CPC  COOPERATIVE PATENT CLASSIFICATION

C  CHEMISTRY; METALLURGY
(NOTES omitted)

METALLURGY

C25  ELECTROLYTIC OR ELECTROPHORETIC PROCESSES; APPARATUS THEREFOR
(NOTES omitted)

C25D  PROCESSES FOR THE ELECTROLYTIC OR ELECTROPHORETIC PRODUCTION OF COATINGS; ELECTROFORMING (decorating textiles by metallising D06Q 1/04; manufacturing printed circuits by metal deposition H05K 3/18); APPARATUS THEREFOR

WARNINGS
1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   - C25D 2/00 covered by B23K 28/006
   - C25D 5/24 covered by C25D 5/34
   - C25D 5/26 covered by C25D 5/36
   - C25D 5/28 covered by C25D 5/38
   - C25D 19/00 covered by C25D 17/00
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Electroforming
1/003 . . . [3D structures, e.g. superposed patterned layers]
1/006 . . . [Nanostructures, e.g. using aluminium anodic oxidation templates [AAO]]
1/02 . . . Tubes; Rings; Hollow bodies
1/04 . . . Wires; Strips; Foils
1/06 . . . Wholly-metallic mirrors
1/08 . . . Perforated or foraminous objects, e.g. sieves (C25D 1/10 takes precedence)
1/10 . . . Moulds; Masks; Masterforms {, e.g. mandrels, stampers}
1/12 . . . by electrophoresis [(electrophoretic coating C25D 13/00)]
1/14 . . . of inorganic material
1/16 . . . Metals
1/18 . . . of organic material
1/20 . . . Separation of the formed objects from the electrodes (with no destruction of said electrodes)
1/22 . . . Separating compounds
3/00 Electroplating: Baths therefor
3/02 . . . from solutions (C25D 5/34 - C25D 5/46 take precedence)
3/04 . . . of chromium
3/06 . . . from solutions of trivalent chromium
3/08 . . . Deposition of black chromium {, e.g. hexavalent chromium, CrVI}
3/10 . . . characterised by the organic bath constituents used
3/12 . . . of nickel or cobalt { (C25D 3/56 takes precedence) }
3/14 . . . from baths containing acetylenic or heterocyclic compounds
3/16 . . . Acetylenic compounds
3/18 . . . Heterocyclic compounds
3/20 . . . of iron
3/22 . . . of zinc
3/24 . . . from cyanide baths
3/26 . . . of cadmium
3/28 . . . from cyanide baths
3/30 . . . of tin
3/32 . . . characterised by the organic bath constituents used
3/34 . . . of lead
3/36 . . . characterised by the organic bath constituents used
3/38 . . . of copper
3/40 . . . from cyanide baths {, e.g. with Cu+}
3/42 . . . of light metals
3/44 . . . Aluminium
3/46 . . . of silver
3/48 . . . of gold
3/50 . . . of platinum group metals
3/52 . . . characterised by the organic bath constituents used
3/54 . . . of metals not provided for in groups C25D 3/04 - C25D 3/50
3/56 . . . of alloys
3/562 . . . [containing more than 50% by weight of iron or nickel or cobalt; NiP, FeP, CoP (phosphatising C25D 11/36)]
3/565 . . . [containing more than 50% by weight of zinc]
3/567 . . . [containing more than 50% by weight of platinum group metals]
3/58 . . . containing more than 50% by weight of copper
Electroplating characterised by the process; Pretreatment or after-treatment of workpieces

5/006 [Electroplating characterised by the use of gases, e.g. pressure influence (removal or gases or vапours, C25D 21/04)]

5/003 [Electroplating with applied electromagnetic field, not locally, e.g. for plating magnetic layers]

5/02 [Electroplating of selected surface areas]

5/022 [using locally applied electromagnetic radiation, e.g. lasers]

5/026 [using locally applied jets of electrolyte]

5/028 [one side electroplating, e.g. substrate conveyed in a bath with inhibited background plating]

5/04 [Electroplating with moving electrodes]

5/06 [Brush or pad plating {electrodes for pad plating C25D 17/14}]

5/08 [Electroplating with moving electrolyte {. characterised by electrolyte flow}, e.g. jet electroplating (spraying of electrolyte on wires strip or foils C25D 7/0642, means or devices for moving the electrolyte C25D 21/10, C25D 5/026 takes precedence)]

5/10 [Electroplating with more than one layer of the same or of different metals (for bearings C25D 7/10)]

5/12 [at least one layer being of nickel or chromium]

5/14 [two or more layers being of nickel or chromium, e.g. duplex or triplex layers]

5/16 [Electroplating with layers of varying thickness {., e.g. rough surfaces} {.; Hull cells}]

5/18 [Electroplating using modulated, pulsed or reversing current]

5/20 [Electroplating using ultrasonics {, vibrations}]

5/22 [Electroplating combined with mechanical treatment during the deposition]

5/34 [Pretreatment of metallic surfaces to be electroplated]

5/36 [of iron or steel]

5/38 [of refractory metals or nickel]

5/40 [Nickel; Chromium]

5/42 [of light metals]

5/44 [Aluminium]

5/46 [of actinides]

5/48 [After-treatment of electroplated surfaces]

5/50 [by heat-treatment]

5/505 [of electroplated tin coatings, e.g. by melting]

5/52 [by brightening or burnishing]

5/54 [Electroplating {on} non-metallic surfaces {., e.g. on carbon or carbon composites} (C25D 7/12 takes precedence)]

5/56 [on {thin or conductive} plastics {(coating metallic material C23C)}]
11/26 . . . of refractory metals or alloys based thereon
11/28 . . . of actinides or alloys based thereon
11/30 . . . of magnesium or alloys based thereon
11/32 . . . of semiconducting materials
11/34 . . . of metals or alloys not provided for in groups
11/36 . . .
11/40 . . . Chromatising
13/00 Electrophoretic coating characterised by the process (C25D 15/00 takes precedence; compositions for electrophoretic coating C09D 5/44)
13/02 . . . with inorganic material
13/04 . . . with organic material
13/06 . . . with polymers (not used, see C09D 5/44)
13/08 . . . . by polymerisation in situ of monomeric materials (not used, see C09D 5/4476)
13/10 . . . characterised by the additives used (not used, see C09D 5/448)
13/12 . . . characterised by the article coated
13/14 . . . . Tubes; Rings; Hollow bodies
13/16 . . . . Wires; Strips; Foils
13/18 . . . . using modulated, pulsed, or reversing current
13/20 . . . Pretreatment
13/22 . . . Servicing or operating (apparatus or multistep processes)
13/24 . . . Regeneration of process liquids
15/00 Electrolytic or electrophoretic production of coatings containing embedded materials, e.g. particles, whiskers, wires
15/02 . . . Combined electrolytic and electrophoretic processes (with charged materials)
17/00 Constructional parts, or assemblies thereof, of cells for electrolytic coating (apparatus for continuously conveying articles into baths B65G, e.g. B65G 49/00; electric devices see the relevant classes, e.g. H01B, H02G) (C25D 7/06, C25D 11/005, C25D 13/22, C25 takes precedence)
17/001 . . . (Apparatus specially adapted for plating wafers, e.g. semiconductors, solar cells)
17/002 . . . (Cell separation, e.g. membranes, diaphragms)
17/004 . . . (Sealing devices)
17/005 . . . (Contacting devices)
17/007 . . . (Current conducting devices)
17/008 . . . (Current insulating devices)
17/02 . . . Tanks; Installations therefor
17/04 . . . . External supporting frames or structures
17/06 . . . Suspending or supporting devices for articles to be coated
17/08 . . . . (Supporting) racks (i.e. not for suspending)
17/10 . . . Electrodes (e.g. composition, counter electrode)
17/12 . . . Shape or form (C25D 17/14 takes precedence)
17/14 . . . for pad-plating
17/16 . . . Apparatus for electrolytic coating of small objects in bulk
17/18 . . . . having closed containers
17/20 . . . . Horizontal barrels
17/22 . . . . having open containers
17/24 . . . . Oblique barrels
17/26 . . . . Oscillating baskets
17/28 . . . with means for moving the objects individually through the apparatus during treatment
21/00 Processes for servicing or operating cells for electrolytic coating
21/02 . . . Heating or cooling
21/04 . . . Removal of gases or vapours (gas or pressure control (electroplating characterized by the use of gases C25D 5/003))
21/06 . . . Filtering (particles other than ions (filtering ions C25D 21/22))
21/08 . . . Rinsing
21/10 . . . Agitating of electrolytes; Moving of racks
21/11 . . . Use of protective surface layers on electrolytic baths
21/12 . . . Process control or regulation (controlling or regulating in general G05)
21/14 . . . Controlled addition of electrolyte components
21/16 . . . Regeneration of process solutions (C25D 13/24 takes precedence)
21/18 . . . . of electrolytes (C25D 21/22 takes precedence)
21/20 . . . . of rinse-solutions (C25D 21/22 takes precedence)
21/22 . . . . by ion-exchange