CPC COOPERATIVE PATENT CLASSIFICATION

H ELECTRICITY

H01 BASIC ELECTRIC ELEMENTS

H01B CABLES; CONDUCTORS; INSULATORS; SELECTION OF MATERIALS FOR THEIR CONDUCTIVE, INSULATING OR DIELECTRIC PROPERTIES (selection for magnetic properties H01F 1/00; waveguides H01P; installations of cables or lines H02G; {printed circuits H05K})

NOTE

Group H01B 12/00 takes precedence over groups H01B 5/00 - H01B 11/00.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Conductors or conductive bodies characterised by the conductive materials; Selection of materials as conductors (resistors H01C; selection of materials for superconductivity H01L 39/00)

NOTE

Groups H01B 1/14 - H01B 1/24 take precedence over groups H01B 1/02 - H01B 1/12

1/02 . . mainly consisting of metals or alloys
1/023 . . {Alloys based on aluminium}
1/026 . . {Alloys based on copper}
1/04 . . mainly consisting of carbon-silicon compounds, carbon or silicon
1/06 . . mainly consisting of other non-metallic substances
1/08 . . oxides
1/10 . . sulfides
1/12 . . organic substances {organic macromolecular compounds or compositions C08}
1/121 . . [Charge-transfer complexes]
1/122 . . [Ionic conductors]
1/124 . . [Intrinsically conductive polymers]
1/125 . . {comprising aliphatic main chains, e.g. polyacetylenes}
1/127 . . {comprising five-membered aromatic rings in the main chain, e.g. polypyrroles, polythiophenes}
1/128 . . {comprising six-membered aromatic rings in the main chain, e.g. polyanilines, polyphenylenes}
1/14 . . Conductive material dispersed in non-conductive inorganic material
1/16 . . the conductive material comprising metals or alloys
1/18 . . the conductive material comprising carbon-silicon compounds, carbon or silicon
1/20 . . Conductive material dispersed in non-conductive organic material {organic macromolecular compounds or compositions C08}

1/22 . . the conductive material comprising metals or alloys
1/24 . . the conductive material comprising carbon-silicon compounds, carbon or silicon

3/00 Insulators or insulating bodies characterised by the insulating materials; Selection of materials for their insulating or dielectric properties (selection of piezo-electric or electrostrictive materials H01L 41/00)

3/002 . . {Inhomogeneous material in general}
3/004 . . {with conductive additives or conductive layers}
3/006 . . {Other inhomogeneous material}
3/008 . . {Other insulating material}
3/02 . . mainly consisting of inorganic substances
3/025 . . {Other inorganic material}
3/04 . . mica
3/06 . . asbestos
3/065 . . {Wires with asbestos}
3/08 . . quartz; glass; glass wool; slag wool; vitreous enamels
3/081 . . {Wires with vitreous enamels}
3/082 . . {Wires with glass or glass wool}
3/084 . . {Glass or glass wool in binder}
3/085 . . {Particles bound with glass}
3/087 . . {Chemical composition of glass}
3/088 . . {Shaping of glass or deposition of glass}
3/10 . . metallic oxides {ceramics H01B 3/12}
3/105 . . {Wires with oxides}
3/12 . . ceramics
3/14 . . cements
3/16 . . gases
3/18 . . mainly consisting of organic substances {organic macromolecular compounds or compositions C08}
3/185 . . {Substances or derivates of cellulose}
3/20 . . liquids, e.g. oils {silicone oils H01B 3/46}
3/22 . . hydrocarbons
3/24 . . containing halogen in the molecules, e.g. halogenated oils
3/26 . . . asphalts; bitumens; pitches
3/28 . . . natural or synthetic rubbers
3/30 . . . plastics; resins; waxes

NOTE
Group H01B 3/47 takes precedence over groups H01B 3/32 - H01B 3/46

3/301 . . . [Macromolecular compounds obtained by reactions forming a linkage containing sulfur with or without nitrogen, oxygen or carbon in the main chain of the macromolecule, not provided for in group H01B 3/302]
3/302 . . . [Polyurethanes or polythioureas; Polyyurea; or polythyiourea]
3/303 . . . [Macromolecular compounds obtained by reactions forming a linkage containing nitrogen with or without oxygen or carbon in the main chain of the macromolecule, not provided for in groups H01B 3/38 or H01B 3/302]
3/305 . . . . . . [Polyamides or polyestamides]
3/306 . . . . . . [Polyimides or polyterimidies]
3/307 . . . . . . [Other macromolecular compounds]
3/308 . . . . . . [Wires with resins]
3/32 . . . . . . [natural resins]
3/34 . . . . . . Waxes (silicone waxes H01B 3/46)
3/36 . . . . . . condensation products of phenols with aldehydes or ketones
3/38 . . . . . . condensation products of aldehydes with amines or amides
3/40 . . . . . . epoxy resins
3/42 . . . . . . polyesters; polyethers; polyacetals
3/421 . . . . . . [Polyesters]
3/422 . . . . . . [Linear saturated polyesters derived from dicarboxylic acids and dithydoxy compounds]
3/423 . . . . . . [Linear aromatic polyesters]
3/425 . . . . . . [Non-saturated polyesters derived from polycarboxylic acids and polyhydroxy compounds, in which at least one of the two components contains aliphatic unsaturation]
3/426 . . . . . . [Polycarbonates]
3/427 . . . . . . [Polyethers]
3/428 . . . . . . [Polyacetals]
3/44 . . . . . . vinyl resins; acryletic resins (silicones H01B 3/46)
3/441 . . . . . . [from alkenes]
3/442 . . . . . . [from aromatic vinyl compounds]
3/443 . . . . . . [from vinylhalogenedes or other halogenoethylenic compounds]
3/445 . . . . . . [from vinylfluorides or other fluoroethylenic compounds]
3/446 . . . . . . [from vinylacetals]
3/447 . . . . . . [from acrylic compounds]
3/448 . . . . . . [from other vinyl compounds]
3/46 . . . . . . silicones
3/465 . . . . . . [Silicone oils]
3/47 . . . . . . fibre-reinforced plastics, e.g. glass-reinforced plastics
3/48 . . . . . . fibrous materials (fibre-reinforced plastics H01B 3/47)
3/485 . . . . . . [Other fibrous materials fabric]
3/50 . . . . . . fabric
3/52 . . . . . . wood; paper; press board
3/54 . . . . . . hard paper; hard fabrics
3/545 . . . . . . [Hard fabrics]
3/56 . . . . . . gases

5/00 Non-insulated conductors or conductive bodies characterised by their form
5/002 . . . . . . [Auxiliary arrangements]
5/004 . . . . . . [for protection against corona]
5/006 . . . . . . [for protection against vibrations]
5/008 . . . . . . [Fence-wire not otherwise provided for (wire fencing E04H 17/02)]
5/02 . . . . . . Single bars, rods, wires, or strips
5/04 . . . . . . wound or coiled
5/06 . . . . . . Single tubes
5/08 . . . . . . Several wires or the like stranded in the form of a rope
5/10 . . . . . . stranded around a space, insulating material, or dissimilar conducting material
5/101 . . . . . . [stranded around a space]
5/102 . . . . . . [stranded around a high tensile strength core]
5/104 . . . . . . [composed of metallic wires, e.g. steel wires]
5/105 . . . . . . [composed of synthetic filaments, e.g. glass-fibres]
5/107 . . . . . . [stranded around a core supporting radial stresses, e.g. a tube, a wire helix]
5/108 . . . . . . [stranded around communication or control conductors]
5/12 . . . . . . Braided wires or the like
5/14 . . . . . . comprising conductive layers or films on insulating-supports (insulating-layers or insulating-films on metal bodies H01B 17/62)
5/16 . . . . . . comprising conductive material in insulating or poorly conductive material, e.g. conductive rubber (H01B 1/14; H01B 1/20 take precedence; insulating bodies with conductive admixtures H01B 17/64; conductive paints C09D 5/24)

7/00 Insulated conductors or cables characterised by their form
7/0009 . . . . . . [Details relating to the conductive cores]
7/0018 . . . . . . [Strip or foil conductors (H01B 7/08 takes precedence)]
7/0027 . . . . . . [Liquid conductors]
7/0036 . . . . . . [Alkali metal conductors]
7/0045 . . . . . . [Cable-harnesses]
7/0054 . . . . . . [Cables with incorporated electric resistances]
7/0063 . . . . . . [Ignition cables]
7/0072 . . . . . . [Electrical cables comprising fluid supply conductors]
7/0081 . . . . . . [Cables of rigid construction (rigid-tube cables H01B 7/16)]
7/009 . . . . . . [Cables with built-in connecting points or with predetermined areas for making deviations]
7/02 . . . . . . Disposition of insulation (materials H01B 3/00; insulators H01B 17/00)
7/0208 . . . . . . [Cables with several layers of insulating material]
7/0216 . . . . . . [Two layers]
7/0225 . . . . . . [Three or more layers]
7/0233 . . . . . . [Cables with a predominant gas dielectric]
7/0241 . . . . . . [comprising one or more helical wrapped layers of insulation]
Flexible cables, conductors, or cords, e.g. trailing cables

Extensible conductors or cables, e.g. self-coiling cords (arrangements for storing and repeatedly paying-out and re-storing lengths of conductors or cables B65H 7/34)

having the shape of an helix

Flat or ribbon cables

(Twin conductor or cable)

covered with gluten for wall-fixing

Parallel wires, incorporated in a flat insulating profile

Parallel wires, incorporated in a fabric

Parallel wires, sandwiched between two insulating layers

Parallel wires, fixed upon a support layer

Juxtaposed parallel wires, fixed to each other without a support layer

comprising one or more screens

comprising one or more armouring, tensile- or compression-resistant elements

comprising twisted pairs

comprising connection wire loops

incorporated in a cable of non-flat configuration

Contact cables, i.e. having conductors which may be brought into contact by distortion of the cable

responsive to heat

responsive to pressure

comprising concentric conductors

comprising parallel conductors

Floating cables (installations of cables supported on or from floats H02G 9/12)

Submarine cables

associated with hydrodynamic bodies

Rigid-tube cables (heating elements of similar construction H05B)

Protection against damage caused by external factors, e.g. sheaths or armouring (power cables with screens H01B 9/02; communication cables with screens H01B 11/06; {continuously-loaded cables H01B 11/14; installation of conduits H02G)
large potential gradients with screens or conductive layers, e.g. for avoiding
Constructional features relating to the conductors
including electrical control or communication welding apparatus or electric-arc furnaces
heating or cooling devices H01B 17/54 conduction (insulators or insulating bodies having
arrangements for heat dissipation or securing
insulation with arrangements for facilitating removal of insulation
conductor )
with arrangements for facilitating mounting or securing
with arrangements for heat dissipation or conduction (insulators or insulating bodies having heating or cooling devices H01B 17/54)
for heat dissipation]
using a cooling fluid]
the construction being bendable]
using cooling fins, ribs]
Heat conduction]
Power cables
[Power supply cables for the electrodes of electric-welding apparatus or electric-arc furnaces]
[including electrical control or communication wires]
[including optical transmission elements]
[Constructional features relating to the conductors]
[for overhead application]
with screens or conductive layers, e.g. for avoiding large potential gradients
[Features relating to screening tape per se]
[composed of longitudinal lapped tape-conductors]
[composed of helicoidally wound tape-conductors]
[composed of braided metal wire]
[composed of helicoidally wound wire-conductors]
[composed of longitudinally posed wire-conductors]
NOTE

If suitable for handling frequencies considerably beyond the audio range and if typical HF-features of coaxial cables are disclosed, e.g. propagation of non-TEM modes, multimoding, oversized coaxial cables, particular cross-section adapted for HF-propagation, classification is made in H01P 3/06.

11/1804 . . . [Construction of the space inside the hollow inner conductor]
11/1808 . . . [Construction of the conductors]
11/1813 . . . [Co-axial cables with at least one braided conductor]
11/1817 . . . [Co-axial cables with at least one metal deposit conductor]
11/1821 . . . [Co-axial cables with at least one wire-wound conductor]
11/1826 . . . [Co-axial cables with at least one longitudinal lapped tape-conductor]
11/183 . . . [Co-axial cables with at least one helicoidally wound tape-conductor]
11/1834 . . . [Construction of the insulation between the conductors]
11/1839 . . . [of cellular structure]
11/1843 . . . [of tubular structure]
11/1847 . . . [of helical wrapped structure]
11/1852 . . . [of longitudinal lapped structure]
11/1856 . . . [Discontinuous insulation]
11/186 . . . [having the shape of a disc]
11/1865 . . . [having the shape of a bead]
11/1869 . . . [Construction of the layers on the outer side of the outer conductor]
11/1873 . . . [Measures for the conductors, in order to fix the spacers]
11/1878 . . . [Special measures in order to improve the flexibility]
11/1882 . . . [Special measures in order to improve the refrigeration]
11/1886 . . . [Special measures in order to improve the centration of the inner conductor]
11/1891 . . . [comprising auxiliary conductors]
11/1895 . . . [Particular features or applications]
11/20 . . . Cables having a multiplicity of coaxial lines
13/0235 . . . (by a twisting device situated between a pay-off device and a take-up device)
13/0242 . . . (being an accumulator)
13/025 . . . (of tubular construction)
13/0257 . . . (being a perforated disc)
13/0264 . . . (being rollers, pulleys, drums or belts

(H01B 13/0242 takes precedence))
13/0271 . . . (Alternate stranding processes)
13/0278 . . . (Stranding machines comprising a transposing mechanism)
13/0285 . . . (Pretreatment)
13/0292 . . . (After-treatment)
13/04 . . . Mutually positioning pairs or quads to reduce cross-talk
13/06 . . . Insulating conductors or cables (H01B 13/32 takes precedence)
13/062 . . . (by pulling on an insulating sleeve)
13/065 . . . (Insulating conductors with lacquers or enamels)
13/067 . . . (Insulating coaxial cables (H01B 13/20 takes precedence))
13/08 . . . by winding
13/0808 . . . [Hand-held devices]
13/0816 . . . [Apparatus having a coaxial rotation of the supply reels about the conductor or cable]
13/0825 . . . [Apparatus having a planetary rotation of the supply reels around the conductor or cable]
13/0833 . . . (the supply reel axis being arranged parallel to the conductor or cable axis)
13/0841 . . . (the supply reel axis being arranged perpendicular to the conductor or cable axis)
13/085 . . . [Apparatus having the supply reels in a fixed position, the conductor or cable rotating about its own axis]
13/0858 . . . [Details of winding apparatus; Auxiliary devices]
13/0866 . . . [Brakes or tension regulating means]
13/0875 . . . [Detecting breakage or run-out of winding material]
13/0883 . . . [Pretreatment]
13/0891 . . . [After-treatment]
13/10 . . . by longitudinal lapping
13/103 . . . [combined with pressing of plastic material around the conductors]
13/106 . . . [the conductor having a rectangular cross-section]
13/12 . . . by applying loose fibres
13/14 . . . by extrusion (extrusion in general B29C 48/00)
13/141 . . . [of two or more insulating layers]
13/142 . . . [of cellular material]
13/143 . . . (with a special opening of the extrusion head)
13/144 . . . [Heads for simultaneous extrusion on two or more conductors]
13/145 . . . [Pretreatment or after-treatment]
13/146 . . . [Controlling the extrusion apparatus dependent on the capacitance or the thickness of the insulating material (measuring thickness G01B; testing during manufacturing G01R 31/0231)]
13/147 . . . [Feeding of the insulating material]
13/148 . . . [Selection of the insulating material therefor]
13/16 . . . by passing through or dipping in a liquid bath; by spraying
13/165 . . . [by spraying]
13/18 . . . Applying discontinuous insulation, e.g. discs, beads
13/185 . . . (by periodically constricting an insulating sleeve)
13/20 . . . for concentric or coaxial cables
13/202 . . . [by molding spacers]
13/204 . . . [by punching spacers]
13/206 . . . [by forming a helical web]
13/208 . . . [by mechanically removing parts of a continuous insulation]
13/22 . . . Sheathing; Armouring; Screening; Applying other protective layers (H01B 13/32 takes precedence)
13/221 . . . [filling-up interstices]
13/222 . . . [by electro-plating]
13/224 . . . [by drawing a cable core into an oversized tube by means of a tow line]
13/225 . . . [Screening coaxial cables]
13/227 . . . [Pretreatment]
13/228 . . . [After-treatment]
13/224 . . . [by extrusion (extrusion of cables with plastic material in general B29C 48/15)]
13/245 . . . [of metal layers]
13/26 . . . by winding, braiding, or longitudinal lapping (winding in general B65H)
13/2606 . . . (by braiding)
13/2613 . . . (by longitudinal lapping)
13/262 . . . (of an outer metallic screen)
13/2626 . . . (of a coaxial cable outer conductor)
13/2633 . . . (Bending and welding of a metallic screen)
13/264 . . . (Details of the welding stage)
13/2646 . . . [Bending and soldering of a metallic screen]
13/2653 . . . [Details of the soldering stage]
13/266 . . . [Bending and adhesively bonding of a metallic screen]
13/2666 . . . [Details of the bonding stage]
13/2673 . . . (of a compartment separating metallic screen)
13/268 . . . (of a non-metallic sheet)
13/2686 . . . [Pretreatment]
13/2693 . . . [After-treatment]
13/28 . . . Applying continuous inductive loading, e.g. Krarup loading
13/282 . . . (by winding)
13/285 . . . (by extrusion)
13/287 . . . (by passing through a coating bath)
13/30 . . . Drying; (in general F26B); Impregnating (H01B 13/32 takes precedence; impregnating of fibres D06B 3/00; D06B 5/00; H01G 4/00; H01G 4/06; drying and impregnating of wood or the like B27K; impregnation of stones, basic materials therefor C04B 20/10 - C04B 20/12, C04B 41/45 - C04B 41/521)
13/32 . . . Filling or coating with impervious material (for cable installations H02G 15/00)
13/321 . . . (the material being a powder)
13/322 . . . (the material being a liquid, jelly-like or viscous substance)
13/323 . . . [using a filling or coating head]
13/324 . . . [in combination with a vacuum chamber]
13/325 . . . [in combination with vibration generating means]
13/326 . . . [Material preparing or feeding devices]
13/327 . . . [using a filling or coating cone or die]
Insulators or insulating bodies characterised by their form (section insulators for electric traction B60M 1/18; insulating rail-joints E01B 11/54)

17/00

17/005 . [Insulators structurally associated with built-in electrical equipment]
17/02 . Suspension insulators; Strain insulators
17/04 . Chains; Multiple chains
17/06 . Fastening of insulator to support, to conductor, or to adjoining insulator
17/08 . by cap-and-bolt
17/10 . by intermediate link
17/12 . Special features of strain insulators (devices for relieving mechanical tension of electric lines or cables H02G 7/04)
17/14 . Supporting insulators (pin insulators H01B 17/20; apertured insulators H01B 17/24)
17/145 . [Insulators, poles, handles, or the like in electric fences]
17/16 . Fastening of insulators to support, to conductor, or to adjoining insulator
17/18 . for very heavy conductors, e.g. bus-bars, rails
17/20 . Pin insulators
17/22 . Fastening of conductors to insulator
17/24 . Insulators apertured for fixing by nail, screw, wire, or bar, e.g. diabolo, bobbin
17/26 . Lead-in insulators; Lead-through insulators
17/265 . [Fastening of insulators to support (H01B 17/301 takes precedence)]
17/28 . Capacitor type (capacitors H01G)
17/30 . Sealing (packings in general F16D)
17/301 . [Sealing of insulators to support]
17/303 . [Sealing of leads to lead-through insulators]
17/305 . . . [by embedding in glass or ceramic material]
17/306 . . . . [by embedding in material other than glass or ceramics]
17/308 . . . . [by compressing packing material]
17/32 . Single insulators consisting of two or more dissimilar insulating bodies
17/325 . . [comprising a fibre-reinforced insulating core member]
17/34 . Insulators containing liquid, e.g. oil

17/36 . Insulators having evacuated or gas-filled spaces
17/38 . Fittings, e.g. caps; Fastenings therefor
17/40 . Cementless fittings
17/42 . Means for obtaining improved distribution of voltage (capacitor-type lead-through insulators H01B 17/28); Protection against arc discharges
17/44 . Structural association of insulators with corona rings (corona rings H01T 19/02)
17/46 . Means for providing an external arc-discharge path (spark-gap arresters H01T)
17/48 . over chains or other serially-arranged insulators
17/50 . with surfaces specially treated for preserving insulating properties, e.g. for protection against moisture, dirt, or the like
17/52 . having cleaning devices (H01B 17/54 takes precedence)
17/525 . . [Self-cleaning, e.g. by shape or disposition of screens]
17/54 . having heating or cooling devices
17/56 . Insulating bodies (insulators H01B 17/02 - H01B 17/54)
17/58 . . Tubes, sleeves, beads, or bobbins through which the conductor passes (protective tubings for the installation of lines or cables in buildings H02G 3/04)
17/583 . . . [Grommets; Bushings]
17/586 . . . . [with strain relief arrangements]
17/60 . Composite insulating bodies (cables or conductors H01B 7/00; H01B 9/00; resistors H01C; capacitors H01G)
17/62 . Insulating-layers or insulating films on metal bodies (conductive layers or films on insulating-bodies H01B 5/14)
17/64 . with conductive admixtures, inserts, or layers (conductive bodies comprising conductive material dispersed in insulating material H01B 5/16)
17/66 . . Joining insulating bodies together, e.g. by bonding

19/00 Apparatus or processes specially adapted for manufacturing insulators or insulating bodies (manufacture of porcelain for electric insulation C04B 33/26)

19/02 . Drying (in general F26B); Impregnating
19/04 . Treating the surfaces, e.g. applying coatings