial flow and radial flow stages F04D 17/025})**

Project: N/A (F05)

- F05 **Indexing Schemes relating to Engines or Pumps in various subclasses of Classes INDEXING SCHEMES RELATING TO ENGINES OR PUMPS IN VARIOUS SUBCLASSES OF CLASSES [F01-F04](#)**

Project: N/A (F15)

- F15 - F17 **Engineering in general ENGINEERING IN GENERAL**

Project: N/A (F16D)

- U F16D 3/00 Yielding couplings, i.e. with means permitting movement between the connected parts during the drive (couplings disconnectable simply by axial movement [F16D 1/10](#); slip couplings [F16D 7/00](#))
- U F16D 3/16 · Universal joints in which flexibility is produced by means of pivots or sliding or rolling connecting parts
- U F16D 3/20 · · one coupling part entering a sleeve of the other coupling part and connected thereto by sliding or rolling members ([F16D 3/18](#), [F16D 3/24](#) take precedence)
- NOTE
"coupling parts" means the driving member and the driven member of the coupling to be mounted on and rotate as a unit with the shafts or their equivalents between which the coupling is placed. An intermediate member interconnecting these parts is regarded as such an equivalent.
- F16D 3/202 · · · {one coupling part having radially projecting pins, e.g. tripod joints}

Project: N/A (F16F)

- U F16F 13/00 Units comprising springs of the non-fluid type as well as vibration-dampers, shock-absorbers, or fluid springs ([F16F 5/00](#), {[F16F 6/00](#), [F16F 9/003](#)} take precedence)
- U F16F 13/04 · comprising both a plastics spring and a damper, e.g. a friction damper
- U F16F 13/06 · · the damper being a fluid damper, e.g. the plastics spring not forming a part of the wall of the fluid chamber of the damper ([F16F 13/26](#) takes precedence)
- F16F 13/22 · · · characterised by comprising also a dynamic damper; dampers using inertia effect per se characterised by comprising also a dynamic [F16F 7/10](#) damper (dampers using inertia effect per se [F16F 7/10](#))

Project: N/A (F16H)

- U F16H 57/00 **General details of gearing (of screw-and-nut gearing [F16H 25/00](#); of fluid gearing [F16H 39/00](#) - [F16H 43/00](#))**
- F16H 57/02
- Gearboxes; Mounting gearing therein
- NOTE
- When classifying in this group, in the absence of an indication to the contrary, classification is made in all appropriate subgroups.
- WARNING
- Subgroups of [F16H 57/02](#) are not complete pending reclassification; see provisionally also respective higher groups

Project: N/A (F16K)

- U F16K 31/00 **{Actuating devices;} Operating means; Releasing devices {(regulating means [G05D](#))}**
- U F16K 31/12
- actuated by fluid ({fluid-actuated lift valves [F16K 1/126](#)}; fluid-actuated check valves [F16K 15/00](#); fluid-actuated safety valves [F16K 17/00](#))
- F16K 31/122
- • {the fluid acting on a piston ([F16K 31/143](#), [F16K 31/163](#), [F16K 31/363](#), [F16K 31/383](#) take precedence)}
- F16K 31/126
- • {the fluid acting on a diaphragm, bellows, or the like ([F16K 31/145](#), [F16K 31/165](#), [F16K 31/365](#), [F16K 31/385](#) take precedence)}

Project: N/A (F16L)

- U F16L 3/00 **Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets (anchors for holding pipes on or under the ground [F16L 1/06](#); {sound-damping supports [F16L 55/035](#); supports for insulated pipes [F16L 59/135](#))}**
- U F16L 3/01
- for supporting or guiding the pipes, cables or protective tubing, between relatively movable points, e.g. movable channels (hauling- or hoisting-chains with arrangements for holding electric cables, hoses or the like [F16G 13/16](#))
- F16L 3/015
- • {using articulated- or supple-guiding elements (arrangements for cranes of means for transmitting pneumatic, hydraulic or electric power to movable parts or devices [B66C 13/12](#))}

Project: N/A (F21)

F21 - F28 **~~Lighting~~[LIGHTING](#); ~~heating~~[HEATING](#)**

Project: N/A (F41)

F41 - F42 **~~Weapons~~[WEAPONS](#); ~~Blasting~~[BLASTING](#)**

Project: N/A (F41B)

- U F41B 5/00 **Bows; Crossbows**
- U F41B 5/14
- Details of bows; Accessories for arc shooting (sighting devices for bows [F41G 1/467](#))
- F41B 5/1403
- • {Details of bows; (~~camera's on bows~~ [F41B 5/1492](#)) ~~camera's on bows~~ [F41B 5/1492](#)}
- U F41B 5/1411
- • • {Bow-strings}
- F41B 5/1419
- • • • {String mounted peep sights (~~sights mounted on the bow itself~~ [F41G 1/467](#)) (~~sights mounted on the bow itself~~ [F41G 1/467](#))}

Project: N/A (F41C)

- U F41C 9/00 Other smallarms, e.g. hidden smallarms or smallarms specially adapted for underwater use
- F41C 9/04
- ~~Walking-stick guns; {Sticks combined with weapons A45B 3/14}~~ *Walking-stick guns {(Sticks combined with weapons A45B 3/14)}*

Project: N/A (G01)

G01 - G12 **Instruments***INSTRUMENTS*

Project: N/A (G01B)

- U G01B 3/00 Instruments as specified in the subgroups and characterised by the use of mechanical measuring means (arrangements for measuring particular parameters [G01B 5/00](#); devices of general interest specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material [B65H 75/34](#))

- U G01B 3/02
- Rulers or tapes with scales or marks for direct reading
- G01B 3/10
- · {flexible {, e.g. tape measures}

NOTE

Group [G01B 3/1002](#) takes precedence over groups [G01B 3/1005](#) to [G01B 3/1084](#)]

Project: N/A (G01C)

- U G01C 21/00 Navigation; Navigational instruments not provided for in preceding groups (measuring distance traversed on the ground by a vehicle [G01C 22/00](#); measuring linear or angular speed or acceleration [G01P](#); control of position, course, altitude or attitude of vehicles [G05D 1/00](#); traffic control systems [G08G](#))
- U G01C 21/26
- specially adapted for navigation in a road network
- U G01C 21/34
- · Route searching; Route guidance
- U G01C 21/36
- · · Input/output arrangements of navigation systems; {(Input arrangements for transferring data to be processed into a form capable of being handled by the computer, and output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements [G06F 3/00](#); pointing devices displaced or positioned by the user, e.g. mice, trackballs, pens or joysticks, and accessories therefor [G06F 3/033](#); interaction techniques for graphical user interfaces, e.g. interaction with windows, icons or menus [G06F 3/048](#); Manipulating 3D models or images for computer graphics [G06T 19/00](#)}
- U G01C 21/3626
- · · · {Details of the output of route guidance instructions (Traffic control systems for road vehicles involving transmission of navigation instructions to the vehicle [G08G 1/0968](#))}
- U G01C 21/3635
- · · · · {Guidance using 3D or perspective road maps}
- G01C 21/3638
- · · · · {including 3D objects and buildings (~~three dimensional [3D]~~ *modelling, e.g. data description of 3D objects G06T 17/00* (*three dimensional [3D] modelling, e.g. data description of 3D objects G06T 17/00; geographic models G06T 17/05*); ~~geographic models G06T 17/05~~ *G06T 17/05*}

Project: N/A (G01D)

G01D

MEASURING NOT SPECIALLY ADAPTED FOR A SPECIFIC VARIABLE; ARRANGEMENTS FOR MEASURING TWO OR MORE VARIABLES NOT COVERED IN A SINGLE OTHER SUBCLASS; TARIFF METERING APPARATUS; MEASURING OR TESTING NOT OTHERWISE PROVIDED FOR (means structurally associated with lightning or other over-voltage discharging apparatus for recording the operation thereof [G01R](#); displaying information in general [G09F](#); recording in a way which requires playback through a transducer [G11B](#))

NOTES

1. This subclass covers :

- devices for indicating or recording the results of measurements, not peculiar to variables covered by a single other subclass;
- analogous apparatus but in which the input is not a variable to be measured, e.g. a hand operation; ~~details of measuring instruments, which are of general interest;~~
- *details of measuring instruments, which are of general interest;*
- measurement transducers not adapted solely for the measurement of a single specified variable and not provided for elsewhere, i.e. means for converting the output of a sensing member to another variable where the form or nature of the sensing member does not constrain the means for converting;
- measuring or testing not otherwise provided for.

2. Attention is drawn to the Notes following the title of class [G01](#).

U G01D 4/00

Tariff metering apparatus (tariff meters for measuring the time integral of electric power or current [G01R 11/56](#); in taximeters [G07B 13/00](#); coin-feed mechanisms therefor [G07F](#))

U G01D 4/02

• Details

G01D 4/08

• • Transfer of indication from a counter into a summing counter ~~mechanical counters [G06M](#)~~*{(mechanical counters [G06M](#))}*

Project: N/A (G01F)

U G01F 23/00

Indicating or measuring liquid level, or level of fluent solid material, e.g. indicating in terms of volume, indicating by means of an alarm (in wells [E21B 47/04](#); adaptation to, or mounting on, steam boilers [F22B 37/78](#); level regulation [G05D](#); alarm devices [G08B](#); {for accumulators [H01M 10/48](#))

U G01F 23/30

• by floats (switches operated by floats [H01H 35/18](#), {with magnets [H01H 36/02](#)})

U G01F 23/32

• • using rotatable arms or other pivotable transmission elements

G01F 23/38

• • • {using magnetically actuated indicating means}

Project: N/A (G01L)

U G01L 19/00

Details of, or accessories for, apparatus for measuring steady or quasi-steady pressure of a fluent medium insofar as such details or accessories are not special to particular types of pressure gauges

G01L 19/14

• {Housings *{(*[G01L 19/0007](#), [G01L 19/0084](#), [G01L 19/0092](#), [G01L 19/04](#), [G01L 19/06](#) take precedence)}

Project: N/A (G01M)

U G01M 17/00

Testing of vehicles ([G01M 15/00](#) takes precedence; testing fluid tightness [G01M 3/00](#); testing elastic properties of bodies or chassis, e.g. torsion testing [G01M 5/00](#); testing alignment of vehicle head-lighting devices [G01M 11/06](#); {testing brakes [G01L 5/28](#)})

- G01M 17/007 · {of wheeled or endless-tracked vehicles ([G01M 17/08](#) takes precedence)}

Project: N/A (G01N)**U G01N 1/00****Sampling; Preparing specimens for investigation**

- U G01N 1/02 · Devices for withdrawing samples (for medical or veterinary purposes [A61](#); {sampling of foundation soil [E02D 1/04](#)}; obtaining samples of soil or well fluids [E21B 49/00](#); {collecting or conveying radioactive samples [G01T 7/00](#), e.g. [G01T 7/02](#), [G01T 7/08](#)})
- U G01N 1/10 · · in the liquid or fluent state {(burettes, pipettes [B01L 3/02](#); Sampling of ground water [E02D 1/06](#); metering by volume of fluids or fluent solid material [G01F 11/00](#), [G01F 13/00](#))}
- G01N 1/16 · · · with provision for intake at several levels ~~{[G01N 1/2035](#)}~~{[G01N 1/2035](#)} [G01N 1/12](#), [G01N 1/14](#) take precedence)
- G01N 1/20 · · · for flowing or falling materials ~~{[G01N 1/2035](#)}~~{[G01N 1/2035](#)} [G01N 1/12](#), [G01N 1/14](#) take precedence)

Project: N/A (G01P)**U G01P 15/00****Measuring acceleration; Measuring deceleration; Measuring shock, i.e. sudden change of acceleration**

- U G01P 15/02 · by making use of inertia forces {using solid seismic masses}{[G01P 15/14](#) takes precedence)
- U G01P 15/08 · · with conversion into electric or magnetic values
- G01P 15/09 · · · {by piezo-electric pick-up}

Project: N/A (G01R)**U G01R 33/00****Arrangements or instruments for measuring magnetic variables**

- U G01R 33/20 · involving magnetic resonance (medical aspects [A61B 5/055](#); magnetic resonance gyrometers [G01C 19/00](#) {investigating materials using NMR [G01N 24/00](#); prospecting or detecting using NMR [G01V 3/00](#)})
- U G01R 33/28 · · Details of apparatus provided for in groups [G01R 33/44](#) to [G01R 33/64](#)
- WARNING
Groups [G01R 33/281](#) - [G01R 33/288](#) are not complete pending reclassification. See also this group
- U G01R 33/32 · · · Excitation or detection systems, e.g. using radio frequency signals
- U G01R 33/34 · · · · Constructional details, e.g. resonators, {specially adapted to MR (aerials in general [H01Q](#))}
- G01R 33/345 · · · · · {of waveguide type ([G01R 33/343](#) takes precedence)}

Project: N/A (G01S)**U G01S 7/00****Details of systems according to groups [G01S 13/00](#), [G01S 15/00](#), [G01S 17/00](#) {(apparatus for measuring unknown time-intervals by electronic means, e.g. Vernier method [G04F 10/00](#))}**

- U G01S 7/52 · of systems according to group [G01S 15/00](#)
- G01S 7/521 · · {Constructional features {(constructional features of transducers [B06B](#); mounting transducers [G10K 11/00](#))}

Project: N/A (G02B)**U G02B 6/00****Light guides**

- U G02B 6/24 · Coupling light guides (for electric waveguides [H01P 1/00](#))

- U G02B 6/36
 - • Mechanical coupling means ([G02B 6/06](#), [G02B 6/30](#), [G02B 6/35](#), [G02B 6/38](#)), [G02B 6/255](#), [G02B 6/42](#) take precedence)
- U G02B 6/38
 - • • having fibre to fibre mating means
- U G02B 6/3807
 - • • • {Dismountable connectors, i.e. comprising plugs}
- U G02B 6/381
 - • • • • {of the ferrule type, e.g. fibre ends embedded in ferrules, connecting a pair of fibres}
- U G02B 6/3826
 - • • • • • {characterised by form or shape}
- G02B 6/383
 - • • • • • • {Hermaphroditic connectors, i.e. two identical plugs mating with one another, each plug having both male and female diametrically opposed engaging parts; *(electric hermaphroditic coupling H01R 24/84, H01R 13/28)* ~~electric hermaphroditic coupling H01R 24/84, H01R 13/28~~}

Project: N/A (G03B)

- U G03B 11/00 **Filters or other obturators specially adapted for photographic purposes (filters per se [G02B](#) {[G02B 5/20](#)})**
- G03B 11/04
 - {Hoods or caps for eliminating unwanted light from lenses, viewfinders or focusing aids}

WARNING
Groups [G03B 11/041](#) to [G03B 11/048](#) are not complete pending reclassification; see also [G03B 11/04](#)

Project: N/A (G03G)

- U G03G 2215/00 **Apparatus for electrophotographic processes (not used)**
- G03G 2215/20
 - Details of the fixing device or process

NOTE
Indexing codes of group [G03G 2215/20](#) can be followed by additional symbols preceded by a "+" sign and relating to additional characteristics. The indexing codes have the meaning as indicated below.

+H Using heat to fix
+P Using pressure to fix
+P1 where the pressure is changed
+P1A being adapted to the current toner-carrying medium treated (e.g. duplex copy, colour copy, OHP sheet, envelope)
+P1B compensating for temperature or other technical condition variations (e.g. sheet skewing) occurring
+P1C when being in a non-fixing or waiting mode
+P1M for maintenance purpose or abnormal situations (e.g. power cut-off)

Project: N/A (G04B)

- U G04B 1/00 Driving mechanisms {(driving mechanisms for Turkish time [G04B 19/22](#); driving mechanisms in the hands [G04B 45/043](#); driving mechanisms for phonographic apparatus [G11B 19/00](#); springs, driving weight engines [F03G](#); driving mechanisms for cinematography [G03B 1/00](#); driving mechanisms; driving mechanisms for time fuses for missiles [F42C](#); driving mechanisms for toys [A63H 29/00](#)}
- U G04B 1/10 · with mainspring {(synchronous motors with power reserve [G04C 15/0054](#); springs in general [F16F](#))}
- U G04B 1/16 · · Barrels; Arbors; Barrel axles (arrangements facilitating the removal of the mainspring [G04B 33/14](#))
- G04B 1/165 · · · {Spring cylinder with friction transmission to the gearing (especially for Roskopf clockworks); *(friction clutch between spring and spring cylinder [G04B 1/185](#))* ~~friction clutch between spring and spring cylinder [G04B 1/185](#)~~}

Project: N/A (G04F)

- U G04F 5/00 Apparatus for producing preselected time intervals for use as timing standards (generating clock signals for electric digital computers [G06F 1/04](#); regulating frequency in general [H03C](#), [H03L](#))
- U G04F 5/02 · Metronomes {(periodic signalisation by acoustic signals in general [G04B 21/005](#))}
- G04F 5/025 · · {Electronic metronomes}~~{rhytem generation for electrophonic musical instruments [G10H 1/36](#) (rhytem generation for electrophonic musical instruments [G10H 1/36](#))}~~

Project: N/A (G05D)**G05D**

SYSTEMS FOR CONTROLLING OR REGULATING NON-ELECTRIC VARIABLES (for continuous casting of metals [B22D 11/16](#) ; valves per se [F16K](#); sensing non-electric variables, see the relevant subclasses of [G01](#); for regulating electric or magnetic variables [G05F](#))

NOTES

1. This subclass does not cover features of general applicability to regulating systems, e.g. anti-hunting arrangements, which are covered by subclass [G05B](#).
2. In this subclass, the following term is used with the meaning indicated:
 - "systems" includes self-contained devices such as speed governors, pressure regulators.
3. Control systems specially adapted for particular apparatus, machines or processes are classified in the subclasses for the apparatus, machines or processes, provided that there is specific provision for control or regulation relevant to the special adaptation, either at a detailed level, (e.g. [A21B 1/40](#) : "for regulating temperature in bakers' ovens") or at a general level, (e.g. [B23K 9/095](#) : "for automatic control of welding parameters in arc welding"). Otherwise, classification is made in the most appropriate place in this subclass. ~~The following are lists of places where there is specific provision of the kind referred to above. Where such provision is at a detailed level, the places have been grouped according to the main groups of this subclass. Where the provision is at a general level (e.g. of a kind appropriate to more than one of the main groups specified in the lists, or to main groups [G05D 27/00](#) or [G05D 29/00](#) -), the places are listed under the title "General References". Places related to [G05D 1/00](#)~~

~~A01B 69/00 — Agricultural machines or implements —
A63H 17/36 — Toy vehicles —
B60V 1/11 — Air-cushion vehicles —~~

~~B62D 1/00 — Steering controls of motor vehicles or trailers, i.e. means for initiating a change of direction~~
~~B62D 6/00 — Arrangements for automatically controlling the steering depending on driving conditions~~
~~B62D 55/116 — Chassis of endless-tracked vehicles~~
~~B63H 25/00 — Marine steering; control of waterborne vessels~~
~~B64C 13/00 — to B64C 15/00 — Controlling aircraft~~
~~B64D 25/10 — Controlling attitude or direction of aircraft ejector seats~~
~~B64G 1/24 — Cosmonautic vehicles~~
~~F41G 7/00 — Self-propelled missiles~~
~~F42B 15/01 — Guided missiles~~
~~F42B 19/01 — Marine torpedoes — Places related to G05D 3/00~~
~~A43D 119/00 — Footwear manufacture~~
~~B21K 31/00 — Tool carriers in forging or pressing~~
~~B23B 39/26 — Pattern-controlled boring or drilling tools~~
~~B23D 1/30 — , B23D 3/06 — , B23D 5/04 — Planing or slotting machines controlled by copying device~~
~~B23H 7/18 — Electrode to workpiece spacing in electric discharge and electrochemical machining~~
~~B23K 26/02 — Workpiece in laser welding or cutting~~
~~B23K 37/04 — Workpiece in welding~~
~~B23K 37/06 — Molten metal in welding~~
~~B23Q 5/20 — Spindles in machine tools~~
~~B23Q 15/00 — , B23Q 16/00 — Tool or work position in machine tools~~
~~B23Q 35/00 — Tools controlled by pattern or master model~~
~~B24B 17/00 — Grinding controlled by patterns, drawings, magnetic tape or the like~~
~~B24B 47/22 — Starting position in grinding~~
~~B30B 15/24 — Actuating members in presses~~
~~B62D 55/116 — Chassis of tracked vehicles~~
~~B65H 23/18 — Web advancing mechanisms~~
~~E02F 3/43 — Dippers or buckets in dredgers~~
~~F15B 9/00 — Fluid-pressure servomotors with follow-up action~~
~~F24J 2/38 — Tracking of solar heat collectors~~
~~G03F 9/00 — Photomechanical production of patterned or textured surfaces~~
~~G11B 5/588 — Rotating heads in information storage systems~~
~~G21C 7/12 — Movement of control elements in nuclear reactors~~
~~Places related to G05D 5/00~~
~~A24B 7/14 — Tobacco cutting~~

~~B05C 11/02~~ Thickness of coating of fluent material on surface
~~B21B 37/16~~ Thickness, width, diameter or other transverse dimensions of the products of metal-rolling mills
~~C03B 18/04~~ Dimension of glass ribbon
~~D21F 7/06~~ Thickness of layer in paper making
Places related to ~~G05D 7/00~~
~~A45D 20/26~~ Air in hair drying helmets
~~A61M 5/168~~ Flow of media to the human body
~~B03C 3/36~~ Gases or vapour in electrostatic separators
~~B05C 11/10~~ Fluent material in coating devices
~~B67D 1/12~~ Dispensing beverages on draught
~~B67D 7/28~~ Transferring liquids
~~C10K 1/28~~ Gas purifiers
~~E21B 21/08~~ Flushing boreholes
~~E21B 43/12~~ Obtaining liquids from wells
~~F01D 17/00~~ Flow in non-positive-displacement machines or systems
~~F01M 1/16~~ Lubrication arrangements
~~F01P 7/00~~ Coolant flow in cooling devices
~~F02C 9/16~~ ,
~~F02C 9/50~~ Gas turbine working fluid
~~F16L 55/027~~ Throttle passages in pipes
~~F24F 11/00~~ Air flow or supply of heating or cooling fluids in air treatment arrangements
~~F26B 21/12~~ Air or gas flow in dryers
~~G01G 11/08~~ Continuous flow weighing apparatus
~~G21D 3/14~~ Coolant in nuclear power plant
Places related to ~~G05D 9/00~~
~~B01D 21/34~~ Liquid level in sedimentation arrangements
~~B41L 27/04~~ Ink level in printing, manifolding or duplicating arrangements
~~F22D 5/00~~ Feed water for boilers
~~H01J 1/10~~ , ~~H01J 13/14~~ Liquid pool electrodes in electric discharge tubes or lamps
Places related to ~~G05D 11/00~~
~~B01D 21/32~~ Density in sedimentation arrangements
~~B01F 15/04~~ Mixers
~~B24C 7/00~~ Abrasive blasts
~~B28C 7/00~~ Mixtures of clays or cements
~~B65G 53/66~~ Bulk material conveyers
~~F02K 3/075~~ Flow ratio in jet propulsion plants
Places related to ~~G05D 13/00~~
~~B21C 1/12~~ Drum speed in metal drawing
~~B23Q 15/00~~ Cutting velocity of tool or work
~~B30B 15/20~~ Ram speed in presses
~~B60K 31/00~~ Setting or limiting speed of vehicles
~~B60L 15/00~~ Electrically propelled vehicles
~~B64D 31/08~~ Cruising speed of aircraft
~~D01D 1/09~~ Feed rate in manufacture of artificial

filaments, threads, fibres, bristles or ribbons
D01G 15/36 Carding machines
D02H 13/14 Warping, beaming or leasing machines
D03D 51/16 Cyclically varying speed of looms
G01N 30/32 Speed of fluid carrier in chemical analysis
G11B 15/46 Filamentary or web record carriers or heads
for such carriers in information storage systems
G11B 19/28 Non filamentary, non web record carriers, or heads for such carriers in information storage systems
Places related to G05D 15/00
B25D 9/26 Portable percussive tools
B30B 15/22 Ram pressure in presses
B65H 59/00 Tension in filamentary material
{B65H 23/00, B65H 59/00} Tension in webs, tapes, filamentary material
B66D 1/50 Rope, cable or chain tension
D03D 49/04 Tension in looms
D05B 47/04 Tension in sewing machines
D21F 3/06 Pressure in paper-making machines
F26B 13/12 Drying fabrics
F26B 21/10 Pressure in dryers
G11B 15/43 Record carrier tension in information storage arrangements
Places related to G05D 16/00
B60C 23/00 Tyre pressure
B63C 11/08 Air within diving suit
B64D 13/00 Aircraft air-pressure
B65G 53/66 Bulk material conveyers
D01D 1/09 Manufacture of artificial filaments, threads, fibres, bristles or ribbons
E21B 21/08 Flushing boreholes
F01M 1/16 Lubrication arrangements
G01N 30/32 Pressure of fluid carrier in chemical analysis
H01J 7/14 Pressure in electric discharge tubes or lamps
H01K 1/52 Pressure in electric incandescent lamps
Places related to G05D 19/00
B25D 9/26 Portable percussion tools
B65G 27/32 Jigging conveyers
Places related to G05D 21/00
B01D 21/32 Density in sedimentation arrangements
B01D 53/30 Treating gases or vapours
G01N 30/34 Composition of fluid carrier in chemical analysis
Places related to G05D 22/00
A01G 25/16 Watering gardens, fields, sports grounds or the like
A01K 41/04 Poultry incubators

A24B 9/00 — Tobacco products —
F24F 11/00 — Air conditioning —
F26B 21/08 — Dryers — Places related to
G05D 23/00 —
A21B 1/40 — Bakers' ovens —
A45D 6/20 — Hair curlers —
B21C 31/00 — Metal extruding —
B60C 23/00 — Tyre temperature —
B64G 1/50 — Cosmonautic vehicles —
G03B 18/18 — , —
G03B 18/22 — Float baths in glass making —
D01D 1/09 — Manufacture of artificial filaments,
threads, fibres, bristles or ribbons —
D04B 35/30 — Knitting machines —
D06F 75/26 — Hand irons —
D21F 5/06 — Paper-making machines —
F01M 5/00 — Lubricant in lubrication arrangements —
F16N 7/08 — Arrangements for supplying oil or
unspecified —
lubricant from a reservoir —
F22G 5/00 — Steam superheat —
F26B 21/10 — Dryers —
G01N 30/30 — Temperature of fluid carrier in
chemical —
analysis —
H01M 10/60 — Electric storage cells —
H05B 6/06 — , —
H05B 6/50 — , —
H05B 6/68 — Dielectric, induction or microwave
heating —
H05G 1/36 — Anode of X-ray tube — Places
related to — G05D 25/00 —
B41B 21/08 — Photographic composing machines —
H01S 3/10 — , —
H05B 33/08 — , —
H05B 35/00 — to —
H05B 43/00 — Lasers and other light sources
General references —
A01J 5/007 — Milking machines —
B23K 9/095 — Welding parameters —
B23Q 35/00 — Copying —
B24B 17/00 — , —
B24B 49/00 — Grinding or polishing —
B24C 7/00 — Abrasive blasts —
B67D 1/12 — Dispensing beverages on draught —
G03G 21/20 — Electrographic, electrophotographic
or —
magnetographic processes —
H02P 5/00 — to —
H02P 9/00 — Dynamo electric motors or generators

The following are lists of places where there is specific provision of the kind referred to above. Where such provision is at a detailed level, the places have been grouped according to the main groups of this subclass. Where the provision is at a general level (e.g. of a kind appropriate to more than one of the main groups specified in the lists, or to main groups G05D 27/00 or G05D 29/00), the places are listed under the title "General References".

Places related to G05D 1/00

A01B 69/00 Agricultural machines or implements
A63H 17/36 Toy vehicles
B60V 1/11 Air-cushion vehicles
B62D 1/00 Steering controls of motor vehicles or trailers,
i.e. means for initiating a change of direction
B62D 6/00 Arrangements for automatically controlling the steering depending on driving conditions
B62D 55/116 Chassis of endless-tracked vehicles
B63H 25/00 Marine steering; control of waterborne vessels
B64C 13/00 to B64C 15/00 Controlling aircraft
B64D 25/10 Controlling attitude or direction of aircraft ejector seats
B64G 1/24 Cosmonautic vehicles
F41G 7/00 Self-propelled missiles
F42B 15/01 Guided missiles
F42B 19/01 Marine torpedoes
Places related to G05D 3/00
A43D 119/00 Footwear manufacture
B21K 31/00 Tool carriers in forging or pressing
B23B 39/26 Pattern-controlled boring or drilling tools
B23D 1/30 , B23D 3/06 , B23D 5/04
Planing or slotting machines controlled by copying device
B23H 7/18 Electrode to workpiece spacing in electric discharge and electrochemical machining
B23K 26/02 Workpiece in laser welding or cutting
B23K 37/04 Workpiece in welding
B23K 37/06 Molten metal in welding
B23Q 5/20 Spindles in machine tools
B23Q 15/00 , B23Q 16/00 Tool or work position in machine tools
B23Q 35/00 Tools controlled by pattern or master model
B24B 17/00 Grinding controlled by patterns, drawings, magnetic tape or the like
B24B 47/22 Starting position in grinding
B30B 15/24 Actuating members in presses
B62D 55/116 Chassis of tracked vehicles
B65H 23/18 Web-advancing mechanisms
E02F 3/43 Dippers or buckets in dredgers
F15B 9/00 Fluid-pressure servomotors with follow-up action
F24J 2/38 Tracking of solar heat collectors
G03F 9/00 Photomechanical production of patterned or textured surfaces
G11B 5/588 Rotating heads in information storage systems

G21C 7/12 Movement of control elements in nuclear reactors

Places related to G05D 5/00

A24B 7/14 Tobacco cutting
B05C 11/02 Thickness of coating of fluent material on surface
B21B 37/16 Thickness, width, diameter or other transverse dimensions of the products of metal-rolling mills
C03B 18/04 Dimension of glass ribbon
D21F 7/06 Thickness of layer in paper making

Places related to G05D 7/00

A45D 20/26 Air in hair drying helmets
A61M 5/168 Flow of media to the human body
B03C 3/36 Gases or vapour in electrostatic separators
B05C 11/10 Fluent material in coating devices
B67D 1/12 Dispensing beverages on draught
B67D 7/28 Transferring liquids
C10K 1/28 Gas purifiers
E21B 21/08 Flushing boreholes
E21B 43/12 Obtaining liquids from wells
F01D 17/00 Flow in non-positive-displacement machines or systems
F01M 1/16 Lubrication arrangements
F01P 7/00 Coolant flow in cooling devices
F02C 9/16 ,
F02C 9/50 Gas-turbine working fluid
F16L 55/027 Throttle passages in pipes
F24F 11/00 Air-flow or supply of heating or cooling fluids in air treatment arrangements
F26B 21/12 Air or gas flow in dryers
G01G 11/08 Continuous flow weighing apparatus
G21D 3/14 Coolant in nuclear power plant

Places related to G05D 9/00

B01D 21/34 Liquid level in sedimentation arrangements
B41L 27/04 Ink level in printing, manifolding or duplicating arrangements
F22D 5/00 Feed water for boilers
H01J 1/10 , H01J 13/14 Liquid pool electrodes in electric discharge tubes or lamps

Places related to G05D 11/00

B01D 21/32 Density in sedimentation arrangements
B01F 15/04 Mixers
B24C 7/00 Abrasive blasts

B28C 7/00 Mixtures of clays or cements
B65G 53/66 Bulk material conveyers
F02K 3/075 Flow ratio in jet-propulsion plants

Places related to G05D 13/00

B21C 1/12 Drum speed in metal drawing
B23Q 15/00 Cutting velocity of tool or work
B30B 15/20 Ram speed in presses
B60K 31/00 Setting or limiting speed of vehicles
B60L 15/00 Electrically-propelled vehicles
B64D 31/08 Cruising speed of aircraft
D01D 1/09 Feed rate in manufacture of artificial filaments, threads, fibres, bristles or ribbons
D01G 15/36 Carding machines
D02H 13/14 Warping, beaming or leasing machines
D03D 51/16 Cyclically varying speed of looms
G01N 30/32 Speed of fluid carrier in chemical analysis
G11B 15/46 Filamentary or web record carriers or heads for such carriers in information storage systems
G11B 19/28 Non-filamentary, non-web record carriers, or heads for such carriers in information storage systems

Places related to G05D 15/00

B25D 9/26 Portable percussive tools
B30B 15/22 Ram pressure in presses
B65H 59/00 Tension in filamentary material
{ B65H 23/00 , B65H 59/00 } Tension in webs, tapes, filamentary material
B66D 1/50 Rope, cable or chain tension
D03D 49/04 Tension in looms
D05B 47/04 Tension in sewing machines
D21F 3/06 Pressure in paper-making machines
F26B 13/12 Drying fabrics
F26B 21/10 Pressure in dryers
G11B 15/43 Record carrier tension in information storage arrangements

Places related to G05D 16/00

B60C 23/00 Tyre pressure
B63C 11/08 Air within diving suit
B64D 13/00 Aircraft air-pressure
B65G 53/66 Bulk material conveyers
D01D 1/09 Manufacture of artificial filaments, threads, fibres, bristles or ribbons
E21B 21/08 Flushing boreholes
F01M 1/16 Lubrication arrangements

G01N 30/32 Pressure of fluid carrier in chemical analysis
H01J 7/14 Pressure in electric discharge tubes or lamps
H01K 1/52 Pressure in electric incandescent lamps
Places related to G05D 19/00
B25D 9/26 Portable percussion tools
B65G 27/32 Jigging conveyers

Places related to G05D 21/00
B01D 21/32 Density in sedimentation arrangements
B01D 53/30 Treating gases or vapours
G01N 30/34 Composition of fluid carrier in chemical analysis

Places related to G05D 22/00
A01G 25/16 Watering gardens, fields, sports grounds or the like
A01K 41/04 Poultry incubators
A24B 9/00 Tobacco products
F24F 11/00 Air conditioning
F26B 21/08 Dryers

Places related to G05D 23/00
A21B 1/40 Bakers' ovens
A45D 6/20 Hair curlers
B21C 31/00 Metal extruding
B60C 23/00 Tyre temperature
B64G 1/50 Cosmonautic vehicles
C03B 18/18 ,
C03B 18/22 Float baths in glass making
D01D 1/09 Manufacture of artificial filaments, threads, fibres, bristles or ribbons
D04B 35/30 Knitting machines
D06F 75/26 Hand irons
D21F 5/06 Paper-making machines
F01M 5/00 Lubricant in lubrication arrangements
F16N 7/08 Arrangements for supplying oil or lubricant from a reservoir
F22G 5/00 Steam superheat
F26B 21/10 Dryers
G01N 30/30 Temperature of fluid carrier in chemical analysis
H01M 10/60 Electric storage cells
H05B 6/06 ,
H05B 6/50 ,
H05B 6/68 Dielectric, induction or microwave heating
H05G 1/36 Anode of X-ray tube

Places related to G05D 25/00
B41B 21/08 Photographic composing machines

H01S 3/10 ,
H05B 33/08 ,
H05B 35/00 to
H05B 43/00 Lasers and other light sources

General references

A01J 5/007 Milking machines
B23K 9/095 Welding parameters
B23Q 35/00 Copying
B24B 17/00 ,
B24B 49/00 Grinding or polishing
B24C 7/00 Abrasive blasts
B67D 1/12 Dispensing beverages on draught
G03G 21/20 Electrographic, electrophotographic
or
magnetographic processes
H02P 5/00 to
H02P 9/00 Dynamo-electric motors or generators

U G05D 1/00

Control of position, course or altitude of land, water, air, or space vehicles, e.g. automatic pilot (steering applicable only to other than landborne vehicles, e.g. three-dimensional steering applicable to both aircraft and submarines [B60K](#) ; construction or disposition of steering means on land vehicles [B62](#) , on waterborne vessels [B63](#) ; manual or automatic control of aircraft, e.g. using automatic pilot or radiated signal [B64C](#) ; radio navigation systems or analogous systems using other waves [G01S](#))

U G05D 1/02
G05D 1/021

- Control of position or course in two dimensions
- · {specially adapted to land vehicles}

NOTES

1. This group covers control of position or course in two dimensions specially adapted for land vehicles, i.e. control systems to define a trajectory for a land vehicle, and to take suitable actions to make the vehicle follow said trajectory.

2. Relationships with other classification places.

Subclass [G01C](#) covers navigation in general, i.e. determining the position and course of land vehicles, ships, aircraft, and space vehicles.

Subclass [G01S](#) covers radio, sonar or lidar navigation systems, i.e. navigation by use of radio, acoustic or optical waves, or analogue arrangements using other electromagnetic waves.

Subclass [G08G](#) covers navigation systems for traffic control purposes, i.e. systems in which the navigation is not performed autonomously by or in the vehicle, but where the vehicles are guided by instructions transmitted to them.

Aspects of navigation systems that are important per se should also be classified in the relevant groups of [G01C](#) (see for example list under "Informative References" below).

Aspects of radio, sonar or lidar navigation systems that are important per se should also be classified in the relevant groups of [G01S](#) (see for example list under "Informative References" below).

Aspects of navigation systems for traffic purposes that are important per se should also be classified in the relevant groups of [G08G](#) (see for example list under "Informative References" below).

3. Informative References.

Attention is drawn to the following places, which could be of interest for search:

- navigation, i.e. determining the position and course of land vehicles, ships, aircraft, and space vehicles [G01C 21/00](#)
- measuring distance traversed on the ground by vehicles, e.g. using odometers [G01C 22/00](#)
- position-fixing by co-ordinating a plurality of determinations of direction or position lines [G01S 5/00](#)
- determining distance or velocity using waves and not using reflection or reradiation of waves [G01S 11/00](#)
- radar systems specially designed for traffic control [G01S 13/91](#)
- radar systems specially designed for for anti-collision purposes [G01S 13/93](#)
- sonar systems specially designed for for anti-collision purposes [G01S 15/93](#)
- lidar systems specially designed for for anti-collision purposes [G01S 17/93](#)
- traffic control systems for road vehicles [G08G 1/00](#)
- monitoring the location of fleet of vehicles in traffic control systems [G08G 1/127](#)
- anti-collision traffic control systems [G08G 1/16](#)

Project: N/A (G06F)

- U G06F 7/00 Methods or arrangements for processing data by operating upon the order or content of the data handled (logic circuits [H03K 19/00](#))**
- U G06F 7/38
 - Methods or arrangements for performing computations using exclusively denominational number representation, e.g. using binary, ternary, decimal representation
- U G06F 7/48
 - • using non-contact-making devices, e.g. tube, solid state device; using unspecified devices
- U G06F 7/50
 - • • Adding; Subtracting ([G06F 7/483](#) to [G06F 7/491](#), [G06F 7/544](#) take precedence)
- G06F 7/505
 - • • • in bit-parallel fashion, i.e. having a different digit-handling circuit for each denomination {(half or full adders [G06F 7/501](#))}
- U G06F 11/00 Error detection; Error correction; Monitoring (methods or arrangements for verifying the correctness of marking on a record carrier [G06K 5/00](#); in information storage based on relative movement between record carrier and transducer [G11B](#), e.g. [G11B 20/18](#); in static stores [G11C](#); coding, decoding or code conversion, for error detection or error correction, in general [H03M 13/00](#))**
- NOTE**
In this group the indexing codes of [G06F 1/00](#) to [G06F 15/00](#) are added
- U G06F 11/07
 - responding to the occurrence of a fault, e.g. fault tolerance
- U G06F 11/16
 - • Error detection or correction of the data by redundancy in hardware
- G06F 11/18
 - • • {using passive fault-masking of the redundant circuits {(error detection by comparing the output of redundant processing systems with continued operation after detection of the error [G06F 11/165](#))}
- U G06F 15/00 Digital computers in general (details [G06F 1/00](#) to [G06F 13/00](#)); Data processing equipment in general (neural networks for image data processing [G06T](#))**
- U G06F 15/16
 - Combinations of two or more digital computers each having at least an arithmetic unit, a programme unit and a register, e.g. for a simultaneous processing of several programmes {(coordinating programme control therefor [G06F 9/52](#); in regulating and control system [G05B](#))}

- G06F 15/177
- • {Initialisation or configuration control {(processor initialisation [G06F 9/4405](#))}}
- U G06F 21/00**
- Security arrangements for protecting computers, components thereof, programs or data against unauthorised activity {(address-based protection against unauthorised use of memory [G06F 12/14](#); record carriers for use with machines and with at least a part designed to carry digital markings [G06K 19/00](#); preventing unauthorised reproduction or copying of disk-type recordable media [G11B 20/00](#); secret or secure communication [H04L 9/00](#); digital watermarking on images [H04N 1/32](#); protection in video systems or pay television [H04N 7/16](#))}**
- G06F 21/10
- {Protecting distributed programs or content, e.g. vending or licensing of copyrighted material}
- G06F 21/12
- • {Protecting executable software}
- G06F 21/14
- • • {against software analysis or reverse engineering, e.g. by obfuscation}
- G06F 21/16
- • {Program or content traceability, e.g. by watermarking (digital watermarking on images [H04N 1/32](#))}
- G06F 21/30
- {Authentication, i.e. establishing the identity or authorisation of security principals}
- G06F 21/31
- • {User authentication}
- G06F 21/32
- • • {using biometric data, e.g. fingerprints, iris scans or voiceprints}
- G06F 21/33
- • • {using certificates}
- G06F 21/34
- • • {involving the use of external additional devices, e.g. dongles or smart cards}
- G06F 21/35
- • • • {communicating wirelessly}
- G06F 21/36
- • • {by graphic or iconic representation}
- G06F 21/40
- • • {by quorum, i.e. whereby two or more security principals are required}
- G06F 21/41
- • • {where a single sign-on provides access to a plurality of computers}
- G06F 21/42
- • • {using separate channels for security data}
- G06F 21/43
- • • • {wireless channels}
- G06F 21/44
- • {Program or device authentication}
- G06F 21/45
- • {Structures or tools for the administration of authentication}
- G06F 21/46
- • • {by designing passwords or checking the strength of passwords}
- G06F 21/50
- {Monitoring users, programs or devices to maintain the integrity of platforms, e.g. of processors, firmware or operating systems}
- G06F 21/51
- • {at application loading time, e.g. accepting, rejecting, starting or inhibiting executable software based on integrity or source reliability}
- G06F 21/52
- • {during program execution, e.g. stack integrity {; Preventing unwanted data erasure; Buffer overflow}
- G06F 21/53
- • • {by executing in a restricted environment, e.g. sandbox or secure virtual machine}
- G06F 21/54
- • • • {by adding security routines or objects to programs}
- G06F 21/55
- • {Detecting local intrusion or implementing counter-measures}
- G06F 21/56
- • • {Computer malware detection or handling, e.g. anti-virus arrangements}
- G06F 21/57
- • {Certifying or maintaining trusted computer platforms, e.g. secure boots or power-downs, version controls, system software checks, secure updates or assessing vulnerabilities}
- G06F 21/60
- {Protecting data}
- G06F 21/62
- • {Protecting access to data via a platform, e.g. using keys or access control rules}

- G06F 21/64 • • {Protecting data integrity, e.g. using checksums, certificates or signatures}
- G06F 21/70 • {Protecting specific internal or peripheral components, in which the protection of a component leads to protection of the entire computer}
- G06F 21/71 • • {to assure secure computing or processing of information}
- G06F 21/72 • • • {in cryptographic circuits}
- G06F 21/73 • • • {by creating or determining hardware identification, e.g. serial numbers}
- G06F 21/74 • • • {operating in dual or compartmented mode, i.e. at least one secure mode}
- G06F 21/75 • • • {by inhibiting the analysis of circuitry or operation}
- G06F 21/76 • • • {in application-specific integrated circuits [ASICs] or field-programmable devices, e.g. field-programmable gate arrays [FPGAs] or programmable logic devices [PLDs]}
- G06F 21/77 • • • {in smart cards}
- G06F 21/78 • • {to assure secure storage of data (address-based protection against unauthorised use of memory [G06F 12/14](#); record carriers for use with machines and with at least a part designed to carry digital markings [G06K 19/00](#))}
- G06F 21/79 • • • {in semiconductor storage media, e.g. directly-addressable memories}
- G06F 21/80 • • • {in storage media based on magnetic or optical technology, e.g. disks with sectors (preventing unauthorised reproduction or copying of disk-type recordable media [G11B 20/00](#))}
- G06F 21/81 • • {by operating on the power supply, e.g. enabling or disabling power-on, sleep or resume operations}
- G06F 21/82 • • {Protecting input, output or interconnection devices}
- G06F 21/83 • • • {input devices, e.g. keyboards, mice or controllers thereof}
- G06F 21/84 • • • {output devices, e.g. displays or monitors}
- G06F 21/85 • • • {interconnection devices, e.g. bus-connected or in-line devices}
- G06F 21/86 • • {Secure or tamper-resistant housings}
- G06F 21/87 • • • {by means of encapsulation, e.g. for integrated circuits}
- G06F 21/88 • • {Detecting or preventing theft or loss}

Project: N/A (G07B)**G07B 15/00**

Arrangements or apparatus for collecting fares, tolls or entrance fees at one or more control points (handling coins or paper currency [G07D](#); apparatus for vending or hiring articles or services activated by coins, credit cards, paper currency or the like [G07F 7/00](#), [G07F 17/00](#))

NOTES

1. Data processing aspects of payment systems or protocols relating to toll, entrance fee or fare collection, e.g. in road pricing or congestion charging, are also classified in [G06Q 20/00](#).

2. { This group covers also:

~~-car rental systems;~~

~~-systems for reserving and using access tickets, e.g. check-in systems~~

• *car rental systems;*

• *systems for reserving and using access tickets, e.g. check-in systems*

}

Project: N/A (G08C)**U G08C 19/00**

Electric signal transmission systems ([G08C 17/00](#) takes precedence)

G08C 19/36

- using optical means to convert the input signal (analogue/digital converters per se [H03M 1/00](#); *{optical analogue digital converters [G02F 7/00](#); contains no documents, see [G01D 5/26](#)}*; ~~{optical analogue digital converters [G02F 7/00](#); contains no documents, see [G01D 5/26](#)}~~

Project: N/A (G09G)**U G09G 5/00**

Control arrangements or circuits for visual indicators common to cathode-ray tube indicators and other visual indicators (image data processing or generation, in general [G06T](#))

U G09G 5/02

- characterised by the way in which colour is displayed {(details of colour display specific for CRTs [G09G 1/28](#); specific for flat matrix panels other than liquid crystal displays [G09G 3/2003](#); specific for liquid crystal displays [G09G 3/3607](#))}

G09G 5/04

- · ~~{using circuits for interfacing with colour displays}~~

Project: N/A (G11B)**U G11B 3/00**

Recording by mechanical cutting, deforming or pressing, e.g. of grooves or pits; Reproducing by mechanical sensing; Record carriers therefor ([G11B 11/00](#), ~~{[G11B 13/00](#)}~~ take precedence; {recording by cutting or deforming using laser beam [G11B 7/00](#), using electron beam [G11B 9/10](#))}

U G11B 3/02

- Arrangements of heads (styli [G11B 3/44](#))

U G11B 3/08

- · Raising, lowering, traversing otherwise than for transducing, arresting, or holding-up heads against record carriers {(for transducing [G11B 3/12](#), [G11B 3/34](#))}

G11B 3/085

- · · ~~{using automatic means}~~ ([G11B 3/095](#) takes precedence ~~{~~; {if particularly adapted for record-changers see [G11B 17/16](#) and subgroups })

U G11B 5/00

Recording by magnetisation or demagnetisation of a record carrier; Reproducing by magnetic means; Record carriers therefor ([G11B 11/00](#) {and [G11B 13/00](#)} take precedence)

NOTE

Subgroups [G11B 5/02](#) to [G11B 5/86](#) take precedence over subgroups [G11B 5/004](#) to [G11B 5/016](#)

G11B 5/48

- Disposition or mounting of heads {or head supports} relative to record carriers ~~{mounting of head within housing [G11B 5/105](#)}~~ (*mounting of head within housing [G11B 5/105](#)*); arrangements of heads, e.g. for scanning the record carrier to increase the relative speed (driving of both record carriers and head [G11B 15/18](#); guiding record carriers [G11B 15/60](#); head selecting circuits [G11B 15/12](#))}

U G11B 23/00

Record carriers not specific to the method of recording or reproducing; Accessories, e.g. containers, specially adapted for co-operation with the recording or reproducing apparatus {Intermediate mediums; Apparatus or processes specially adapted for their manufacture (processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. [B29](#), [B41M](#), [B05D](#), [C08L](#), [F16N](#))}

NOTE

In group [G11B 23/00](#), recording or reproducing apparatus does not include the record carriers.

- G11B 23/0007
- {Circuits or methods for reducing noise, for correction of distortion, or for changing density of recorded information, ~~volume-compression-or-expansion circuits per se H03G 7/00~~ (*volume compression or expansion circuits per se H03G 7/00*)}

NOTE

This group is closed down and will in due course be transferred to [G11B 20/22](#) and [G11B 20/24](#) and subgroups

Project: N/A (G11C)

- U G11C 13/00 **Digital stores characterised by the use of storage elements not covered by groups [G11C 11/00](#), [G11C 23/00](#) to [G11C 25/00](#)**
- G11C 13/02
- using elements whose operation depends upon chemical change ~~{{G11C 13/0009 takes precedence}; using electrochemical charge G11C 11/00}~~; *using electrochemical charge G11C 11/00*
- U G11C 19/00 **Digital stores in which the information is moved stepwise, e.g. shift register (counting chains [H03K 23/00](#)){stack stores, push-down stores (linear pulse counters [H03K 23/54](#), pulse distributors [H03K 5/15](#), methods and arrangements for shifting data [G06F 5/01](#))}**
- U G11C 19/02
- using magnetic elements ([G11C 19/14](#) takes precedence)
- U G11C 19/08
- · using thin films in plane structure {(thin magnetic films and apparatus or processes specially adapted for manufacturing or assembling the same [H01F 10/00](#), [H01F 41/14](#))}
- U G11C 19/0875
- · · {Organisation of a plurality of magnetic shift registers (FIFO [G06F 5/06](#); LIFO [G06F 7/78](#))}
- G11C 19/0883
- · · · {Means for switching magnetic domains from one path into another path, i.e. transfer switches, swap gates, decoders ~~logic circuits using magnetic domains H03K 19/168~~ (*logic circuits using magnetic domains H03K 19/168*)}

Project: N/A (G21)

G21 - G21

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Project: N/A (H01H)

- U H01H 51/00 **Electromagnetic relays (relays using the dynamo-electric effect [H01H 53/00](#))**
- U H01H 51/30
- specially adapted for actuation by alternating current
- H01H 51/32
- · Frequency relays; Mechanically-tuned relays {(switched devices for electric time devices [G04C](#); electromechanical resonators [H03H 9/00](#); telegraph circuits with oscillating relay [H04L 25/205](#); *mechanical means for producing a desired natural frequency of operation of the contacts H01H 50/74*)}; ~~mechanical means for producing a desired natural frequency of operation of the contacts H01H 50/74~~

Project: N/A (H01L)

U H01L 27/00 **Devices consisting of a plurality of semiconductor or other solid state components formed in or on a common substrate (processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof [H01L 21/70](#), [H01L 31/00](#) to [H01L 51/00](#); details thereof [H01L 23/00](#), [H01L 29/00](#) to [H01L 51/00](#); assemblies consisting of a plurality of individual solid state devices [H01L 25/00](#); assemblies of electrical components in general [H05K](#))**

NOTE

In this group, in the absence of an indication to the contrary, classification is made in the last appropriate place.

U H01L 27/02 · including semiconductor components specially adapted for rectifying, oscillating, amplifying or switching and having at least one potential-jump barrier or surface barrier; including integrated passive circuit elements with at least one potential-jump barrier or surface barrier

U H01L 27/04 · · the substrate being a semiconductor body

U H01L 27/08 · · · including only semiconductor components of a single kind

H01L 27/085 · · · · {including field-effect components only}

U H01L 29/78 · · · · · with field effect produced by an insulated gate {([H01L 29/7725](#), [H01L 29/775](#), [H01L 29/778](#) take precedence)}

U H01L 29/80 · · · · · with field effect produced by a PN or other rectifying junction gate, {i.e. potential-jump barrier}

U H01L 41/00 **Piezo-electric devices in general; Electrostrictive devices in general; Magnetostrictive devices in general; Processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof; Details thereof (devices consisting of a plurality of solid-state components formed in or on a common substrate [H01L 27/00](#))**

WARNING

Groups [H01L 41/23-H01L 41/47](#) are incomplete pending reclassification of documents from group [H01L 41/22](#).

Groups [H01L 41/23-H01L 41/47](#) and [H01L 41/22](#) should be considered in order to perform a complete search.

U H01L 41/08 · Piezo-electric or electrostrictive devices

H01L 41/09 · · {with electrical input and mechanical output {e.g. actuators, vibrators}} (in frequency selective networks [H03H 9/00](#))

U H01L 2224/00 **Indexing scheme for arrangements for connecting or disconnecting semiconductor or solid-state bodies and methods related thereto as covered by [H01L 24/00](#)**

U H01L 2224/01 · Means for bonding being attached to, or being formed on, the surface to be connected, e.g. chip-to-package, die-attach, "first-level" interconnects; Manufacturing methods related thereto

U H01L 2224/10 · · Bump connectors; Manufacturing methods related thereto

U H01L 2224/12 · · · Structure, shape, material or disposition of the bump connectors prior to the connecting process

U H01L 2224/13 · · · · of an individual bump connector

U H01L 2224/13001 · · · · · Core members of the bump connector

U H01L 2224/13099 · · · · · · Material

- U H01L 2224/13198 with a principal constituent of the material being a combination of two or more materials in the form of a matrix with a filler, i.e. being a hybrid material, e.g. segmented structures, foams
- U H01L 2224/13298 Fillers
- U H01L 2224/13399 Coating material
- U H01L 2224/13486 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2224/13487 Ceramics, e.g. crystalline carbides, nitrides or oxides
~~[glass ceramics H01L 2224/13488]~~(glass ceramics
H01L 2224/13488)
- U H01L 2224/1354 Coating
- U H01L 2224/13599 Material
- U H01L 2224/13698 with a principal constituent of the material being a combination of two or more materials in the form of a matrix with a filler, i.e. being a hybrid material, e.g. segmented structures, foams
- U H01L 2224/13798 Fillers
- U H01L 2224/13799 Base material
- U H01L 2224/13886 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2224/13887 Ceramics, e.g. crystalline carbides, nitrides or oxides
~~[glass ceramics H01L 2224/13888]~~(glass ceramics
H01L 2224/13888)
- U H01L 2224/26 . . . Layer connectors, e.g. plate connectors, solder or adhesive layers; Manufacturing methods related thereto
- U H01L 2224/28 . . . Structure, shape, material or disposition of the layer connectors prior to the connecting process
- U H01L 2224/29 of an individual layer connector
- U H01L 2224/2954 Coating
- U H01L 2224/29599 Material
- U H01L 2224/29698 with a principal constituent of the material being a combination of two or more materials in the form of a matrix with a filler, i.e. being a hybrid material, e.g. segmented structures, foams
- U H01L 2224/29798 Fillers
- U H01L 2224/29899 Coating material
- U H01L 2224/29986 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2224/29987 Ceramics, e.g. crystalline carbides, nitrides or oxides
~~[glass ceramics H01L 2224/29988]~~(glass ceramics
H01L 2224/29988)
- U H01L 2224/34 . . . Strap connectors, e.g. copper straps for grounding power devices; Manufacturing methods related thereto
- U H01L 2224/36 . . . Structure, shape, material or disposition of the strap connectors prior to the connecting process
- U H01L 2224/37 of an individual strap connector
- U H01L 2224/37001 Core members of the connector
- U H01L 2224/37099 Material
- U H01L 2224/37198 with a principal constituent of the material being a combination of two or more materials in the form of a matrix with a filler, i.e. being a hybrid material, e.g. segmented structures, foams

- U H01L 2224/37199 Material of the matrix
- U H01L 2224/37286 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2224/37287 Ceramics, e.g. crystalline carbides, nitrides or oxides [\[glass ceramics H01L 2224/37288\]](#)[\(glass ceramics H01L 2224/37288\)](#)
- U H01L 2224/37298 Fillers
- U H01L 2224/37399 Coating material
- U H01L 2224/37486 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2224/37487 Ceramics, e.g. crystalline carbides, nitrides or oxides [\[glass ceramics H01L 2224/37488\]](#)[\(glass ceramics H01L 2224/37488\)](#)
- U H01L 2224/80 Methods for connecting semiconductor or other solid state bodies using means for bonding being attached to, or being formed on, the surface to be connected
- U H01L 2224/82 by forming build-up interconnects at chip-level, e.g. for high density interconnects [HDI]
- U H01L 2224/822 Applying energy for connecting
- H01L 2224/82237 using electron beam, [electron beam in general B23K 15/00](#)[\(electron beam in general B23K 15/00\)](#)
- U H01L 2224/84 using a strap connector
- U H01L 2224/8438 Bonding interfaces outside the semiconductor or solid-state body
- U H01L 2224/84399 Material
- U H01L 2224/84498 with a principal constituent of the material being a combination of two or more materials in the form of a matrix with a filler, i.e. being a hybrid material, e.g. segmented structures, foams
- U H01L 2224/84499 Material of the matrix
- U H01L 2224/84586 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2224/84587 Ceramics, e.g. crystalline carbides, nitrides or oxides [\[glass ceramics H01L 2224/84588\]](#)[\(glass ceramics H01L 2224/84588\)](#)
- U H01L 2924/00** **Indexing scheme for arrangements or methods for connecting or disconnecting semiconductor or solid-state bodies as covered by H01L 24/00**
- U H01L 2924/15 Details of package parts other than the semiconductor or other solid state devices to be connected
- U H01L 2924/161 Cap
- U H01L 2924/1615 Shape
- U H01L 2924/16152 Cap comprising a cavity for hosting the device, e.g. U-shaped cap
- U H01L 2924/1617 Cavity coating
- U H01L 2924/16171 Material
- U H01L 2924/16173 with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2924/16174 Ceramics, e.g. crystalline carbides, nitrides or oxides [\[glass ceramics H01L 2224/16175\]](#)[\(glass ceramics H01L 2224/16175\)](#)

Project: N/A (H01S)

- U H01S 5/00** **Semiconductor lasers {(superluminescent diodes [H01L 33/0045](#))}**
- U H01S 5/02 Structural details or components not essential to laser action

- H01S 5/022
 - • {Mountings; -Housings {(packaging and electrical lead-through per se [H01L 23/00](#))}}
- U H01S 5/06
 - Arrangements for controlling the laser output parameters, e.g. by operating on the active medium (transmission systems employing light [H04B 10/00](#))
- U H01S 5/068
 - • Stabilisation of laser output parameters ([H01S 5/0625](#) takes precedence)
- H01S 5/0683
 - • • {by monitoring the optical output parameters}

Project: N/A (H04B)

- U H04B 7/00
 - **Radio transmission systems, i.e. using radiation field ([H04B 10/00](#), [H04B 15/00](#) take precedence)**
- U H04B 7/24
 - for communication between two or more posts (for selecting [H04W](#); {wireless communication networks [H04W](#)})
- U H04B 7/26
 - • at least one of which is mobile
- U H04B 7/2662
 - • • {Arrangements for Wireless System Synchronisation}
- H04B 7/2668
 - • • • {Arrangements for Wireless Code-Division Multiple Access [CDMA] System Synchronisation, for code acquisition [H04B 1/7075](#), for code tracking [H04B 1/7085](#) (for code acquisition [H04B 1/7075](#), for code tracking [H04B 1/7085](#))}

Project: N/A (H04J)

- U H04J 3/00
 - **Time-division multiplex systems ([H04J 14/00](#) takes precedence; relay systems [H04B 7/14](#); selecting techniques [H04Q](#))**
- U H04J 3/16
 - in which the time allocation to individual channels within a transmission cycle is variable, e.g. to accommodate varying complexity of signals, to vary number of channels transmitted ([H04J 3/17](#), [H04J 3/24](#) take precedence)
- U H04J 3/1605
 - • {Fixed allocated frame structures}
- U H04J 3/1652
 - • • {Optical Transport Network [OTN]}
- H04J 3/1658
 - • • • {carrying packets or ATM cells; ([H04J 3/1664](#) takes precedence for payloads with different packet types) [H04J 3/1664](#) takes precedence for payloads with different packet types}

Project: N/A (H04L)

- U H04L 25/00
 - **Baseband systems**
- U H04L 25/02
 - Details (circuits in general for handling pulses [H03K](#); in line transmission systems in general [H04B 3/02](#)); {Arrangements for supplying electrical power along data transmission lines (systems for transmitting signals via power distribution lines [H04B 3/54](#))}
- H04L 25/0264
 - • {Arrangements for coupling to transmission lines (duplexing arrangements [H04L 5/14](#); line equalisers, line build-out devices [H04L 25/03878](#))-}; line equalisers, line build-out devices [H04L 25/03878](#)}

Project: N/A (H04M)

- U H04M 7/00
 - **Interconnection arrangements between switching centres (transmission arrangements in general [H04B](#); {interconnection arrangements between PSTN/ISDN switching centres [H04Q 3/00](#)})**
- H04M 7/14
 - {in systems involving main and subordinate switching centres}
 - WARNING
 - Not complete, see also other subgroups of [H04M 7/00](#)

- U H04M 11/00** **Telephonic communication systems adapted for combination with other electrical systems**
- U H04M 11/06 · Simultaneous speech and telegraphic or other data transmission over the same conductors (telegraphy in general [H04L](#))
- H04M 11/068 · · {using time division multiplex techniques; (*integrated services digital networks H04Q 11/0428*)-~~integrated services digital networks H04Q 11/0428~~}

Project: N/A (H04N)

- U H04N 9/00** **Details of colour television systems**
- U H04N 9/04 · Picture signal generators
- H04N 9/045 · · {using solid-state devices ([H04N 9/11](#) takes precedence ; *solid state picture signal generators H01L 31/00*)-}; ~~solid state picture signal generators H01L 31/00~~}
- U H04N 21/00** **Selective content distribution, e.g. interactive television, VOD [Video On Demand] (broadcast communication [H04H](#); arrangements, apparatus, circuits or systems for communication control or processing being characterised by a protocol [H04L 29/06](#); {broadcast or conference over packet-switching networks [H04L 12/18](#), } real-time bi-directional transmission of motion video data [H04N 7/14](#))**

NOTES

1. This group covers :

- interactive video distribution processes, systems, or elements thereof, which are characterised by point-to-multipoint system configurations, and which are mainly used for motion video data unidirectional distribution or delivery resulting from interactions between systems operators, e.g. access or service providers, or users e.g. subscribers, and system elements.
- such systems include dedicated communication systems, such as television distribution systems, which primarily distribute or deliver motion video data in the manner indicated, which may, in addition, provide a framework for further, diverse data communications or services in either unidirectional or bi-directional form. However, video will occupy most of the downlink bandwidth in the distribution process.
- typically, system operators interface with transmitter-side elements or users' interface with receiver-side elements in order to facilitate, through interaction with such elements, the dynamic control of data processing or data flow at various points in the system. This interaction is typically occasional or intermittent in nature.
- processes, systems or elements thereof specially adapted to the generation, distribution and processing of data, which is either associated with video content, e.g. metadata, ratings, or related to the user or his environment and which has been actively or passively gathered. This data is either used to facilitate interaction or to alter or target the content.

2. In this main group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place

3. In this main group, the following terms and expressions are used with the meaning indicated:

additional data - designates still pictures, textual, graphical or executable data such as software. It is used to convey supplemental information and can be generated prior to or during the distribution process itself, e.g. metadata, keys.

content designates video or audio streams, which may be combined with additional data. Video data will always be present and occupy most of the downlink bandwidth in the distribution process

server - designates an apparatus designed for adapting the content received from the content provider to the distribution network. It also

manages the distribution to client devices or intermediate components over a network. Further servers may also be present for gathering or generating additional data, e.g. rights management server

additional data server - designates a server, which sole purpose is the distribution or management of additional data. It is not in charge of the distribution of video or audio data

client - designates an apparatus such as a TV receiver, a set-top-box, a PC-TV, a mobile appliance (e.g. mobile phone or receiver in a vehicle), for receiving video, audio and possibly additional data from one or several servers or intermediate components via a network for further processing, storing or displaying. It can also transmit this data on a home-based local network to further devices, e.g. a home server transmitting video to PCs and set-top-boxes within a home.

local network - pertains to a restricted area, e.g. a home or a vehicle, and designates the link between a client and its peripheral devices

network - is to be distinguished from "local network": "network" designates the link between the server and the clients, or between the server and the intermediate components, or between the intermediate components and the clients, or between remotely located clients

distribution - encompasses broadcasting, multicasting and unicasting techniques for transmitting content from one or more sources to one or more receiving stations. The distribution follows a request by a receiving station to the source, e.g. VOD or from a customization of the content by the source, e.g. targeting advertisements to a demographic group in a unidirectional or bidirectional system. Additionally, distribution encompasses techniques where the client acts as a source and another client acts as a receiving station, e.g. a peer-to-peer system for sharing video among client devices

end-user - designates a physical person, e.g. a TV viewer, who consumes the content using the client device. He is the final recipient of the content distributed by the server

interaction - covers actions occurring between or among two or more objects that have an effect upon one another, wherein objects comprise users, system operators, system elements, or content. The user may interact with content locally at the client device, e.g. for requesting additional data stored within the client device. The user may interact with content remotely through a server e.g. for VOD playback control or for uploading video to a server. The client device may interact with the content e.g. selecting content based upon the user profile. The client device may interact with a server using a return channel, e.g. for authenticating client or uploading client hardware capabilities. The server may interact with a client device, e.g. to force a client to tune to an advertisement channel

upstream - designates the direction of data flow towards the source, e.g. a server receiving a request via a mobile phone network

downstream - designates the direction of data flow towards a client, e.g. a client receiving data originating from a server elementary stream An elementary stream (ES) as defined by the MPEG system layer designates the output of an audio or video encoder

- H04N 21/20
 - {Servers specifically adapted for the distribution of content, e.g. VOD servers; Operations thereof}
- H04N 21/21
 - • {Server components or server architectures}
- H04N 21/214
 - • • {Specialised server platform, e.g. server located in an airplane, hotel, hospital {(arrangements specially adapted for local area broadcast systems [H04H 20/61](#))}}
- H04N 21/222
 - • • {Secondary servers, e.g. proxy server, cable television head-end {(intermediate processing or storage in data networks [H04L 29/08702](#))}}
- H04N 21/2225
 - • • • {local VOD servers}

- H04N 21/23
 - • {Processing of content or additional data; -Elementary server operations; -Server middleware}
- H04N 21/231
 - • • {Content storage operation, e.g. caching movies for short term storage, replicating data over plural servers, prioritizing data for deletion}
- H04N 21/2312
 - • • • {Data placement on disk arrays {(data placement in general [G06F 3/0604](#))}
- H04N 21/2315
 - • • • • {using interleaving}
- H04N 21/2318
 - • • • • {using striping}
- H04N 21/233
 - • • {Processing of audio elementary streams {(details of formatting and decoding of an encoded audio signal representation into a data stream for transmission or storage purposes [G10L 19/167](#); arrangements characterised by components specially adapted for monitoring, identification or recognition of audio in broadcast systems [H04H 60/58](#))}
- H04N 21/234
 - • • {Processing of video elementary streams, e.g. splicing of {content} streams, manipulating MPEG-4 scene graphs {(video encoding or transcoding processes per se [H04N 19/00](#))}
- H04N 21/2343
 - • • • {involving reformatting operations of video signals for distribution or compliance with end-user requests or end-user device requirements {(media manipulation, adaptation or conversion at the source in one way streaming for real-time multimedia communications [H04L 29/06489](#); video transcoding [H04N 19/40](#))}
- H04N 21/2347
 - • • • {involving video stream encryption (arrangements for secret or secure communication [H04L 9/00](#), analogue secrecy systems [H04N 7/16](#) {; Arrangements using cryptography for the use of broadcast information or broadcast-related information [H04H 60/23](#); arrangements for preventing the taking of data from a data transmission channel without authorisation [H04L 12/22](#); security arrangements in wireless networks [H04W 12/00](#))}}
- H04N 21/235
 - • • {Processing of additional data, e.g. scrambling of additional data, processing content descriptors {(arrangements for simultaneous broadcast of plural pieces of information [H04H 20/28](#))}
- U H04N 21/236
 - • • • Assembling of a multiplex stream, e.g. transport stream, by combining a video stream with other content or additional data, e.g. inserting a Uniform Resource Locator [URL] into a video stream, multiplexing software data into a video stream; Remultiplexing of multiplex streams; Insertion of stuffing bits into the multiplex stream, e.g. to obtain a constant bit-rate; Assembling of a packetized elementary stream {(multiplexing of data packets for data networks, e.g. RTP/UDP [H04L 65/00](#); stereoscopic image multiplexing or transmission [H04N 13/0003](#))}
- H04N 21/2362
 - • • • • {Generation or processing of Service Information [SI]}
- H04N 21/2365
 - • • • • {Multiplexing of several video streams}
- H04N 21/2368
 - • • • • {Multiplexing of audio and video streams}
- H04N 21/237
 - • • • {Communication with additional data server}
- H04N 21/238
 - • • • {Interfacing the downstream path of the transmission network, e.g. adapting the transmission rate of a video stream to network bandwidth; -Processing of multiplex streams {(hybrid Fiber Coaxial HFC networks for downstream channel allocation for video distribution [H04L 12/2801](#); flow control in packet networks [H04L 12/569](#); formation of RTP packets [H04L 29/06176](#); application layer Quality of Service and content dependent routing [H04L 29/08945](#))}
- H04N 21/2381
 - • • • • {Adapting the multiplex stream to a specific network, e.g. an Internet Protocol [IP] network {(transmission of MPEG streams over ATM [H04L 12/5601](#))}

- H04N 21/2385
 - • • • {Channel allocation ([H04N 21/266](#) takes precedence); -Bandwidth allocation ([H04N 21/24](#) takes precedence {; allocation of channels according to the instantaneous demands of the users in time-division multiplex systems [H04J 3/1682](#); arrangements for maintenance or administration in data switching networks involving bandwidth and capacity management [H04L 12/2439](#); Admission control, resource allocation in open networks [H04L 12/5692](#); negotiating bandwidth in wireless networks [H04W 28/16](#)}}}
- H04N 21/2387
 - • • • {Stream processing in response to a playback request from an end-user, e.g. for trick-play}
- H04N 21/2389
 - • • • {Multiplex stream processing, e.g. multiplex stream encrypting}
- H04N 21/24
 - • • {Monitoring of processes or resources, e.g. monitoring of server load, available bandwidth, upstream requests {(monitoring of server performance or load [G06F 11/34](#); arrangements for observation, testing or troubleshooting for broadcast or for distribution combined with broadcast [H04H 20/12](#))}}
- H04N 21/241
 - • • {Operating System [OS] processes, e.g. server setup (arrangements for programme control [G06F 9/00](#) {; program loading or initiating in general [G06F 9/445](#); multiprogramming arrangements [G06F 9/46](#)}}}
- H04N 21/242
 - • • {Synchronization processes, e.g. processing of Program Clock References [PCR] {(synchronisation arrangements in time-division multiplex systems [H04J 3/06](#); arrangements for synchronising broadcast or distribution via plural systems in broadcast distribution systems [H04H 20/18](#); arrangements for synchronising receiver with transmitter [H04L 7/00](#); synchronising circuits with arrangements for extending range of synchronisation at the transmitter end [H04N 5/067](#))}}
- H04N 21/25
 - • {Management operations performed by the server for facilitating the content distribution or administrating data related to end-users or client devices, e.g. end-user or client device authentication, learning user preferences for recommending movies {(maintenance or administration in data networks [H04L 12/24](#))}}
- H04N 21/254
 - • • {Management at additional data server, e.g. shopping server, rights management server {(arrangements for maintenance or administration in data networks [H04L 12/24](#); Protocols involving third party service providers for network applications in communication control or processing [H04L 29/08666](#))}}
- U H04N 21/2543
 - • • • Billing {e.g. for subscription services (payment schemes, architectures or protocols [G06Q 20/00](#); e-commerce [G06Q 30/00](#); arrangements for billing for the use of broadcast information or broadcast-related information [H04H 60/21](#); charging arrangements in data networks [H04L 12/14](#))}
- H04N 21/2547
 - • • • • {Third Party Billing, e.g. billing of advertiser}
- H04N 21/258
 - • • {Client or end-user data management, e.g. managing client capabilities, user preferences or demographics, processing of multiple end-users preferences to derive collaborative data {(arrangements for services using the result on the distributing side of broadcast systems [H04H 60/66](#); data switching network applications involving user or terminal profiles [H04L 29/08918](#))}}

- H04N 21/262
 - • • {Content or additional data distribution scheduling, e.g. sending additional data at off-peak times, updating software modules, calculating the carousel transmission frequency, delaying a video stream transmission, generating play-lists {(scheduling strategies for dispatcher in multiprogramming arrangements [G06F 9/4881](#); arrangements for scheduling broadcast services or broadcast-related services [H04H 60/06](#); flow control in packet networks [H04L 12/569](#); protocols for scheduling and organising the servicing of requests, whereby a time schedule is established for servicing the requests in network applications in communication control or processing [H04L 29/08963](#))}}
- H04N 21/266
 - • • {Channel or content management, e.g. generation and management of keys and entitlement messages in a conditional access system, merging a VOD unicast channel into a multicast channel}
- H04N 21/2662
 - • • • {Controlling the complexity of the video stream, e.g. by scaling the resolution or bitrate of the video stream based on the client capabilities}
- H04N 21/2665
 - • • • {Gathering content from different sources, e.g. Internet and satellite}
- H04N 21/2668
 - • • • {Creating a channel for a dedicated end-user group, e.g. insertion of targeted commercials based on end-user profiles {(information retrieval from the Internet by querying with filtering and personalisation [G06F 17/30867](#); arrangements for replacing or switching information during the broadcast [H04H 20/10](#); push services over packet-switching network [H04L 12/1859](#); adaptation of message content in packet-switching networks [H04L 12/583](#))}}
- H04N 21/27
 - • {Server based end-user applications}
- U H04N 21/274
 - • • Storing end-user {multimedia} data in response to end-user request {, e.g. network recorder}
- H04N 21/2743
 - • • • {Video hosting of uploaded data from client}
- H04N 21/2747
 - • • • {Remote storage of video programs received via the downstream path, e.g. from the server}
- H04N 21/278
 - • • {Content descriptor database or directory service for end-user access {(details of content or meta data based information retrieval of video data in video databases [G06F 17/30843](#))}}
- U H04N 21/40
 - Client devices specifically adapted for the reception of or interaction with content, e.g. set-top-box [STB]; Operations thereof {(arrangements for distribution where lower stations, e.g. receivers, interact with the broadcast [H04H 20/38](#); arrangements specially adapted for receiving broadcast information [H04H 40/00](#))}
- H04N 21/41
 - • {Structure of client; -Structure of client peripherals}
- H04N 21/414
 - • • {Specialised client platforms, e.g. receiver in car or embedded in a mobile appliance}
- H04N 21/4143
 - • • • {embedded in a} Personal Computer [PC]}
- H04N 21/4147
 - • • • {Personal Video Recorder [PVR] ([H04N 5/76](#) takes precedence {; arrangements for broadcast specially adapted for accumulation-type receivers [H04H 20/40](#))}}
- H04N 21/418
 - • • {External card to be used in combination with the client device, e.g. for conditional access}
- H04N 21/4185
 - • • • {for payment {(mechanisms actuated by coded identity card or credit card to free or to actuate vending, hiring, coin or paper currency dispensing or refunding apparatus [G07F 7/08](#); payment schemes, architectures or protocols [G06Q 20/00](#); e-commerce [G06Q 30/00](#); charging arrangements in data networks [H04L 12/14](#))}}

- U H04N 21/422
 - • • {using} Input-only peripherals {i.e. input devices connected to specially adapted client devices (input devices also receiving signals from specially adapted client devices [H04N 21/4104](#))}, e.g. Global Positioning System [GPS] (input arrangements or combined input and output arrangements for interaction between user and computer [G06F 3/01](#))
- H04N 21/4223
 - • • • {Cameras ([H04N 5/225](#) takes precedence)}
- H04N 21/43
 - • {Processing of content or additional data, e.g. demultiplexing additional data from a digital video stream; -Elementary client operations, e.g. monitoring of home network, synchronizing decoder's clock; -Client middleware {(demultiplexing of data packets for data networks, e.g. RTP/UDP [H04L 29/06176](#))}}
- H04N 21/432
 - • • {Content retrieval operation from a local storage medium, e.g. hard-disk {(details of retrieval of video data and associated meta data in video databases [G06F 17/30843](#))}}
- H04N 21/433
 - • • {Content storage operation, e.g. storage operation in response to a pause request, caching operations}
- H04N 21/4335
 - • • • {Housekeeping operations, e.g. prioritizing content for deletion because of storage space restrictions {(storage management, e.g. defragmentation [G06F 3/0604](#); unloading stored programs [G06F 9/445](#); storage management in file systems [G06F 17/30067](#); buffering arrangements in a network node or in an end terminal in packet networks [H04L 49/90](#))}}
- H04N 21/435
 - • • {Processing of additional data, e.g. decrypting of additional data, reconstructing software from modules extracted from the transport stream}
- U H04N 21/436
 - • • Interfacing a local distribution network, e.g. communicating with another STB, inside the home {; Interfacing an external card to be used in combination with the client device}(arrangements specially adapted plural spots in a confined site in broadcast systems [H04H 20/63](#))
- H04N 21/4367
 - • • • {Establishing a secure communication between the client and a peripheral device or smart card (arrangements for secret or secure communication [H04L 9/00](#); security arrangements for protecting computers or computer systems against unauthorised activity [G06F 21/00](#) {; security arrangements in wireless networks [H04W 12/00](#))}]}
- H04N 21/437
 - • • {Interfacing the upstream path of the transmission network, e.g. for transmitting client requests to a VOD server {(flow control in data networks [H04L 12/569](#); formation of RTP packets [H04L 29/06176](#); application layer Quality of Service and content dependent routing of client requests [H04L 29/08945](#))}}
- H04N 21/438
 - • • {Interfacing the downstream path of the transmission network originating from a server, e.g. retrieving MPEG packets from an IP network {(transmission of MPEG streams over ATM [H04L 12/5601](#); flow control in data networks [H04L 12/569](#); processing of real-time packets [H04L 29/06176](#))}}
- H04N 21/4385
 - • • • {Multiplex stream processing, e.g. multiplex stream decrypting}
- H04N 21/439
 - • • {Processing of audio elementary streams}
- H04N 21/44
 - • • {Processing of video elementary streams, e.g. splicing a video clip retrieved from local storage with an incoming video stream, rendering scenes according to MPEG-4 scene graphs}
- H04N 21/4402
 - • • • {involving reformatting operations of video signals for household redistribution, storage or real-time display {(adapting incoming signals to the display format of the display terminal [G09G 5/005](#); media manipulation, adaptation or conversion at the destination in one way streaming for real-time multimedia communications [H04L 29/06496](#); details of conversion of video standards at pixel level [H04N 7/01](#); video transcoding [H04N 19/40](#))}}

- H04N 21/4405
 - • • {involving video stream decryption (arrangements for secret or secure communication [H04L 9/00](#) {; arrangements using cryptography for the use of broadcast information or broadcast-related information [H04H 60/23](#))} }
- H04N 21/4408
 - • • {involving video stream encryption, e.g. re-encrypting a decrypted video stream for redistribution in a home network (arrangements for secret or secure communication [H04L 9/00](#) {; arrangements using cryptography for the use of broadcast information or broadcast-related information [H04H 60/23](#))} }
- U H04N 21/441
 - • • Acquiring end-user identification {(authentication in wireless communication networks [H04W 12/06](#))e.g. using personal code sent by the remote control or by inserting a card (restricting access to computer systems by authenticating users using a predetermined code [G06F 21/33](#))}
- H04N 21/4415
 - • • {using biometric characteristics of the user, e.g. by voice recognition or fingerprint scanning {(methods or arrangements for recognising patterns [G06K 9/00](#); restricting access to computer systems by authenticating users using biometric data [G06F 21/32](#); authentication mechanisms using biometrical features for network security [H04L 29/06809](#); authentication in wireless network security [H04W 12/06](#))}
- H04N 21/442
 - • • {Monitoring of processes or resources, e.g. detecting the failure of a recording device, monitoring the downstream bandwidth, the number of times a movie has been viewed, the storage space available from the internal hard disk {(arrangements for monitoring broadcast services or broadcast-related services [H04H 60/29](#); arrangements for identifying or recognising characteristics with a direct linkage to broadcast information [H04H 60/35](#); monitoring of user activities for profile generation for accessing a video database [G06F 17/30843](#); monitoring in wireless networks [H04W 24/00](#))}
- H04N 21/4425
 - • • {Monitoring of client processing errors or hardware failure (monitoring in electrical digital data processing [G06F 11/00](#) {; error detection in general [G06F 11/07](#); monitoring in general [G06F 11/30](#))}
- H04N 21/443
 - • • {OS processes, e.g. booting a STB, implementing a Java virtual machine in a STB, power management in a STB (arrangements for program loading or initiating [G06F 9/445](#) {; boot device selection; loading of operating system [G06F 9/4406](#); program loading or initiating in general using non-volatile memory from which the program can be directly executed [G06F 9/44568](#))}
- H04N 21/45
 - • {Management operations performed by the client for facilitating the reception of or the interaction with the content or administrating data related to the end-user or to the client device itself, e.g. learning user preferences for recommending movies, resolving scheduling conflicts}
- H04N 21/454
 - • • {Content or additional data filtering, e.g. blocking advertisements {(filtering and selective blocking of messages over packet-switching networks [H04L 12/585](#))}
- H04N 21/462
 - • • {Content or additional data management e.g. creating a master electronic program guide from data received from the Internet and a Head-end, controlling the complexity of a video stream by scaling the resolution or bit-rate based on the client capabilities}
- H04N 21/4623
 - • • {Processing of entitlement messages, e.g. Entitlement Control Message [ECM], Entitlement Management Message [EMM] {(arrangements for conditional access to broadcast information or to broadcast-related services [H04H 60/14](#))}

- H04N 21/466
 - • • {Learning process for intelligent management, e.g. learning user preferences for recommending movies {(monitoring of user activities for profile generation for accessing a video database [G06F 17/30843](#); computer systems using learning methods [G06N 3/08](#); services using the results of monitoring in broadcast systems [H04H 60/61](#))}}
- H04N 21/47
 - • {End-user applications (interaction techniques for graphical user interfaces [G06F 3/048](#); receiver circuitry for displaying additional information [H04N 5/445](#) {; software engineering for user interfaces [G06F 8/20](#); services or applications for real-time multimedia communications [H04L 29/06387](#))} }
- H04N 21/472
 - • • {End-user interface for requesting content, additional data or services; -End-user interface for interacting with content, e.g. for content reservation or setting reminders, for requesting event notification, for manipulating displayed content {(end-user interfaces for retrieving video data from a database [G06F 17/30843](#); content on demand in one way streaming for real-time multimedia communications [H04L 29/06462](#))}}
- H04N 21/4722
 - • • • {for requesting additional data associated with the content}
- H04N 21/4725
 - • • • • {using interactive regions of the image, e.g. hot spots {(details of information retrieval from the Internet by using URLs [G06F 17/30876](#); processing chained hypermedia data for information retrieval [G06F 17/30014](#))}}
- H04N 21/4728
 - • • • {for selecting a Region Of Interest [ROI], e.g. for requesting a higher resolution version of a selected region}
- H04N 21/475
 - • • {End-user interface for inputting end-user data, e.g. personal identification number [PIN], preference data}
- H04N 21/478
 - • • {Supplemental services, e.g. displaying phone caller identification, shopping application}
- H04N 21/4784
 - • • • {receiving rewards {(payment schemes, architectures or protocols [G06Q 20/00](#); e-commerce [G06Q 30/00](#); charging arrangements in data networks [H04L 12/14](#))}}
- H04N 21/4786
 - • • • {e-mailing {(message switching systems, e.g. electronic mail systems [H04L 12/58](#))}}
- H04N 21/4788
 - • • • {communicating with other users, e.g. chatting {(arrangements for providing for computer conferences, e.g. chat rooms, to substitution in data switching networks [H04L 12/1813](#); protocols for peer-to-peer networking in communication control or processing [H04L 29/08306](#))}}
- H04N 21/482
 - • • {End-user interface for program selection {(systems specially adapted for using EPGs in broadcast systems [H04H 60/72](#))}}
- H04N 21/485
 - • • {End-user interface for client configuration}
- H04N 21/488
 - • • {Data services, e.g. news ticker {(systems specially adapted for using meteorological information in broadcast systems [H04H 60/71](#))}}
- U H04N 21/60
 - {using} Network structure or processes {specifically adapted} for video distribution between server and client or between remote clients (data switching networks [H04L 12/00](#); wireless communication networks [H04W](#)); Control signaling {specific to video distribution} between clients, server and network components {, e.g. to video encoder or decoder}; Transmission of management data between server and client (e.g. sending from server to client commands for recording incoming content stream); Communication details between server and client (Protocols for communication control and processing in data networks [H04L 29/06](#); Protocols for client-server architecture [H04L 67/42](#))
- H04N 21/61
 - • {Network physical structure; -Signal processing ([H04B](#) takes precedence)}

- U H04N 21/63
 - • Control signaling {related to video distribution} between client, server and network components; Network processes for video distribution between server and clients {or between remote clients}, e.g. transmitting basic layer and enhancement layers over different transmission paths, setting up a peer-to-peer communication via Internet between remote STB's; Communication protocols; Addressing (signalling, control or architecture for real-time multimedia communications [H04L 29/06183](#); arrangements for peer-to-peer communications [H04L 29/08306](#))
- H04N 21/633
 - • • {Control signals issued by server directed to the network components or client {(management of faults, events, alarms in data networks [H04L 12/2419](#))}}
- H04N 21/6332
 - • • • {directed to client}
- H04N 21/6334
 - • • • • {for authorization, e.g. by transmitting a key (arrangements for secret or secure communication [H04L 9/00](#) {; wireless communications network key management [H04W 12/04](#); wireless communications network access security [H04W 12/08](#))} }
- H04N 21/6336
 - • • • • {directed to decoder}
- H04N 21/6338
 - • • • {directed to network}
- H04N 21/637
 - • • {Control signals issued by the client directed to the server or network components}
- H04N 21/6371
 - • • • {directed to network}
- H04N 21/6377
 - • • • {directed to server {(control of source by destination in one way streaming for real-time multimedia communications [H04L 29/06469](#))}}
- H04N 21/64
 - • • {Addressing {(multicast or broadcast in one way streaming for real-time multimedia communications [H04L 29/06455](#); arrangements for addressing and naming in data networks [H04L 29/12009](#))}}
- H04N 21/6402
 - • • • {Address allocation for clients {(address allocation in data networks [H04L 29/12207](#))}}
- H04N 21/6405
 - • • • {Multicasting {(data broadcast and multicast in packet switching networks [H04L 12/18](#))}}
- H04N 21/6408
 - • • • {Unicasting}
- U H04N 21/643
 - • • {using dedicated} Communication protocols (streaming protocols for real-time multimedia communications [H04L 29/06517](#))
- H04N 21/6433
 - • • • {Digital Storage Media - Command and Control Protocol [DSM-CC]}
- H04N 21/6437
 - • • • {Real-time Transport Protocol [RTP]}
- H04N 21/647
 - • • {Control signaling between network components and server or clients; Network processes for video distribution between server and clients, e.g. controlling the quality of the video stream, by dropping packets, protecting content from unauthorized alteration within the network, monitoring of network load, bridging between two different networks, e.g. between IP and wireless {(signalling, control or architecture for real-time multimedia communications [H04L 29/06183](#))}}
- H04N 21/65
 - • {transmission of management data between client and server}
- H04N 21/654
 - • • {transmission by server directed to the client}
- H04N 21/6543
 - • • • {for forcing some client operations, e.g. recording {(remote booting in general [G06F 9/4416](#))}}
- H04N 21/6547
 - • • • {comprising parameters, e.g. for client setup}
- H04N 21/658
 - • • {transmission by the client directed to the server}
- H04N 21/6583
 - • • • {Acknowledgement}
- H04N 21/6587
 - • • • {Control parameters, e.g. trick play commands, viewpoint selection}

- H04N 21/80 · {Generation or processing of content or additional data by content creator independently of the distribution process; -Content per se {(arrangements for generating broadcast information [H04H 60/02](#))}
- H04N 21/81 · · {Monomedia components thereof}
- H04N 21/83 · · {Generation or processing of protective or descriptive data associated with content; -Content structuring}
- H04N 21/835 · · · {Generation of protective data, e.g. certificates {(protecting software against unauthorised usage in a vending or licensing environment [G06F 21/10](#))}
- H04N 21/8352 · · · · {involving content or source identification data, e.g. Unique Material Identifier [UMID]}
- H04N 21/8355 · · · · {involving usage data, e.g. number of copies or viewings allowed}
- H04N 21/84 · · · {Generation or processing of descriptive data, e.g. content descriptors {(systems specially adapted for using meta-information in broadcast systems [H04H 60/73](#))}
- H04N 21/8405 · · · · {represented by keywords}
- H04N 21/845 · · · {Structuring of content, e.g. decomposing content into time segments}
- H04N 21/85 · · {Assembly of content; -Generation of multimedia applications}
- H04N 21/854 · · · {Content Authoring}
- H04N 21/8541 · · · · {involving branching, e.g. to different story endings}
- H04N 21/8543 · · · · {using a description language, e.g. Multimedia and Hypermedia information coding Expert Group [MHEG], eXtensible Markup Language [XML] {(information retrieval of semistructured data, the underlying structure being taken into account, e.g. mark-up language structure data [G06F 17/30908](#))}
- H04N 21/8545 · · · · {for generating interactive applications}
- H04N 21/8547 · · · · {involving timestamps for synchronizing content}
- H04N 21/8549 · · · · {Creating video summaries, e.g. movie trailer {(retrieval in video databases by using presentations in form of a video summary [G06F 17/30843](#))}
- H04N 21/858 · · · {Linking data to content, e.g. by linking an URL to a video object, by creating a hotspot}

Project: N/A (H04Q)**H04Q****SELECTING (switches, relays, selectors [H01H](#); electronic switches [H03K 17/00](#))****NOTES**

1. This subclass covers:

- methods, circuits, or apparatus for stablishing selectively a connect ion between a desired number of stations (normally two), or between a main station and a desired number of substations (normally one) for the purpose of transferring information via this connection after it has been established;
- selective calling arrangements over connections already established.

In either case, the connection may be made by means of electric conductors or electromagnetic waves.

2. In this subclass, the following terms or expressions are used with the meanings indicated:

- "subscriber" is a general term for terminal equipment, e.g. telephone for public use;
- "substation" means a subscriber or monitoring equipment which may connect a single subscriber to a line without choice as to subscriber; -

~~"satellite" is a kind of exchange the operation of which depends upon control signals received from a supervisory exchange;~~

- "satellite" is a kind of exchange the operation of which depends upon control signals received from a supervisory exchange;
- "switching centres" includes exchanges and satellites.

U H04Q 3/00

Selecting arrangements ([H04Q 5/00](#) to [H04Q 11/00](#) take precedence)

U H04Q 3/42

- Circuit arrangements for indirect selecting controlled by common circuits, e.g. register controller, marker

U H04Q 3/54

- • in which the logic circuitry controlling the exchange is centralised

H04Q 3/545

- • • {using a stored programme}

Project: N/A (H05B)

U H05B 7/00

Heating by electric discharge (electron beam or ion beam tubes for localised treatment of objects [H01J 37/30](#); plasma torches [H05H 1/26](#))

U H05B 7/02

- Details

U H05B 7/10

- • Mountings, supports, terminals or arrangements for feeding or guiding electrodes

H05B 7/101

- • • {Mountings, supports or terminals at head of electrode, i.e. at the end remote from the arc}

Project: N/A (H05H)

U H05H 5/00

Direct voltage accelerators; Accelerators using single pulses ([H05H 3/06](#) takes precedence)

H05H 5/04

- {energised by electrostatic generators}

H05H 5/06

- {Multistage accelerators}

Project: N/A (H05K)

U H05K 3/00

Apparatus or processes for manufacturing printed circuits (photomechanical production of textured or patterned surfaces, materials or originals therefor, apparatus specially adapted therefor, in general [G03F](#); involving the manufacture of semiconductor devices [H01L](#))

U H05K 3/10

- in which conductive material is applied to the insulating support in such a manner as to form the desired conductive pattern

H05K 3/12

- • {using {thick film techniques, e.g.} printing techniques to apply the conductive material {or similar techniques for applying conductive paste or ink patterns (printing techniques in general [B41M](#), printing apparatus [B41F](#))}

Project: N/A (Y02P)

N Y02P

CLIMATE CHANGE MITIGATION TECHNOLOGIES IN THE PRODUCTION OR PROCESSING OF GOODS

NOTE

This subclass covers climate change mitigation technologies in any kind of industrial processing or production activity, including the agroalimentary industry, agriculture, fishing, ranching and the like.

N Y02P 10/00

Technologies related to metal processing

N Y02P 10/10

- Reduction of greenhouse gas [GHG] emissions

N Y02P 10/12

- • CO₂

N Y02P 10/122

- • • by capturing CO₂

- N Y02P 10/124 Recycling of CO₂-rich gas
- N Y02P 10/126 Recycling of CO₂-lean gas
- N Y02P 10/128 Oxycombustion
- N Y02P 10/13 Post-combustion
- N Y02P 10/132 CO₂ storage
- N Y02P 10/134 by CO₂ avoidance
- N Y02P 10/136 using hydrogen, e.g. H₂
- N Y02P 10/138 Electrolysis
- N Y02P 10/14 . . . Greenhouse gases [GHG] other than CO₂
- N Y02P 10/143 . . . Methane [CH₄]
- N Y02P 10/146 . . . Perfluorocarbons [PFC]; Hydrofluorocarbons [HFC]; Sulfur hexafluoride [SF₆]
- N Y02P 10/20 . . . Process efficiency
- N Y02P 10/21 . . . by recovering materials
- N Y02P 10/212 . . . Recovering metals from waste
- N Y02P 10/214 by pyro metallurgy
- N Y02P 10/216 of Fe
- N Y02P 10/218 of Al
- N Y02P 10/22 of Cu
- N Y02P 10/224 of Co or Ni
- N Y02P 10/226 of Mg
- N Y02P 10/228 of Sn
- N Y02P 10/23 of refractory metals
- N Y02P 10/232 of Zn or ZnO
- N Y02P 10/234 by hydro metallurgy
- N Y02P 10/236 of Cu
- N Y02P 10/238 by means other than pyro metallurgy or hydro metallurgy
- N Y02P 10/24 powder metallurgy
- N Y02P 10/242 . . . Slag reuse in metallurgical processes
- N Y02P 10/25 . . . by increasing the energy efficiency of the process
- N Y02P 10/253 . . . using induction furnaces
- N Y02P 10/256 . . . Design or operational measures for increasing the efficiency of electric conversion
- N Y02P 10/259 in electric arc furnaces
- N Y02P 10/262 in electrolytic cells
- N Y02P 10/265 . . . by heat recovery
- N Y02P 10/268 with by-product gas in energy cycle
- N Y02P 10/271 low temperature heat recovery
- N Y02P 10/274 medium temperature heat recovery
- N Y02P 10/277 high temperature heat recovery
- N Y02P 10/28 using by-product gases
- N Y02P 10/283 using water, e.g. for cooling
- N Y02P 10/286 . . . by process control or by modelling
- N Y02P 10/29 . . . Additive manufacturing

- N Y02P 10/292 of casting moulds
- N Y02P 10/295 of metals
- N Y02P 10/30 . . characterised by the energy source
- N Y02P 10/32 . . . the energy source being renewable
- N Y02P 10/34 . . . Cogeneration with other industries
- N Y02P 20/00 *Technologies relating to chemical industry***
- N Y02P 20/10 . General improvement of production processes causing greenhouse gases [GHG] emissions
- N Y02P 20/12 . . Energy input
- N Y02P 20/121 . . . Energy efficiency measures, e.g. energy management
- N Y02P 20/122 characterised by the type of apparatus
- N Y02P 20/123 Motor systems
- N Y02P 20/124 Boilers, furnaces, lighting or vacuum systems
- N Y02P 20/125 Process integration
- N Y02P 20/126 Membrane separation
- N Y02P 20/127 Reactive distillation
- N Y02P 20/128 . . . Alternative fuel sources, e.g. for process heat or steam
- N Y02P 20/129 . . . Energy recovery
- N Y02P 20/13 Cogeneration
- N Y02P 20/131 Pressure recovery turbines
- N Y02P 20/132 H₂ recovery
- N Y02P 20/133 . . . Renewable energy sources
- N Y02P 20/134 Sunlight
- N Y02P 20/135 Photoelectrochemical processes
- N Y02P 20/136 of biological origin, e.g. biomass, biofuels, biogas
- N Y02P 20/14 . . Reagents; Educts; Products
- N Y02P 20/141 . . . Feedstock
- N Y02P 20/142 the feedstock being CO₂
- N Y02P 20/143 the feedstock being recycled plastics
- N Y02P 20/144 to generate syngas, i.e. H₂ + CO
- N Y02P 20/145 the feedstock being materials of biological origin
- N Y02P 20/146 . . . Changing the product type or product distribution
- N Y02P 20/147 . . . Using materials efficiently
- N Y02P 20/148 Recycling
- N Y02P 20/149 Reduced process losses
- N Y02P 20/15 Reduced transportation losses
- N Y02P 20/151 . . . Reduction of greenhouse gas [GHG] emissions
- N Y02P 20/152 CO₂
- N Y02P 20/153 N₂O
- N Y02P 20/154 Halogenated hydrocarbons
- N Y02P 20/155 Perfluorocarbons [PFC]; Hydrofluorocarbons [HFC]; Hydrochlorofluorocarbons [HCFC]; Chlorofluorocarbons [CFC]
- N Y02P 20/156 Methane [CH₄]
- N Y02P 20/20 . Improvements relating to chlorine production

- N Y02P 20/22 • • Optimization of Deacon process
- N Y02P 20/224 • • • by process design
- N Y02P 20/228 • • • by improving the materials, e.g. gauze composition or structure
- N Y02P 20/30 • Improvements relating to adipic acid or caprolactam production
- N Y02P 20/32 • • Technologies aiming at reducing N₂O emissions
- N Y02P 20/324 • • • by thermal destruction of N₂O
- N Y02P 20/328 • • • by catalytic reduction of N₂O
- N Y02P 20/40 • Improvements relating to chlorodifluoromethane [HCFC-22] production
- N Y02P 20/42 • • Reducing fluoroform [HFC-23] emissions
- N Y02P 20/424 • • • by capture and subsequent thermal oxidation
- N Y02P 20/50 • Improvements relating to the production of products other than chlorine, adipic acid, caprolactam, or chlorodifluoromethane, e.g. bulk or fine chemicals or pharmaceuticals
- N Y02P 20/51 • • Bulk chemicals
- N Y02P 20/514 • • • Aldehydes; Alcohols
- N Y02P 20/518 • • • Hydrocyanation products, e.g. adipodinitrile
- N Y02P 20/52 • • using catalysts, e.g. selective catalysts
- N Y02P 20/54 • • characterised by the solvent
- N Y02P 20/542 • • • the solvent being an ionic liquid
- N Y02P 20/544 • • • Supercritical solvents, e.g. supercritical H₂O or CO₂
- N Y02P 20/546 • • • Mixtures of ionic liquids and supercritical solvents
- N Y02P 20/55 • • Synthetic design, e.g. reducing the use of auxiliary or protecting groups
- N Y02P 20/57 • • Efficient separation techniques
- N Y02P 20/572 • • • Membranes
- N Y02P 20/58 • • Recycling
- N Y02P 20/582 • • • of unreacted starting or intermediate materials
- N Y02P 20/584 • • • of catalysts
- N Y02P 20/586 • • • of reagents, e.g. co-catalysts, adjuvants
- N Y02P 20/588 • • • involving immobilised starting materials, reagents or catalysts
- N Y02P 20/59 • • Biological synthesis; Biological purification
- N Y02P 30/00 Technologies relating to oil refining and petrochemical industry**
- N Y02P 30/10 • Reduction of greenhouse gas [GHG] emissions during production processes
- N Y02P 30/20 • Bio-feedstock
- N Y02P 30/30 • Carbon capture or storage [CCS] specific to hydrogen production
- N Y02P 30/40 • Ethylene production
- N Y02P 30/42 • • using bio-feedstock
- N Y02P 30/44 • • Cracking, e.g. steam cracking
- N Y02P 30/442 • • • Furnace or cracking tube materials, e.g. chemical composition of the tubes; Controlling or regulating the tube furnaces
- N Y02P 30/444 • • • Cogeneration using furnace exhaust
- N Y02P 30/446 • • • Catalytic cracking
- N Y02P 30/46 • • Separation
- N Y02P 30/462 • • • using low temperature distillation
- N Y02P 30/464 • • • using absorption or adsorption techniques

- N Y02P 30/48
 - • Compression
- N Y02P 40/00**
 - Technologies relating to the processing of minerals**
- N Y02P 40/10
 - Production of cement
- N Y02P 40/12
 - • Clinker production
- N Y02P 40/121
 - • • Energy efficiency measures, e.g. improving or optimising the production methods
- N Y02P 40/123
 - • • • Integrated production plants
- N Y02P 40/125
 - • • Fuels from renewable energy sources
- N Y02P 40/126
 - • • • Waste
- N Y02P 40/128
 - • • • Biomass
- N Y02P 40/14
 - • Reduction of clinker content in cement
- N Y02P 40/141
 - • • Blended cements
- N Y02P 40/143
 - • • • Clinker replacement by slag
- N Y02P 40/145
 - • • • Clinker replacement by combustion residues
- N Y02P 40/146
 - • • • Clinker replacement by ground limestone
- N Y02P 40/148
 - • • Belite cements
- N Y02P 40/16
 - • Non-limestone based cements, e.g. alkali-activated cements
- N Y02P 40/165
 - • • Geopolymers
- N Y02P 40/18
 - • Carbon capture and storage [CCS]
- N Y02P 40/20
 - Cement grinding
- N Y02P 40/30
 - Manufacturing or processing of sand or stone
- N Y02P 40/40
 - Production or processing of lime
- N Y02P 40/42
 - • Limestone calcination
- N Y02P 40/44
 - • Regeneration of lime in pulp and sugar mills
- N Y02P 40/45
 - • using fuels from renewable energy sources
- N Y02P 40/47
 - • Reduction of lime consumption, e.g. in sugar industry
- N Y02P 40/49
 - • • Limestone grinding
- N Y02P 40/50
 - Glass production
- N Y02P 40/51
 - • Producing or shaping of glass
- N Y02P 40/52
 - • Use of cullet or other waste
- N Y02P 40/53
 - • Reusing waste heat during processing or shaping
- N Y02P 40/535
 - • • Regenerative heating
- N Y02P 40/55
 - • Oxy-fuel
- N Y02P 40/56
 - • Batch or cullet pre-heating
- N Y02P 40/57
 - • Reduction of reject rates; Improving the yield
- N Y02P 40/58
 - • Fuels from renewable energy sources
- N Y02P 40/59
 - • CO₂ capture, e.g. for large oxy-fuel furnaces
- N Y02P 40/60
 - Production of ceramic materials or ceramic elements
- N Y02P 40/61
 - • Manufacturing of materials for construction e.g. beams, bricks or tiles
- N Y02P 40/615
 - • • Bricks made from lime and sand
- N Y02P 40/63
 - • Improving processing, storage or transport systems
- N Y02P 40/65
 - • Improving kilns
- N Y02P 40/67
 - • Fuels from renewable energy sources
- N Y02P 40/69
 - • Substitution of clay or shale by alternative raw materials, e.g. ashes

N	Y02P 60/00	Technologies relating to agriculture, livestock or agroalimentary industries
N	Y02P 60/10	• Agricultural machinery or equipment
N	Y02P 60/12	• • using renewable energies
N	Y02P 60/122	• • • for irrigation, e.g. solar water pumping
N	Y02P 60/124	• • • Collecting solar energy in greenhouses
N	Y02P 60/14	• • Measures for saving energy
N	Y02P 60/141	• • • in irrigation, i.e. motor control
N	Y02P 60/142	• • • Reduction of fuel consumption
N	Y02P 60/144	• • • Combined machines, e.g. seeder combined with fertilizers
N	Y02P 60/146	• • • in greenhouses
N	Y02P 60/147	• • • • Heating, ventilation or air conditioning
N	Y02P 60/148	• • • • Constructive measures, e.g. light structures or improved insulation
N	Y02P 60/149	• • • • Efficient lighting e.g. LED lighting
N	Y02P 60/15	• • • in preparing or milling grain
N	Y02P 60/16	• • Machines for direct seeding, i.e. sod or grassland seeding
N	Y02P 60/18	• • Activities not otherwise provided for, e.g. storage
N	Y02P 60/20	• Reduction of greenhouse gas [GHG] emissions in agriculture
N	Y02P 60/21	• • N ₂ O
N	Y02P 60/212	• • • Reducing the use of fertilizers
N	Y02P 60/214	• • • • Efficient applying machines
N	Y02P 60/215	• • • • Efficient spraying methods
N	Y02P 60/216	• • • • Aquaponics or hydroponics
N	Y02P 60/218	• • • use of additives, e.g. nitrification inhibitors, biochar
N	Y02P 60/22	• • Reducing methane [CH ₄] emissions from agricultural lands, e.g. from rice paddies
N	Y02P 60/23	• • Reduction of CO ₂ emissions from biota and soils
N	Y02P 60/24	• • Enhancing carbon sequestration in biota and soils
N	Y02P 60/242	• • • Roof greening
N	Y02P 60/244	• • • Wall greening
N	Y02P 60/246	• • • Use of plant growth regulators to improve carbon dioxide up-take by crop plants
N	Y02P 60/247	• • • Plants with high carbon sequestration potential
N	Y02P 60/25	• • Biomass with low greenhouse gas [GHG] emissions
N	Y02P 60/30	• Land use policy measures
N	Y02P 60/40	• Afforestation or reforestation
N	Y02P 60/50	• Livestock or poultry management
N	Y02P 60/52	• • use of renewable energies
N	Y02P 60/521	• • • Solar lighting, e.g. for poultry
N	Y02P 60/524	• • • for pumping or supplying water to livestock
N	Y02P 60/526	• • • for electric energy supply
N	Y02P 60/528	• • • • for electric livestock fences
N	Y02P 60/54	• • Environmental control in livestock or poultry housing
N	Y02P 60/542	• • • using renewable energy
N	Y02P 60/56	• • Methane [CH ₄] capture

- N Y02P 60/60 · Fishing
- N Y02P 60/62 · · Fishing equipment
- N Y02P 60/64 · · Aquaculture; Aquafarming
- N Y02P 60/642 · · · combined with aquaponics or hydroponics
- N Y02P 60/70 · Apiculture
- N Y02P 60/80 · Food processing
- N Y02P 60/81 · · Use of renewable energies or variable speed drives in handling, conveying or stacking
- N Y02P 60/83 · · Warming or cooking
- N Y02P 60/831 · · · using steam
- N Y02P 60/833 · · · using microwave ovens
- N Y02P 60/835 · · · by boiling
- N Y02P 60/85 · · Food storage or conservation
- N Y02P 60/851 · · · Cooling, refrigeration or freezing
- N Y02P 60/853 · · · Drying
- N Y02P 60/855 · · · Ice production, e.g. for conservation purposes
- N Y02P 60/87 · · Re-use of by-products of food processing for fodder production
- N Y02P 60/871 · · · from molasses
- N Y02P 60/873 · · · from distillers' or brewers' waste
- N Y02P 60/875 · · · from waste products of dairy plants
- N Y02P 60/877 · · · from by-products of vegetal origin
- N Y02P 60/89 · · characterised by the product
- N Y02P 60/891 · · · Dairy products
- N Y02P 70/00 Climate change mitigation technologies in the production process for final industrial or consumer products**
- N Y02P 70/10 · Greenhouse gas [GHG] capture, material saving, heat recovery or other energy efficient measures, e.g. motor control, characterised by manufacturing processes
- N Y02P 70/12 · · related technologies for improving processes or machines for shaping products
- N Y02P 70/121 · · · Machines for rolling metal, e.g. rolling mills
- N Y02P 70/123 · · · · Motor control
- N Y02P 70/125 · · · · Removing fumes from rolling mills
- N Y02P 70/127 · · · · using heat shields
- N Y02P 70/129 · · · · Heat recovery during rolling
- N Y02P 70/131 · · · · using liquid recovering devices
- N Y02P 70/133 · · · · · for recovering coolants
- N Y02P 70/135 · · · · · for recovering lubricants
- N Y02P 70/137 · · · relating to forging, hammering, pressing or riveting
- N Y02P 70/139 · · · relating to the manufacture or working of metal sheets or profiles
- N Y02P 70/141 · · · relating to pressing processes or machines therefore
- N Y02P 70/143 · · · · Optimisation of energy consumption
- N Y02P 70/145 · · · · · by control of drive motors
- N Y02P 70/16 · · related technologies for metal working by removing or adding material
- N Y02P 70/161 · · · Power management, e.g. limiting power to tools

- N Y02P 70/163 . . . Power down for energy saving
- N Y02P 70/167 . . . relating to the design or operation of machining centres or machine tools
- N Y02P 70/169 using minimal quantities of coolants or lubricants
- N Y02P 70/171 Devices or processes for removing and reusing chips
- N Y02P 70/173 Machine centres provided for turning, boring or milling
- N Y02P 70/175 . . . relating to the design or operation of machines for dry cutting gears or toothed racks
- N Y02P 70/177 . . . Grinding or polishing
- N Y02P 70/179 Treatment of used abrasive materials aiming at a further reuse
- N Y02P 70/181 . . . relating to the design or operation of machines for soldering, welding or cutting by applying heat locally
- N Y02P 70/183 . . . relating to the design or operation of machines for machines for sawing, cutting, perforating, punching or severing
- N Y02P 70/185 . . . relating to the operation of machines combining different processes for working of metal
- N Y02P 70/187 . . . relating to the design or operation of machines for working metal not otherwise provided for
- N Y02P 70/20 . . related technologies for printing, lining or stamping machines
- N Y02P 70/22 . . Technologies for working on wood, veneer or plywood
- N Y02P 70/24 . . related technologies for saving energy and raw materials during the production of paper or paper articles
- N Y02P 70/26 . . related technologies for working on or processing of plastics
- N Y02P 70/261 . . . recovering energy or power from drive motors in injection moulding
- N Y02P 70/263 . . . recovering energy or reusing materials in extrusion moulding
- N Y02P 70/265 . . . relating to blow moulding
- N Y02P 70/267 Means for recycling or reusing auxiliaries or materials
- N Y02P 70/269 reducing blowing fluid consumption
- N Y02P 70/271 by recycling blow fluid
- N Y02P 70/273 recycling reactive gas
- N Y02P 70/275 reusing heat
- N Y02P 70/277 . . . relating to thermoforming
- N Y02P 70/279 Recycling or reuse of materials
- N Y02P 70/281 Reuse of pressure or vacuum
- N Y02P 70/30 . . related to technologies for conveying, packing or storing of goods or handling thin or filamentary material
- N Y02P 70/32 . . relating to mixing
- N Y02P 70/34 . . relating to separation, flotation or differential sedimentation
- N Y02P 70/36 . . Recycling or reuse of a liquid sprayed or atomised
- N Y02P 70/38 . . Apparatus or processes for applying liquids or other fluent materials
- N Y02P 70/40 . . Drying by removing liquid
- N Y02P 70/405 . . . Drying with heating arrangements using waste heat
- N Y02P 70/50 . Manufacturing or production processes characterised by the final manufactured product
- N Y02P 70/52 . . Manufacturing of products or systems for producing renewable energy
- N Y02P 70/521 . . . Photovoltaic generators
- N Y02P 70/523 . . . Wind turbines

- N Y02P 70/525 . . . Hydropower turbines
- N Y02P 70/527 for tidal streams or dam-less hydropower, e.g. sea flood and ebb or stream current
- N Y02P 70/54 . . Manufacturing of lithium-ion, lead-acid or alkaline secondary batteries
- N Y02P 70/56 . . Manufacturing of fuel cells
- N Y02P 70/58 . . Greenhouse gas [GHG] capture, heat recovery or other energy efficient measures relating to manufacturing or assembling of vehicles, e.g. motor control
- N Y02P 70/585 . . . Aircraft Eco design, i.e. taking into account the full life cycle of the aircraft including re-use, recyclability and disposal
- N Y02P 70/60 . . Greenhouse gas [GHG] capture, heat recovery or other energy efficient measures relating to production or assembly of electric or electronic components or products, e.g. motor control
- N Y02P 70/601 . . . the product being a basic electric component or element, i.e. cables, resistors, capacitors, switches, connectors, relays or protections
- N Y02P 70/603 . . . the product being a lighting component
- N Y02P 70/605 . . . the product being a semiconductor or solid state device or parts thereof
- N Y02P 70/607 Manufacturing of electronic silicon based components
- N Y02P 70/609 . . . the product being a dynamo-electric machine, i.e. electrical generators or motors
- N Y02P 70/611 . . . the product being a printed circuit board [PCB]
- N Y02P 70/613 . . . involving the assembly of several electronic elements
- N Y02P 70/62 . . related technologies for production or treatment of textile or flexible materials or products thereof, including footwear
- N Y02P 70/621 . . . Production or treatment of artificial filaments or the like
- N Y02P 70/623 Energy efficient measures, e.g. motor control or heat recovery
- N Y02P 70/625 Recovery of starting material, waste material or solvents during the manufacturing process
- N Y02P 70/627 of cellulose, cellulose derivatives or proteins
- N Y02P 70/629 of synthetic polymers
- N Y02P 70/631 . . . Production or treatment of lace, e.g. knitting or braiding
- N Y02P 70/633 Saving materials
- N Y02P 70/635 Saving energy by reducing inertia of moving parts
- N Y02P 70/637 . . . Treatment of textiles
- N Y02P 70/639 Energy efficient measures, e.g. motor control or heat recovery
- N Y02P 70/641 Recovery of solvents
- N Y02P 70/643 Treatment of textiles using a short bath ratio
- N Y02P 70/645 . . . Manufacturing of wall or floor covering materials or the like
- N Y02P 70/647 Energy efficient measures, e.g. motor control or heat recovery
- N Y02P 70/649 using scraps or recycled materials
- N Y02P 70/651 the materials being particles
- N Y02P 70/653 . . . Footwear made at least partially of recyclable material
- N Y02P 70/66 . . Greenhouse gas [GHG] capture, use of renewable energies, heat recovery or other energy efficient measures for manufacturing or preparation of tobacco products, e.g. motor control
- N Y02P 80/00 Climate change mitigation technologies for sector-wide applications**
- N Y02P 80/10 . Efficient use of energy

- N Y02P 80/11 • • of electric energy
- N Y02P 80/112 • • • Power supplies with power electronics for efficient use of energy, e.g. power factor correction [PFC] or resonant converters
- N Y02P 80/114 • • • Control systems or methods for efficient use of energy
- N Y02P 80/116 • • • • Electronic drive motor controls
- N Y02P 80/12 • • using compressed air as energy carrier, e.g. for pneumatic systems
- N Y02P 80/13 • • using pressurized fluid as energy carrier, e.g. for hydraulic systems
- N Y02P 80/14 • • District level solutions, i.e. local energy networks
- N Y02P 80/15 • • On-site combined power, heat or cool generation or distribution, e.g. combined heat and power [CHP] supply
- N Y02P 80/152 • • • for heat recovery
- N Y02P 80/154 • • • for steam generation or distribution
- N Y02P 80/156 • • in fluid distribution systems
- N Y02P 80/158 • • • Solar or wind-powered water pumping not specially adapted for irrigation
- N Y02P 80/20 • Sector-wide applications using renewable energy
- N Y02P 80/21 • • Biomass as fuel
- N Y02P 80/22 • • Wind energy
- N Y02P 80/23 • • Solar energy
- N Y02P 80/24 • • • Solar thermal energy
- N Y02P 80/25 • • • Photovoltaic energy
- N Y02P 80/30 • Reducing waste in manufacturing processes; Calculations of released waste quantities
- N Y02P 80/40 • Minimising material used in manufacturing processes
- N Y02P 90/00 **Enabling technologies with a potential contribution to greenhouse gas [GHG] emissions mitigation****
- N Y02P 90/02 • Total factory control, e.g. smart factories, flexible manufacturing systems [FMS] or integrated manufacturing systems [IMS]
- N Y02P 90/04 • • characterised by the assembly processes
- N Y02P 90/06 • • characterised by direct numerical control [DNC]
- N Y02P 90/08 • • characterised by the cooperation between machine tools, manipulators or work piece supply systems
- N Y02P 90/083 • • • Manipulators cooperating with conveyers
- N Y02P 90/087 • • • Manipulators cooperating with machine tools
- N Y02P 90/10 • • characterised by identification, e.g. of work pieces or equipment
- N Y02P 90/12 • • characterised by programme execution
- N Y02P 90/14 • • characterised by fault tolerance, reliability of production system
- N Y02P 90/16 • • characterised by system universality, i.e. configurability or modularity of production units
- N Y02P 90/18 • • characterised by the network communication
- N Y02P 90/185 • • • using local area networks [LAN]
- N Y02P 90/20 • • characterised by job scheduling, process planning or material flow
- N Y02P 90/205 • • • Tool management
- N Y02P 90/22 • • characterised by quality surveillance of production
- N Y02P 90/24 • • characterised by computer integrated manufacturing [CIM], planning or realisation
- N Y02P 90/26 • • characterised by modelling or simulation of the manufacturing system

- N Y02P 90/265 . . . *Product design therefor*
- N Y02P 90/28 . . *characterised by transport systems*
- N Y02P 90/285 . . . *using automatic guided vehicles [AGV]*
- N Y02P 90/30 . *Computing systems specially adapted for manufacturing*
- N Y02P 90/40 . *Fuel cell technologies in production processes*
- N Y02P 90/45 . *Hydrogen technologies in production processes*
- N Y02P 90/50 . *Energy storage in industry with an added climate change mitigation effect*
- N Y02P 90/60 . *Electric or hybrid propulsion means for production processes*
- N Y02P 90/70 . *Combining sequestration of CO₂ and exploitation of hydrocarbons by injecting CO₂ or carbonated water in oil wells*
- N Y02P 90/80 . *Management or planning*
- N Y02P 90/82 . . *Energy audits or management systems therefor*
- N Y02P 90/84 . . *Greenhouse gas [GHG] management systems*
- N Y02P 90/845 . . . *Inventory and reporting systems for greenhouse gases [GHG]*
- N Y02P 90/86 . . *Maintenance planning*
- N Y02P 90/90 . *Financial instruments for climate change mitigation, e.g. environmental taxes, subsidies or financing*
- N Y02P 90/95 . . *CO₂ emission certificates or credits trading*

Project: N/A (Y02T)**U Y02T 50/00****Aeronautics or air transport**

D Y02T 50/90

- . *Eco-design, i.e. taking into account the full life cycle of the craft including re-use, recyclability and disposal*