U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

CLASSIFICATION ORDER 1825

AUGUST 3, 2004

Project No. C-5091

The following classification changes will be effected by this order:

	Class	Subclass	Art Unit	Ex'r Search Room No.
Abolished:	427	96-99, 421, 428	1762	REM-0B15
Established:	427	96.1-96.9, 97.1-97.9, 98.1-98.9, 99.1-99.5, 421.1, 427.1-427.7, 428.01-428.09, 428.1, 428.11-428.19, 428.2, 428.21	1762	REM-0B15

The following classes were impacted by this order.

Classes: 29, 174, 216, 239, 257, 428, 438, 439, 516, 700

This order includes the following:

A. CLASSIFICATION MANUAL CHANGES,

B. LISTING OF PRINCIPAL SOURCE OF ESTABLISHED AND DISPOSITION OF ABOLISHED SUBCLASSES,

C. CHANGES TO THE U.S. – I.P.C. CONCORDANCE,

D. DEFINITION CHANGES.

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AUGUST 3, 2004

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A. CLASSIFICATION MANUAL CHANGES

Additional and Modified Subclasses

1 BODY MEMBER PRINTING (E.G., FINGERPRINTING, ETC.)

2.1 MEDICAL OR DENTAL PURPOSE PRODUCT; PARTS; SUBCOMBINATIONS; INTERMEDIATES (E.G., BALLOON CATHETER, SPLINT)

2.11 .Analysis, diagnosis, measuring, or testing product (e.g., specimen preparation, microscope slide smearing)

2.12 ..For contacting living body or transfusing bodily fluid (e.g., endoscope, electrode, thermometer, probe)

2.13 ..Layer formed contains chemical reagent or chemically reacts with substrate (e.g., cell stain or fix, pH paper, immobilized antigen)

2.14 .Particulate or unit-dosage-article base (e.g., tablet, pill, pellet, capsule, liposome, powder, controlled-release implant, suppository; excluding transdermal patch)

2.15 ..Fluidized bed utilized

2.16 ...Retarded or controlled-release layer produced (e.g., enteric)

2.17 ...Significant color or other intended appearance altering layer formed (e.g., shining, indicia)

2.18 ..En masse rotating means employed (e.g., rotating pan, tumbling)

2.19 ...Retarded or controlled-release layer produced (e.g., enteric)

2.2 ...Significant color or other intended appearance altering layer formed (e.g., shining, indicia)

2.21 ..Retarded or controlled-release layer produced (e.g., enteric)

2.22 ..Gelatin matrix layer produced

2.23 ..Significant color or other intended appearance altering layer formed (e.g., shining, indicia)

2.24 .Implantable permanent prosthesis (i.e., artificial body member) (e.g., pacemaker, lens, cornea, glaucoma shunt, heart valve, muscle, spinal disc, breast, internal organ)

2.25 ..Liquid conveying (e.g., vascular, arterial, bile duct, urethra)

2.26 ..For mineralized body part (e.g., bone, tooth, crown, hip)

2.27 ...Inorganic oxygen-containing compound containing layer formed (e.g., hydroxyapatite, ceramic, glass)

2.28 .Device for creating or holding open an unnatural opening in a membrane or organ (e.g., syringe, scalpel, drainage tube)

2.29 .Dental product (e.g., floss, denture, orthodontia wire)

2.3 .Fluid barrier or fluid transporting product, other than merely absorbing (e.g., surgical glove, condom, lined diaper, membrane filter, IV tubing, cannula, dialysis membrane, urinary catheter)

2.31 .Flexible web, sheet, film, or filament base (e.g., fabric, bandage, suture, transdermal patch, orthopedic cast tape)

4 PLANT MEMBER OR ANIMAL SPECIMEN COATING

5 RADIOACTIVE BASE OR COATING

6 .Particles or nuclear reactor fuel elements coated

7 FRAUD OR TAMPER DETECTING

8 MEASURING, TESTING, OR INDICATING

9 .Thickness or uniformity of thickness determined

10 ..Electrical or optical

11 FRICTIONAL APPLICATION (I.E., RUBBING SOLID COATING MATERIAL ON BASE)

446 SPRAY COATING UTILIZING FLAME OR PLASMA HEAT (E.G., FLAME SPRAYING, ETC.)

447 .Organic containing coating

448 .Nonuniform or patterned coating

449 .Continuous feed solid coating material (e.g., wire, rod, or filament, etc.)

450 .Inorganic carbon containing coating, not as steel (e.g., carbide, etc.)

451 ..Additionally containing nickel, cobalt, or iron as free metal or alloy

452 .Silicon containing coating

453 .Metal oxide containing coating

454 ..Superposed diverse or multilayer similar coatings applied

455 .Metal or metal alloy coating

456 ..Aluminum, nickel, cobalt, or iron metal or alloy containing coating

457 DIRECT APPLICATION OF ELECTRICAL, MAGNETIC, WAVE, OR PARTICULATE ENERGY

458 .Electrostatic charge, field, or force utilized

459 ..Fluidized bed utilized

460 ...Ionization or corona discharge utilized

461 ...Heating or fusing applied coating

462 ..Flock or fiber applied

463 ...Pile- or nap-type surface formed

464 ....Heating, drying, or cooling adhesive surface

465 ....Organic substrate specified (e.g., fabric, etc.)

466 ..Nonuniform or patterned coating (e.g., ink jet printing, etc.)

467 ...Edging or striping

468 ...Mask or stencil utilized

469 ...Coating material consists of charged particles (e.g., paint, pigment, dye, etc.)

470 ..Superposed diverse or multilayer similar coatings applied

471 ..Applying coatings to opposite sides of a substrate (excluding processes where all coating is by immersion)

DIRECT APPLICATION OF ELECTRICAL, MAGNETIC, WAVE, OR PARTICULATE ENERGY

.Electrostatic charge, field, or force utilized

472 ..Positioning, orientation, or application of nonsprayed, nonatomized coating material solely by electrostatic charge, field, or force

473 ...Inorganic substrate

474 ...Solid particles applied

475 ..Solid particles or atomized liquid applied

476 ...Inside hollow articles

477 ...Articles or substrates sequentially moved past atomizing source

478 ....Collection of off-target or fugitive coating material

479 ....Utilizing multiple spray sources (e.g., atomizers)

480 ....Movable atomizer or spray source (e.g., spray source or atomizer rotates, reciprocates, oscillates, etc.)

481 ....Rotatable base or support for substrate

482 ...Running or indefinite length substrate

483 ...Utilizing apparatus to atomize and electrostatically charge liquid coating material (e.g., charging electrode adjacent spray source, etc.)

484 ....Rotatable atomizer or spray source

485 ...Coating contains organic material

486 ....Inorganic substrate

487 .Polymerization of coating utilizing direct application of electrical, magnetic, wave, or particulate energy (i.e., including cross-linking, curing, and hardening of organics)

488 ..Plasma initiated polymerization

489 ...Organosilicon containing coating

490 ...Flurocarbon containing coating

491 ...Organic substrate

492 ..Multiple applications of identical radiation energy source to polymerize (e.g., pulse, flash, lamp, etc.)

493 ..Application of plural diverse energy sources to polymerize (e.g., electromagnetic wave plus resistance heat, ultraviolet wave plus infrared wave, etc.)

494 ..Gloss control (e.g., light scattering, etc.)

495 ..Polymerization involving the control of oxygen containing gas as an inhibitor (e.g., air, etc.)

496 ..High energy electromagnetic radiation or high energy particles utilized (e.g., gamma rays, X-rays, atomic particles, i.e., alpha rays, beta rays, electrons, etc.)

497 ...Vapor deposition utilized

498 ...Immersion, partial immersion, spraying, or spin coating utilized (e.g., dipping, etc.)

499 ....Natural cellulose substrate

500 ...Coating material includes colorant or pigment

501 ...Textile, fiber, or wire coated or impregnated

502 ...Magnetic recording medium formed

503 ...Organosilicon containing coating material

504 ...Nonuniform or patterned coating (e.g., mask, printing, etc.)

505 ...Coating is adhesive or intended to be made adhesive (e.g., release sheet or coating, etc.)

506 ...Benzene ring or nitrogen containing coating material

507 ....Styrene or carboxamide group containing coating material (e.g., urea, urethane, etc.)

508 ..Low energy electromagnetic radiation utilized (e.g., UV, visible, IR, microwave, radio wave, actinic, laser, etc.)

509 ...Vapor deposition utilized

510 ...Nonuniform or patterned coating (e.g., mask, printing, textured, etc.)

511 ....Printing ink utilized

512 ...Immersion, partial immersion, spraying, or spin coating utilized (e.g., dipping, etc.)

513 ...Textile or fiber coated or impregnated

514 ...Coating material includes colorant or pigment

515 ...Organosilicon containing coating material

516 ...Coating is adhesive or is intended to be made adhesive (e.g., release sheet or coating, etc.)

517 ...Coating includes specified rate affecting material

518 ....Inorganic substrate

519 ....Keto or aldehyde containing group is part of the rate affecting coating material (e.g., benzoin, benzophenone, acetaldehyde, etc.)

520 ...Benzene ring or nitrogen containing coating material

521 ...Radiation as heat source (e.g., radiant energy, etc.)

522 ..Resistance or induction heat-initiated polymerization

523 .Ion plating or implantation

524 ..With simultaneous sputter etching of substrate

525 ..Organic material present in substrate, plating, or implanted layer

526 ..Nonuniform or patterned ion plating or ion implanting (e.g., mask, etc.)

DIRECT APPLICATION OF ELECTRICAL, MAGNETIC, WAVE, OR PARTICULATE ENERGY

.Ion plating or implantation

527 ..Silicon present in substrate, plating, or implanted layer

529 ..Inorganic oxide containing plating or implanted material

530 ..Inorganic metal compound present in plating or implanted material (e.g., nitrides, carbides, borides, etc.)

528 ..Metal or metal alloy substrate

531 ..Metal or metal alloy plating or implanted material

532 .Pretreatment of substrate or post-treatment of coated substrate

533 ..Ionized gas utilized (e.g., electrically powered source, corona discharge, plasma, glow discharge, etc.)

534 ...Cleaning or removing part of substrate (e.g., etching with plasma, glow discharge, etc.)

535 ...Plasma (e.g., cold plasma, corona, glow discharge, etc.)

536 ....Organic substrate

537 .....Metal containing coating

538 .....Textile or fiber coated or impregnated

539 ....Oxygen containing atmosphere

540 ..Arc or electrical discharge

541 ..Drying

542 ...Infrared or radiant heating

543 ..Induction or dielectric heating

544 ...Organic coating containing material

545 ..Resistance heating

546 ...Metal or metal alloy containing coating

547 ..Magnetic field or force utilized

548 ...Magnetic recording medium or device formed

549 ....Running length substrate

550 ...Magnetizable powder, flakes, or particles utilized

551 ..High energy electromagnetic radiation or high energy particles utilized (e.g., gamma ray, X-ray, atomic particle, i.e., alpha ray, beta ray, high energy electron, etc.)

552 ...Nonuniform or patterned coating

553 ..Low energy electromagnetic radiation (e.g., microwave, radio wave, IR, UV, visible, actinic, laser, etc.)

554 ...Laser

555 ....Nonuniform or patterned coating

556 .....Metal or metal alloy substrate

557 ...Thermal processes (e.g., radiant heat, infrared, etc.)

558 ....Ultraviolet light

559 ....Fusing, curing, or annealing (e.g., ceramics, etc.)

560 ..Sonic or ultrasonic (e.g., cleaning or removing material from substrate, etc.)

561 .Pretreatment of coating supply or source outside of primary deposition zone or off site

562 ..Electric discharge (e.g., corona, glow discharge, etc.)

563 ...Silicon containing coating material

564 ...Metal, metal alloy, or metal oxide containing coating material

565 ..Sonic or ultrasonic (e.g., vibratory energy, etc.)

566 ..Electron irradiation (e.g., e-beam evaporation, etc.)

567 ...Silicon or metal oxide coating (e.g., glass, etc.)

568 ..Silicon containing coating supply or source

569 .Plasma (e.g., corona, glow discharge, cold plasma, etc.)

570 ..Utilizing plasma with other nonionizing energy sources

571 ...With magnetic enhancement

572 ...Light as energy source

573 ...With heated substrate

574 ...Silicon containing coating

575 ..Generated by microwave (i.e., 1mm to 1m)

576 ..Metal, metal alloy, or metal oxide coating

577 ..Inorganic carbon containing coating material, not as steel (e.g., carbide, etc.)

578 ..Silicon containing coating material

579 ...Silicon oxides or nitrides

580 .Electrical discharge (e.g., arcs, sparks, etc.)

581 .Chemical deposition from liquid contiguous with substrate via electron beam or light (e.g., photochemical liquid deposition, etc.)

582 .Photoinitiated chemical vapor deposition (i.e., photo CVD)

583 ..Silicon containing coating

584 ..Metal, metal alloy, or metal oxide coating

585 .Chemical vapor deposition (e.g., electron beam or heating using IR, inductance, resistance, etc.)

586 ..Pyrolytic use of laser or focused light (e.g., IR, UV lasers to heat, etc.)

587 ..Resistance or induction heating

588 ...Silicon or semiconductor material containing coating

589 ....Silicon carbide

590 ...Boron, nitrogen, or inorganic carbon containing coating

591 .Induction or dielectric heating

592 .Resistance heating

593 ..Vapor deposition employing resistance heating of substrate or coating material

594 ..Immersion or partial immersion

DIRECT APPLICATION OF ELECTRICAL, MAGNETIC, WAVE, OR PARTICULATE ENERGY

595 .Electromagnetic or particulate radiation utilized (e.g., IR, UV, X-ray, gamma ray, actinic, microwave, radio wave, atomic particle; i.e., alpha ray, beta ray, electron, etc.)
596 ..Laser or electron beam (e.g., heat source, etc.)
597 ...Metal or metal alloy containing coating material applied
598 .Magnetic field or force utilized
599 ..Magnetic recording medium or device formed
600 .Sonic or ultrasonic
601 ..Immersion bath utilized
58 ELECTRICAL PRODUCT PRODUCED
59 .Welding electrode
60 ..Post-treating with solid treating member
61 ..Metal coating or Group IIA metallic compound containing coating
62 .Superconductor
63 ..Nonuniform coating
64 .Fluorescent or phosphorescent base coating (e.g., cathode-ray tube, luminescent screen, etc.)
65 ..X-radiation properties
66 ..Electroluminescent lamp
67 ..Fluorescent lamp
68 ..Multicolor or mosaic (e.g., color T.V. tube, etc.)
69 ..Vapor deposition
70 ...Nonmetallic coating formed by vapor deposition
71 ..Particles applied
72 ..Rotating the base
73 ..Settling out of liquid
74 .Photoelectric
75 ..Mosaic or nonuniform coating
76 ..Coating is selenium, tellurium, or compound thereof
77 .Electron emissive or suppressive (excluding electrode for arc)
78 ..Vapor deposition or spraying
79 .Condenser or capacitor
80 ..Electrolytic or barrier layer type
81 ..Vacuum or pressure utilized
* 96.1 .Integrated circuit, printed circuit, or circuit board
* 96.2 ...Protective coating (e.g., encapsulating, etc.)
* 96.3 ...Electromagnetic wave energy shield (e.g., electromagnetic wave shield (EWS), etc.)
* 96.4 ...Conformal (e.g., thin film <.02 mm thick, etc.)
* 96.5 ...Mechanical shock, stress, or physical damage absorbing or shielding (e.g., scratch or puncture-resistant coating, etc.)
* 96.6 ...Barrier to diffusion of specific fluid (e.g., silicone rubber, selectively permeable membrane which excludes water or moisture, etc.)
* 96.7 ..Using mist or aerosol
* 96.8 ..Vapor or gas deposition
* 96.9 ..Front and back of substrate coated (excluding processes where all coating is by immersion)
* 97.1 ..Multilayer
* 97.2 ...Coating hole wall
* 97.3 ...Nonuniform or patterned coating
* 97.4 ....With posttreatment of coating or coating material
* 97.5 .....Polymer deposited
* 97.6 ...With posttreatment of coating or coating material
* 97.7 ..Coating hole wall
* 97.8 ...With pretreatment of substrate
* 97.9 ....Immersion metal plating from solution (e.g., electroless plating, etc.)
* 98.1 .....Activating or catalyst pretreatment
* 98.2 ...With posttreatment of coating or coating material
* 98.3 ....Heating (e.g., curing, etc.)
* 98.4 ..Nonuniform or patterned coating
* 98.5 ...With pretreatment of substrate
* 98.6 ..With pretreatment of substrate
* 98.7 ...Swelling
* 98.8 ...Etching or roughening
* 98.9 ...Heating
* 99.1 ...Activating or catalyst pretreatment
* 99.2 ..With posttreatment of coating or coating material
* 99.3 ...Planarization
* 99.4 ...Polymer deposited
* 99.5 ..Immersion metal plating from solution (e.g., electroless plating, etc.)
100 .Piezoelectric properties
101 .Resistor for current control (excludes heating element)
102 ..Nonuniform coating
103 ..Applying superposed diverse coatings or coating a coated base
104 .Motor stator or core for winding
105 .Hollow article
106 ..Glass (e.g., light bulb, etc.)
107 ...Vapor deposition
108 .Transparent base
109 ..Vapor deposition
110 ..Spraying
111 .Filament for lamp or tube
112 ..Carbon filament
113 .Carbon base
114 ..Brushes
115 .Fuel cell part
116 .Coil or winding
117 .Wire conductor
118 ..Applying superposed coatings or coating a coated base
119 ..Foam, cellular, or natural rubber coating

ELECTRICAL PRODUCT PRODUCED
.Wire conductor
120 ..Heat utilized
121 .Cellulosic or fibrous base (e.g., wood, paper, etc.)
122 .Carbon coating
123 .Metal coating
124 ..Vapor deposition or utilizing vacuum
125 ..Silver, gold, platinum, or palladium
126.1 .Metallic compound coating
126.2 ..Glass or ceramic base or coating
126.3 ..Metal oxide, peroxide, or hydroxide coating
126.4 ...Metal is Al
126.5 ...Metal is Au, Ag, Pt, Pd, Ru, Rh, Os, Ir
126.6 ...Metal is Ni, Fe, or Co
127 MAGNETIC BASE OR COATING
128 .Magnetic coating
129 ..With pretreatment of base
130 ..With post-treatment of coating or coating material
131 ..Applying superposed diverse coating or coating a coated base
132 ..Metal coating
133 MOLD COATING
134 .Sand mold
135 .Metal mold
136 COATING PAVEMENT OR THE EARTH (E.G., ROADMAKING, ETC.)
137 .Striping, marking, or increasing reflectivity
138 .Asphalt, bitumen, oil, or tar containing coating
139 ..Rolling
140 RESTORING OR REPAIRING
141 .Carbon paper or inked ribbon
142 .Metal article
143 STENCIL BLANK MAKING
144 HECTROGRAPHIC OR COPYING SURFACE MAKING
145 LATENT IMAGE FORMED OR DEVELOPED
146 TRANSFER OR COPY SHEET MAKING
147 .Decal or embossing foil type (i.e., continuous film transfers)
148 ..Heat sensitive
149 ..Fluid releasable
150 .Reactive components
151 ..Heterocyclic organic compound component
152 .Coating opposite sides or forming plural or nonuniform coats
153 .Carbon paper type
154 REMOVABLE PROTECTIVE COATING APPLIED
155 .Organic base
156 .Metal base
157 FLUORESCENT OR PHOSPHORESCENT COATING
158 .Optical brightening
159 INCANDESCENT MANTLE PRODUCED
160 COATING HAS X-RAY, ULTRAVIOLET, OR INFRARED PROPERTIES
161 TRANSPARENCY OR TRANSLUCENCY INCREASED (E.G., MAKING WINDOW ENVELOPES, ETC.)
162 OPTICAL ELEMENT PRODUCED
163.1 .Polarizer, windshield, optical fiber, projection screen, or retroreflector
163.2 ..Optical fiber, rod, filament, or waveguide
163.3 ..Projection screen
163.4 ..Retroreflector (e.g., light reflecting small spherical beads, etc.)
164 .Transparent base
165 ..Glass
166 ...Vapor depositing
167 ....Silicon compound coating (e.g., quartz, etc.)
168 ...Spraying
169 ...Immersion
170 DELUSTERING FABRIC OR YARN
171 WITH STRETCHING OR TENSIONING
172 .Running lengths
173 ..Lateral stretching
174 ..Particles or fibers applied
175 ..Cord, thread, yarn, or wire
176 ..Textile fabric
177 WITH WINDING, BALLING, ROLLING, OR COILING
178 .Metal or glass base (e.g., wire, etc.)
179 .Paper or felt base
180 SOLID PARTICLES OR FIBERS APPLIED
181 .Interior or hollow article coating
182 ..Fluidized bed utilized
183 ..Rotating the base
184 .Nonuniform speed or nonrectilinear base motion
185 .Fluidized bed utilized
186 .Roofing produced
187 ..With cutting
188 ..Localized different areas produced
189 .Uniting particles to form continuous coating with nondiscernible particles
190 ..Metallic compound particles
191 ..Metal particles
192 ...Aluminum, copper, or zinc particles
193 ..Vitrifiable particles
194 ..Roller utilized
195 ..Synthetic resin particles
196 .Plural direction application of coating materials or simultaneously applying particles and binder from different sources
197 .Localized different areas produced (e.g., printing, etc.)
198 ..Deforming the base or coating or removing part of the coating
199 ..Silicon compound, metal, or metallic compound containing particles applied
200 ..Flock or fibers applied
201 .Plural particulate materials applied
202 .Applying superposed diverse coatings or coating a coated base
203 ..Coating over the applied coating of particles

SOLID PARTICLES OR FIBERS APPLIED
.Applying superposed diverse coatings or coating a coated base
204 ..Silicon compound containing particles (e.g., sand, etc.)
205 ..Metal or metallic compound containing particles
206 ..Flock or fibers applied
207.1 COATING REMAINS ADHESIVE OR IS INTENDED TO BE MADE ADHESIVE
208 .Application to opposite sides of base
208.2 .Heat sensitive adhesive
208.4 .Pressure sensitive adhesive
208.6 ..Nonuniform coating (e.g., perforated, etc.)
208.8 ..Applying superposed diverse coatings or coating a coated base
209 APPLICATION TO OPPOSITE SIDES OF SHEET, WEB, OR STRIP (EXCLUDING PROCESSES WHERE ALL COATING IS BY IMMERSION)
210 .Nonuniform coating
211 .Roller applicator utilized
212 PARTICLES, FLAKES, OR GRANULES COATED OR ENCAPSULATED
213 .Fluidized bed utilized
213.3 .Solid encapsulation process utilizing an emulsion or dispersion to form a solid-walled microcapsule (includes liposome)
213.31 ..With post-treatment of encapsulant or encapsulating material (e.g., further coating, hardening, etc.)
213.32 ...Hardening
213.33 ....Using crosslinking agent
213.34 ..Solid-walled microcapsule formed by in situ polymerization
213.35 ..Solid-walled microcapsule formed from gelatin or derivative thereof
213.36 ..Solid-walled microcapsule formed from preformed synthetic polymer
214 .Applying superposed diverse coatings or coating a coated base
215 .Inorganic base
216 ..Metal base
217 ..Metal coating
218 ..Pigment containing coating
219 ...Silicon compound containing coating
220 ..Organic coating
221 ...Resin, rubber, or hardenable oil containing coating
222 .Resin base
223 FLAME CONTACT
224 .After coating
225 .Metal coating
226 HEAT DECOMPOSITION OF APPLIED COATING OR BASE MATERIAL
227 .Base material decomposed or carbonized
228 .Coating decomposed to form carbide or coating carbonized
229 .Coating decomposed to form metal
230 INTERIOR OF HOLLOW ARTICLE COATING
231 .Rotating the article
232 ..Removing excess coating material
233 ..Spraying
234 ..Metal base
235 .Removing excess coating material
236 .Spraying
237 .Coating by vapor, gas, mist, or smoke
238 .Vacuum or pressure utilized
239 .Metal base
240 CENTRIFUGAL FORCE UTILIZED
241 .Metal coating
242 RUMBLING OR TUMBLING
243 FORAMINOUS PRODUCT PRODUCED
244 .Filter, sponge, or foam
245 .Microporous coating (e.g., vapor permeable, etc.)
246 ..Coagulating or jelling the coating
247 .Metal base
248.1 COATING BY VAPOR, GAS, OR SMOKE
249.1 .Carbon or carbide coating
249.2 ..Chemical vapor infiltration (i.e., CVI) of porous base (e.g., fiber, fibrous web, etc.)
249.3 ..Fiber or fibrous web or sheet base (e.g., strand, filament, fabric, cloth, etc.)
249.4 ...Inorganic carbon base (e.g., graphite, etc.)
249.5 ..Boron and carbon containing coating (e.g., boron carbide, etc.)
249.6 ..Graphite coating
249.7 ..Diamond-like carbon coating (i.e., DLC)
249.8 ..Diamond coating
249.9 ...Patterned or non-uniform coating
249.11 ...Hot filament utilized
249.12 ...Diamond seed crystals utilized
249.13 ...Tungsten containing base
249.14 ...Superposed coatings (i.e., layered)
249.15 ..Silicon and carbon containing coating (e.g., silicon carbide, etc.)
249.16 ...Inorganic carbon base (e.g., graphite, etc.)
249.17 ..Metal carbide containing coating
249.18 ...Chromium (Cr), molybdenum (Mo), or tungsten (W) metal carbide containing coating
249.19 ...Titanium (Ti), zirconnium (Zr), or hafnium (Hf) metal carbide containing coating
250 .Metal coating
251 ..Moving the base
252 ..By decomposing metallic compound (e.g., pack process, etc.)
253 ...Halogen containing compound
254 .Wood base
255.11 .Base includes an inorganic compound containing silicon or metal (e.g., glass, ceramic, brick, etc.)
255.12 ..Chemical vapor infiltration (i.e., CVI) of porous base (e.g., fiber, fibrous web etc.)
255.13 ..Glaze coating produced

COATING BY VAPOR, GAS, OR SMOKE
.Base includes an inorganic compound containing silicon or metal (e.g., glass, ceramic, brick, etc.)
255.14 ..Organic compound containing coating
255.15 ..Plural coatings applied utilizing vapor, gas, or smoke
255.18 ..Silicon containing coating
255.17 ...Halogen containing coating, reactant, or precursor
255.19 ..Metal oxide containing coating
255.21 ..Base includes inorganic metal containing compound
255.22 ...Iron compound containing base (e.g., ferric oxide, etc.)
255.23 .Mixture of vapors or gases (e.g., deposition gas and inert gas, inert gas and reactive gas, two or more reactive gases, etc.) utilized
255.24 ..Fiber or fibrous web or sheet based (e.g., strand, filament, fabric, cloth, etc.)
255.25 ..Mixture contains liquid or solid particulate suspension
255.26 ..Coating formed by reaction of vaporous or gaseous mixture with a base (i.e., reactive coating of non-metal base)
255.27 ...Silicon containing coating
255.28 ..Coating formed from vaporous or gaseous phase reaction mixture (e.g., chemical vapor deposition, CVD, etc.)
255.29 ...Inorganic oxygen, sulfur, selenium, or tellurium (i.e., chalcogen) containing coating (e.g., phosphosilicate, silicon oxynitride, etc.)
255.31 ....Metal and chalcogen containing coating (e.g., metal oxide, metal sulfide, metal telluride, etc.)
255.32 .....Plural metal containing coating (e.g., indium oxide/tin oxide, titanium oxide/aluminum oxide, etc.)
255.33 .....Zinc (Zn), cadmium (Cd), or mercury (Hg), containing
255.34 .....Gallium (Ga), aluminum (Al), or indium (In) containing
255.35 .....Germanium (Ge), tin (Sn), or lead (Pb) containing
255.36 .....Titanium (Ti) or zirconium (Zr) containing
255.37 ....Silicon dioxide coating
255.38 ...Phosphorus or boron containing coating (e.g., aluminum boride, boron phosphide etc.)
255.39 ...Halogen or halogen compound containing reactant
255.391 ....Titanium compound containing coating (e.g., titanium carbonitride, titanium nitride, etc.)
255.392 ....Tungsten compound containing coating (e.g., tungsten silicide, etc.)
255.393 ....Silicon containing coating
255.394 ...Nitrogen containing coating (e.g., metal nitride, etc.)
255.395 ..Inorganic coating
255.4 .Base supplied constituent
255.5 .Moving the base
255.6 .Organic coating applied by vapor, gas, or smoke
255.7 .Plural coatings applied by vapor, gas, or smoke
256 NONUNIFORM COATING
257 .Wrinkled or crackled coating
258 .Applying superposed diverse coatings or coating a coated base
259 ..Including a masking coating
260 ..Handheld brush or absorbent applicator utilized
261 ..Final coating nonuniform
262 ...Variegated surface produced (e.g., mottled, stippled, wood grained, etc.)
263 ....Marbleized
264 ...Deforming the base or coating or removing a portion of the coating
265 ...Plural nonuniform coatings
266 ....Glass or ceramic base
267 ..Variegated surface produced (e.g., mottled, stippled, wood grained, etc.)
268 ...Marbleized
269 ..Glass or ceramic base
270 ..Deforming the base or coating or removing a portion of the coating
271 .Deforming the base or coating or removing a portion of the coating
272 ..Mask or stencil utilized
273 ..Fluid treating the coating (e.g., vapor treating, etc.)
274 ..Variegated surface produced (e.g., stippled, marbleized, mottled, wood grained, etc.)
275 ..Deforming the base
276 ...Simultaneously deforming the coating
277 ..Solid treating member contacts coating
278 ...Roller treating member
279 .Vitreous coating
280 .Variegated surface produced (e.g., mottled, wood grained, etc.)
281 ..Marbleized
282 .Mask or stencil utilized
283 .Crystalization or precipitation coating
284 .Edge or border coating
285 ..Paper or textile base
286 .Striping (i.e., forming stripes)
287 .Metal, glass, or ceramic base
288 .Paper or textile base
289 WITH CUTTING, HOLDING, SEVERING, OR ABRADING THE BASE
290 .Prior to coating
291 ..Wood base (e.g., injecting, etc.)
292 ..Inorganic base
293 .Rectilinear cutting to length
294 VACUUM UTILIZED PRIOR TO OR DURING COATING

VACUUM UTILIZED PRIOR TO OR DURING COATING
295 .Metal base
296 .Organic base
297 ..Wood base
298 ...Creosote, wax, oil, asphalt, or bitumen coating
299 WITH PRETREATMENT OF THE BASE
300 .Shielding or spacing
301 .Preapplied reactant or reaction promoter or hardener (e.g., catalyst, etc.)
302 ..Resin, rubber, or hardenable oil containing coating
303 ...Cellulosic base
304 ..Metal coating (e.g., electroless deposition, etc.)
305 ...Nickel, copper, cobalt, or chromium coating
306 ....Organic base
307 .Etching, swelling, or dissolving out part of the base
308 ..Cellulosic base
309 ..Inorganic base
310 .Fluxing
311 ..Supernatant flux (floating)
312 ...Lead or tin coating
313 ..Lead or tin coating
314 .Heating or drying pretreatment
315 ..Steam utilized
316 ..Organic base
317 ...Wood base
318 ..Metal base
319 ...Metal coating
320 ....Aluminum coating
321 ....Zinc or spelter coating (e.g., galvanizing, etc.)
322 .Organic base
323 ..Natural protein containing base (e.g., silk, wool, leather, etc.)
324 ..Cellulosic base
325 ...Wood base
326 ...Paper base
327 .Metal base
328 ..Metal coating
329 ...Molten metal bath utilized
330 ..Vitreous coating
331 WITH POST-TREATMENT OF COATING OR COATING MATERIAL
332 .Deodorizing
333 .Plural film forming coatings wherein one coating contains a chemical treating agent for the other
334 .Oil or wax treatment of coating
335 .Solvent vapor treatment of coating
336 .Swelling agent or solvent applied to treat coating
337 .Chemical agent applied to treat coating
338 ..Proteinaceous coating
339 ..Cellulosic coating
340 ..Resin, resin precursor, rubber, or hardenable oil containing coating
341 ...Inorganic treating agent
342 ...Textile or cellulosic base
343 ..Inorganic coating
344 ...Silicon compound containing coating
345 .Coating material recirculation or regeneration
346 .Movement of work treats coating (e.g., vibrating, tilting, etc.)
347 ..Metal coating
348 .Gas jet or blast mechanically treats coating
349 ..Metal coating
350 .Vacuum or reduced pressure utilized
351 ..Wood base
352 .Liquid extraction of coating constituent or cleaning coating
353 ..With water
354 ...Drying subsequent to washing
355 .Solid treating member or material contacts coating
356 ..Die, blade, or sharp-edged tool
357 ...Metal coating
358 ...Organic coating
359 ..Roller, drum, or cylinder
360 ...Metal coating
361 ...Paper base (e.g., calendering, etc.)
362 ....Cast coating
363 ....Wax or oil containing coating
364 ....Casein or starch containing coating
365 ...Treating between rollers (e.g., calendering, etc.)
366 ....With heating (e.g., heated roller, etc.)
367 ..Metal coating
368 ..Brushing
369 ..Pressure treatment of coating (e.g., squeezing, etc.)
370 ...With heating (e.g., hot ironing, etc.)
371 ..Organic base
372.2 .Heating or drying (e.g., polymerizing, vulcanizing, curing, etc.)
373 ..Cells, foam, or bubbles formed
374.1 ..And cooling
374.2 ...Heating after cooling
374.3 ....Without intervening coating step
374.4 ...Fused or molten coating cooled
374.5 ....Liquid or solid cooling medium
374.6 ....Vacuum, vapor, or gas other than air utilized
374.7 ....Vitreous or glazed coating
375 ..Fusion or softening of coating
376.1 ...Inorganic coating
376.2 ....Metal oxide- or silicon-containing coating (e.g., glazed, vitreous enamel, etc.)
376.3 .....Metal-containing coating (e.g., cermet, etc.)
376.4 .....Metal base
376.5 ......Ferrous base
376.6 ....Metal-containing coating
376.7 .....Coating consists of metal
376.8 ......Metal base

WITH POST-TREATMENT OF COATING OR COATING MATERIAL
.Heating or drying (e.g., polymerizing, vulcanizing, curing, etc.)
377 ..Modified condition of atmosphere (e.g., steam, air movement, etc.)
378 ...Movement of atmosphere
379 ..Plural heating or drying steps
380 ...Metal or metallic compound containing coating
381 ...Textile or cellulosic base
382 ....Paper or natural cellulose base
383.1 ..Metal coating
383.3 ...Inorganic base
383.5 ....Fused oxide-containing base (e.g., ceramic, glass, etc.)
383.7 ....Metal base
384 ..Organic coating
385.5 ...Resin, resin precursor, rubber, or hardenable oil-containing coating
386 ....Epoxy or polyepoxide containing coating
387 ....Silicon compound containing coating
388.1 ....Metal base
388.2 .....Cross-linked or infusible coating
388.3 .....Aldehyde-containing precursor
388.4 .....Water-containing coating (i.e., aqueous dispersion, emulsion, or solution)
388.5 .....Nonaqueous dispersion
389 ....Proteinaceous base (e.g., wool, leather, etc.)
389.7 ....Glass base
389.8 .....Fiberglass base
389.9 ....Textile or cellulose base
391 .....Paper base
392 .....Natural cellulose base
393 .....Wood base
393.1 .....Antistatic properties increased
393.2 .....Wrinkle resistance of crease holding properties increased
393.3 .....Flame resistance increased
393.4 .....Antisoiling or water repellency increased
393.5 ....Resin, rubber, or elastomer base
393.6 ....Asbestos, ceramic, concrete, or masonry base
394 ...Textile or cellulosic base
395 ....Paper base
396 ....Natural cellulose base
397 .....Wood base
397.7 ..Inorganic silicon-containing coating
397.8 ...Alkali silicate
398.1 .Cooling
398.2 ..Utilizing solid member contacting base or coating (e.g., cooling roller, etc.)
398.3 ..Liquid utilized (e.g., quenching, spraying, etc.)
398.4 ..Vacuum, vapor, or gas other than air utilized
398.5 ..Movement of atmosphere
399 BASE SUPPLIED CONSTITUENT
400 .Resin or rubber base
401 COMBINED
402 APPLYING SUPERPOSED DIVERSE COATING OR COATING A COATED BASE
403 .Settable inorganic coating (e.g., cement, etc.)
404 .Metal coating
405 ..Metal base
406 ...Zinc coating
407.1 .Synthetic resin coating
407.2 ..Glass base
407.3 ...Fiberglass base
408 ..Wood base
409 ..Metal base
410 ...Epoxy or polyepoxide containing coating
411 ..Paper base
412 ..Textile or leather base
412.1 ..Nonfibrous organic base
412.2 ...Cellulose derivative base
412.3 ...Polyolefin base
412.4 ...Halogen-containing resin base
412.5 ...Polyester or alkyd resin base
413 .Natural rubber or derivative containing coating
414 .Protein or derivative containing coating (e.g., casein, glue, gelatin, etc.)
415 .Cellulosic coating
416 .Wax containing coating
417 .Natural resin, oil, or fat containing
418 ..Metallic compound-containing coating
419.1 .Metallic compound-containing coating
419.2 ..Oxide-containing coating
419.3 ...Superposed diverse oxide coatings
419.4 ....Vitreous coating
419.5 ...Organic coating
419.6 ...Vitreous coating
419.7 ..Boride, carbide, nitride, phosphide, silicide, or sulfide-containing coating
419.8 ..Organometallic or metal salt of organic compound-containing coating
420 FALLING CURTAIN OF COATING MATERIAL UTILIZED (I.E., CURTAIN COATING)
* 421.1 SPRAYING
422 .Heated coating material
424 .Moving the base
425 ..Rotating or inverting
426 .Ingredients supplied separately
427 .Inorganic coating material
* 427.1 .Using nozzle or projector supported or guided by base (e.g., work, workpiece, etc.) during coating
* 427.2 .With programmed control or using mechanized nozzle or projector (e.g., robotic sprayer, etc.)
* 427.3 .Moving nozzle or projector
* 427.4 .Polymer containing coating material
* 427.5 ..Metal base
* 427.6 ..Organic compound containing base

SPRAYING
* 427.7 .Organic compound containing base
* 428.01 ROLLER APPLICATOR UTILIZED (E.G., PADDING, ETC.)
* 428.02 .Single roller applies plural layers of same coating material to base
* 428.03 .Roller composed of three or more layers used
* 428.04 .Tapered roller used
* 428.05 .Fibrous or porous surface roller used
* 428.06 .Grooved or textured surface roller used
* 428.07 .Resilient (e.g., rubber, etc.) surface roller used
* 428.08 ..Plural roller applicators used
* 428.09 ..Opposed, counter, or reverse surface movement at contact between roller applicator and base
* 428.1 ..Including using roller backup support for base
* 428.11 .Opposed, counter, or reverse surface movement at contact between roller applicator and base
* 428.12 ..And using transfer roller to feed coating material to roller applicator
* 428.13 .And roller end dams used
* 428.14 .And doctor or roller used to distribute coating material on roller applicator
* 428.15 ..And using transfer roller to feed coating material to roller applicator
* 428.16 ..And guiding base to follow surface curvature of roller applicator
* 428.17 ..Including using roller backup support for base
* 428.18 .Including using force to supply coating material to roller applicator
* 428.19 ..Through nozzle or projector
* 428.2 .Direct contact of roller applicator with coating material supply bath used
* 428.21 .Including using roller backup support for base
429 BRUSH OR ABSORBENT APPLICATOR UTILIZED
430.1 IMMERSION OR PARTIAL IMMERSION
431 .Molten metal or fused salt bath
432 ..Inert gas or nonoxidizing atmosphere utilized
433 ..Lead, zinc, or tin coating (e.g., galvanizing, etc.)
434.2 .Running lengths
434.3 ..Coating applied at surface of bath only
434.4 ..Base treated by solid member in bath (e.g., scraped, squeezed, etc.)
434.5 ..Coating material moved (e.g., agitated, circulated, etc.)
434.6 ..Cord, thread, yarn, wire, or rod
434.7 ...Extending through bath-containing wall
435 .Metal base
436 ..Metal coating
437 ...Chemical compound reducing agent utilized (i.e., electroless deposition)
438 ....Nickel coating
439 .Cellulosic base
440 ..Wood base
441 ...Creosote, wax, oil, asphalt, or bitumen containing coating
442 ..Wax, oil, asphalt, or bitumen containing coating
443 .Wax, oil, asphalt, or bitumen containing coating
443.1 .Chemical compound reducing agent utilized (i.e., electroless deposition)
443.2 .Inorganic base
444 PRETREATMENT, PER SE, OR POST-TREATMENT, PER SE (WITHOUT CLAIMED COATING)
445 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 CHEMICAL VAPOR INFILTRATION (I.E., CVI)
901 LIQUID SOURCE CHEMICAL DEPOSTION (I.E., LSCVD) OR AEROSOL CHEMICAL VAPOR DEPOSITION (I.E., ACVD)
903 FULLERENE TYPE BASE OR COATING
902 DIAMOND-LIKE CARBON COATING (I.E., DLC)
904 .Utilizing low energy electromagnetic radiation (e.g., microwave, radio wave, IR, UV, visible, actinic laser, etc.)
905 .Utilizing ion plating or ion implantation
906 .Utilizing plasma (e.g., corona, glow discharge, cold plasma, etc.)

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FOREIGN ART COLLECTIONS

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FOR 000 CLASS-RELATED FOREIGN DOCUMENTS

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collections listed below. These Collections contain ONLY foreign patents or non-patent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

COATING BY VAPOR, GAS, OR SMOKE
FOR 100 .Carbon or carbide coating (427/249)
FOR 101 .Base includes inorganic silicon or metal containing compound (e.g., glass, ceramic, brick, etc.) (427/255)
FOR 102 .Mixture of vapors or gases utilized (427/255.1)
FOR 103 ..The resultant coating is a mixture or a compound formed from the mixture utilized (427/255.2)
FOR 104 ...The mixture utilized contains oxygen (427/255.3)

*	ELECTRICAL PRODUCT PRODUCED (427/58)
* FOR 105	.Integrated circuit, printed circuit, or circuit board (427/96)
* FOR 106	..Coating hole walls (427/97)
* FOR 107	..Immersion metal plating from solution (e.g., electroless plating, etc.) (427/98)
* FOR 108	..Vapor deposition (427/99)
* FOR 109	SPRAYING (427/421)
* FOR 110	ROLLER APPLICATOR UTILIZED (E.G., PADDING, ETC.) (427/428)

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT
PROJECT: C5091

Generated by: Data Control Division

New Classification	Number Of ORs	Source Classification	Number Of ORs
101/483	1	427/428	128
106/1.24	1	427/97	148
106/711	1	427/421	225
118/231	1	427/428	128
118/504	1	427/97	148
118/663	1	427/421	225
118/689	1	427/98	154
119/712	1	427/421	225
148/251	1	427/98	154
148/512	1	427/96	419
	1	427/98	154
148/518	1	427/96	419
148/679	1	427/98	154
156/151	1	427/96	419
156/155	1	427/98	154
156/230	1	427/96	419
156/250	1	427/96	419
156/277	2	427/96	419
156/281	1	427/96	419
156/305	1	427/96	419
156/357	1	427/428	128
156/62.2	1	427/98	154
156/89.12	1	427/97	148
156/89.16	1	427/96	419
174/254	1	427/96	419
174/255	1	427/96	419
174/259	1	427/96	419
204/192.14	1	427/98	154
204/192.17	1	427/96	419
204/192.23	1	427/96	419
204/488	1	427/98	154
205/119	1	427/96	419
205/122	1	427/96	419
205/123	1	427/97	148
205/125	1	427/97	148
	1	427/98	154
	2	427/96	419
205/126	2	427/96	419
	3	427/97	148
	4	427/98	154
205/158	1	427/428	128
	2	427/96	419
205/85	1	427/421	225
	1	427/96	419

SOURCE CLASSIFICATION(S) OF PATENTS
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New Classification	Number Of ORs	Source Classification	Number Of ORs
205/85	1	427/97	148
	3	427/98	154
216/12	1	427/421	225
	1	427/98	154
	2	427/96	419
216/13	3	427/97	148
	5	427/99	52
	12	427/96	419
	13	427/98	154
216/14	1	427/96	419
216/16	1	427/98	154
	3	427/96	419
216/17	1	427/98	154
	2	427/96	419
	2	427/99	52
	8	427/97	148
216/18	3	427/96	419
	3	427/98	154
	6	427/97	148
216/19	1	427/96	419
	1	427/97	148
216/20	1	427/96	419
	1	427/98	154
	1	427/99	52
216/6	2	427/96	419
216/7	1	427/96	419
228/118	2	427/96	419
228/119	1	427/96	419
228/120	1	427/96	419
228/125	1	427/96	419
228/136	1	427/96	419
228/176	2	427/98	154
228/180.22	1	427/96	419
228/201	1	427/96	419
228/209	2	427/98	154
252/363.5	1	427/421	225
264/108	1	427/421	225
264/129	1	427/421	225
29/17.5	1	427/96	419
29/825	1	427/96	419
29/840	1	427/96	419
29/842	2	427/96	419
29/852	1	427/96	419
	5	427/97	148

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New Classification	Number Of ORs	Source Classification	Number Of ORs
343/873	1	427/96	419
347/100	1	427/421	225
361/313	1	427/96	419
386/52	1	427/96	419
405/128.7	1	427/421	225
426/237	1	427/428	128
427/10	1	427/98	154
	2	427/421	225
427/102	2	427/96	419
427/106	1	427/96	419
427/108	1	427/96	419
427/11	1	427/428	128
427/115	2	427/421	225
427/116	1	427/96	419
427/118	2	427/96	419
427/120	1	427/96	419
	1	427/99	52
427/123	3	427/96	419
427/125	1	427/98	154
427/126.1	1	427/428	128
427/127	1	427/421	225
427/128	2	427/428	128
427/132	1	427/98	154
427/140	1	427/421	225
427/144	1	427/428	128
427/146	2	427/428	128
427/156	1	427/428	128
	3	427/421	225
427/160	2	427/421	225
427/162	1	427/421	225
427/163.1	1	427/421	225
427/168	3	427/421	225
427/178	1	427/421	225
427/180	2	427/421	225
427/195	1	427/421	225
427/2.1	1	427/421	225
427/201	1	427/421	225
427/207.1	5	427/421	225
	16	427/428	128
427/208.2	1	427/421	225
427/208.4	1	427/428	128
427/208.6	1	427/421	225
427/209	4	427/421	225
427/210	1	427/421	225

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New Classification	Number Of ORs	Source Classification	Number Of ORs
427/211	3	427/428	128
427/212	2	427/421	225
427/216	1	427/421	225
427/217	1	427/421	225
427/230	1	427/428	128
427/236	7	427/421	225
427/243	2	427/421	225
427/256	1	427/428	128
	2	427/421	225
427/260	1	427/421	225
427/276	1	427/421	225
	1	427/428	128
427/282	1	427/421	225
427/287	1	427/428	128
427/288	2	427/428	128
427/294	1	427/421	225
427/314	1	427/421	225
427/331	1	427/421	225
427/341	1	427/421	225
427/345	1	427/421	225
427/346	1	427/421	225
427/348	1	427/428	128
427/365	1	427/428	128
427/378	1	427/428	128
427/385.5	1	427/421	225
427/386	2	427/421	225
427/387	1	427/421	225
427/388.1	1	427/421	225
	1	427/428	128
427/389.9	1	427/421	225
427/393	1	427/421	225
427/393.4	1	427/421	225
427/4	3	427/421	225
427/401	1	427/421	225
427/402	1	427/421	225
427/405	1	427/421	225
	1	427/428	128
427/407.1	1	427/421	225
427/409	1	427/421	225
427/410	1	427/421	225
427/411	1	427/421	225
427/412	1	427/421	225
427/419.2	1	427/421	225
427/421.1	3	427/421	225

SOURCE CLASSIFICATION(S) OF PATENTS
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New Classification	Number Of ORs	Source Classification	Number Of ORs
427/421.1	24	427/421	225
427/422	4	427/421	225
427/424	2	427/428	128
	10	427/421	225
427/425	2	427/421	225
427/426	7	427/421	225
427/427	3	427/421	225
427/427.1	4	427/421	225
427/427.2	1	427/421	225
	6	427/421	225
427/427.3	1	427/421	225
427/427.4	12	427/421	225
427/427.5	10	427/421	225
427/427.6	9	427/421	225
427/427.7	5	427/421	225
427/428.01	1	427/428	128
	6	427/428	128
427/428.02	1	427/428	128
427/428.03	1	427/428	128
427/428.04	1	427/428	128
427/428.05	3	427/428	128
427/428.06	3	427/428	128
427/428.07	2	427/428	128
427/428.08	2	427/428	128
427/428.09	2	427/428	128
427/428.10	5	427/428	128
427/428.11	5	427/428	128
427/428.12	3	427/428	128
427/428.13	2	427/428	128
427/428.14	2	427/428	128
427/428.15	1	427/428	128
	6	427/428	128
427/428.16	2	427/428	128
427/428.17	5	427/428	128
427/428.18	2	427/428	128
427/428.19	4	427/428	128
427/428.20	6	427/428	128
427/428.21	3	427/428	128
427/435	1	427/428	128
427/444	1	427/98	154
427/448	1	427/99	52
427/453	1	427/421	225
427/458	1	427/99	52
427/466	1	427/428	128

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New Classification	Number Of ORs	Source Classification	Number Of ORs
427/470	2	427/97	148
427/475	1	427/421	225
427/483	2	427/421	225
427/492	1	427/96	419
427/497	1	427/99	52
427/5	1	427/428	128
427/508	1	427/96	419
427/510	1	427/96	419
	1	427/97	148
427/512	1	427/421	225
427/541	1	427/96	419
427/542	2	427/96	419
427/545	1	427/99	52
427/546	1	427/98	154
427/547	1	427/96	419
427/553	2	427/98	154
427/554	3	427/96	419
427/555	2	427/97	148
	4	427/96	419
427/559	1	427/96	419
427/560	1	427/96	419
427/561	1	427/99	52
427/565	2	427/421	225
427/568	1	427/99	52
427/58	2	427/421	225
	4	427/96	419
427/583	1	427/99	52
427/595	1	427/421	225
427/72	1	427/421	225
427/74	1	427/96	419
427/78	1	427/421	225
427/79	1	427/98	154
	2	427/97	148
	4	427/96	419
427/8	4	427/428	128
	6	427/96	419
	14	427/421	225
427/9	1	427/428	128
427/96.1	1	427/421	225
	1	427/96	419
	7	427/96	419
427/96.2	1	427/421	225
	1	427/99	52
	17	427/96	419

SOURCE CLASSIFICATION(S) OF PATENTS
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PROJECT: C5091

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New Classification	Number Of ORs	Source Classification	Number Of ORs
427/96.2	21	427/96	419
427/96.3	1	427/421	225
	6	427/96	419
427/96.4	1	427/421	225
	1	427/96	419
	1	427/99	52
	5	427/96	419
427/96.5	5	427/96	419
427/96.6	1	427/96	419
	11	427/96	419
427/96.7	1	427/96	419
	1	427/97	148
	1	427/99	52
427/96.8	1	427/96	419
	1	427/98	154
	2	427/99	52
	5	427/96	419
	5	427/97	148
	13	427/99	52
427/96.9	1	427/97	148
	1	427/98	154
	2	427/96	419
	6	427/96	419
	7	427/97	148
427/97.1	2	427/96	419
	4	427/98	154
	4	427/98	154
427/97.2	2	427/97	148
	3	427/98	154
	5	427/96	419
	11	427/98	154
	12	427/96	419
	28	427/97	148
427/97.3	1	427/96	419
	12	427/98	154
	13	427/96	419
427/97.4	3	427/98	154
	4	427/96	419
	26	427/96	419
427/97.5	5	427/98	154
	14	427/96	419
427/97.6	1	427/96	419
	2	427/96	419
427/97.7	2	427/98	154

SOURCE CLASSIFICATION(S) OF PATENTS
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New Classification	Number Of ORs	Source Classification	Number Of ORs
427/97.7	5	427/97	148
427/97.8	1	427/96	419
	3	427/97	148
427/97.9	3	427/97	148
427/98.1	1	427/96	419
	1	427/97	148
	3	427/98	154
	12	427/97	148
427/98.2	2	427/96	419
	6	427/97	148
427/98.3	1	427/96	419
	4	427/97	148
427/98.4	2	427/96	419
	4	427/98	154
	38	427/96	419
427/98.5	1	427/98	154
	3	427/96	419
	8	427/96	419
	13	427/98	154
427/98.6	2	427/98	154
	3	427/96	419
427/98.7	1	427/98	154
427/98.8	1	427/96	419
	2	427/98	154
427/98.9	1	427/96	419
427/99.1	9	427/98	154
427/99.2	2	427/96	419
427/99.3	3	427/96	419
427/99.4	3	427/96	419
427/99.5	5	427/98	154
428/168	1	427/96	419
428/195.1	1	427/96	419
428/209	1	427/98	154
428/394	1	427/428	128
428/419	1	427/428	128
428/43	1	427/428	128
428/433	1	427/97	148
428/467	1	427/428	128
428/601	1	427/96	419
	1	427/98	154
430/125	1	427/96	419
430/140	1	427/428	128
430/198	1	427/96	419
430/271.1	1	427/421	225

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT
PROJECT: C5091

Generated by: Data Control Division

New Classification	Number Of ORs	Source Classification	Number Of ORs
430/271.1	2	427/96	419
430/286.1	1	427/96	419
430/311	1	427/421	225
	2	427/96	419
430/312	1	427/98	154
	2	427/97	148
	6	427/96	419
430/313	1	427/96	419
430/314	4	427/97	148
	6	427/98	154
	7	427/96	419
430/315	1	427/96	419
	1	427/97	148
	3	427/98	154
430/319	1	427/96	419
	1	427/97	148
	1	427/98	154
430/5	2	427/96	419
430/600	1	427/96	419
430/630	1	427/98	154
434/84	1	427/421	225
438/106	1	427/97	148
	2	427/96	419
438/107	1	427/96	419
438/118	1	427/96	419
438/127	1	427/96	419
438/137	1	427/96	419
438/142	1	427/96	419
438/17	1	427/99	52
438/199	1	427/99	52
438/22	1	427/96	419
438/225	1	427/96	419
438/3	1	427/96	419
438/322	1	427/96	419
438/384	1	427/99	52
438/393	1	427/96	419
438/409	2	427/97	148
438/439	1	427/96	419
438/46	1	427/96	419
438/460	1	427/96	419
438/462	1	427/97	148
438/479	1	427/96	419
	1	427/97	148
	1	427/99	52

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT
PROJECT: C5091

Generated by: Data Control Division

New Classification	Number Of ORs	Source Classification	Number Of ORs
438/488	1	427/99	52
438/5	1	427/97	148
438/51	1	427/99	52
438/572	1	427/98	154
438/584	1	427/97	148
438/592	1	427/96	419
438/598	1	427/96	419
438/608	1	427/96	419
438/612	1	427/98	154
438/618	1	427/96	419
	1	427/99	52
438/622	1	427/96	419
438/626	2	427/97	148
438/627	1	427/97	148
438/633	1	427/98	154
438/641	1	427/96	419
438/643	1	427/96	419
	2	427/97	148
438/645	1	427/97	148
438/652	2	427/96	419
438/655	1	427/99	52
438/656	2	427/97	148
	3	427/99	52
438/665	1	427/97	148
438/667	2	427/97	148
438/669	1	427/98	154
	1	427/99	52
438/670	1	427/99	52
438/675	1	427/99	52
438/677	1	427/97	148
438/680	2	427/99	52
438/696	1	427/97	148
438/73	1	427/96	419
438/758	1	427/96	419
438/759	1	427/96	419
438/760	1	427/96	419
438/761	1	427/99	52
438/762	1	427/96	419
438/763	2	427/96	419
438/778	1	427/96	419
	1	427/99	52
438/780	3	427/96	419
438/781	1	427/96	419
438/785	1	427/96	419

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT
PROJECT: C5091

Generated by: Data Control Division

New Classification	Number Of ORs	Source Classification	Number Of ORs
438/84	1	427/98	154
442/125	1	427/428	128
445/25	1	427/96	419
514/772	1	427/421	225
52/382	1	427/421	225
524/521	1	427/421	225
65/33.4	1	427/96	419
65/43	1	427/98	154
65/60.2	1	427/97	148
72/343	1	427/97	148

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/421	225	106/711	1
		118/663	1
		119/712	1
		205/85	1
		216/12	1
		252/363.5	1
		264/108	1
		264/129	1
		347/100	1
		405/128.7	1
		427/10	2
		427/115	2
		427/127	1
		427/140	1
		427/156	3
		427/160	2
		427/162	1
		427/163.1	1
		427/168	3
		427/178	1
		427/180	2
		427/195	1
		427/2.1	1
		427/201	1
		427/207.1	5
		427/208.2	1
		427/208.6	1
		427/209	4
		427/210	1
		427/212	2
		427/216	1
		427/217	1
		427/236	7
		427/243	2
		427/256	2
		427/260	1
		427/276	1
		427/282	1
		427/294	1
		427/314	1
		427/331	1
		427/341	1
		427/345	1
		427/346	1
		427/385.5	1
		427/386	2

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/421	225	427/387	1
		427/388.1	1
		427/389.9	1
		427/393	1
		427/393.4	1
		427/4	3
		427/401	1
		427/402	1
		427/405	1
		427/407.1	1
		427/409	1
		427/410	1
		427/411	1
		427/412	1
		427/419.2	1
		427/421.1	3
		427/421.1	24
		427/422	4
		427/424	10
		427/425	2
		427/426	7
		427/427	3
		427/427.1	4
		427/427.2	1
		427/427.2	6
		427/427.3	1
		427/427.4	12
		427/427.5	10
		427/427.6	9
		427/427.7	5
		427/453	1
		427/475	1
		427/483	2
		427/512	1
		427/565	2
		427/58	2
		427/595	1
		427/72	1
		427/78	1
		427/8	14
		427/96.1	1
		427/96.2	1
		427/96.3	1
		427/96.4	1
		430/271.1	1
		430/311	1

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/421	225	434/84	1
		514/772	1
		52/382	1
		524/521	1
427/428	128	101/483	1
		118/231	1
		156/357	1
		205/158	1
		426/237	1
		427/11	1
		427/126.1	1
		427/128	2
		427/144	1
		427/146	2
		427/156	1
		427/207.1	16
		427/208.4	1
		427/211	3
		427/230	1
		427/256	1
		427/276	1
		427/287	1
		427/288	2
		427/348	1
		427/365	1
		427/378	1
		427/388.1	1
		427/405	1
		427/424	2
		427/428.01	1
		427/428.01	6
		427/428.02	1
		427/428.03	1
		427/428.04	1
		427/428.05	3
		427/428.06	3
		427/428.07	2
		427/428.08	2
		427/428.09	2
		427/428.10	5
		427/428.11	5
		427/428.12	3
		427/428.13	2
		427/428.14	2
		427/428.15	1
		427/428.15	6

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/428	128	427/428.16	2
		427/428.17	5
		427/428.18	2
		427/428.19	4
		427/428.20	6
		427/428.21	3
		427/435	1
		427/466	1
		427/5	1
		427/8	4
		427/9	1
		428/394	1
		428/419	1
		428/43	1
		428/467	1
		430/140	1
		442/125	1
427/96	419	148/512	1
		148/518	1
		156/151	1
		156/230	1
		156/250	1
		156/277	2
		156/281	1
		156/305	1
		156/89.16	1
		174/254	1
		174/255	1
		174/259	1
		204/192.17	1
		204/192.23	1
		205/119	1
		205/122	1
		205/125	2
		205/126	2
		205/158	2
		205/85	1
		216/12	2
		216/13	12
		216/14	1
		216/16	3
		216/17	2
		216/18	3
		216/19	1
		216/20	1
		216/6	2

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/96	419	216/7	1
		228/118	2
		228/119	1
		228/120	1
		228/125	1
		228/136	1
		228/180.22	1
		228/201	1
		29/17.5	1
		29/825	1
		29/840	1
		29/842	2
		29/852	1
		343/873	1
		361/313	1
		386/52	1
		427/102	2
		427/106	1
		427/108	1
		427/116	1
		427/118	2
		427/120	1
		427/123	3
		427/492	1
		427/508	1
		427/510	1
		427/541	1
		427/542	2
		427/547	1
		427/554	3
		427/555	4
		427/559	1
		427/560	1
		427/58	4
		427/74	1
		427/79	4
		427/8	6
		427/96.1	1
		427/96.1	7
		427/96.2	17
		427/96.2	21
		427/96.3	6
		427/96.4	1
		427/96.4	5
		427/96.5	5
		427/96.6	1

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/96	419	427/96.6	11
		427/96.7	1
		427/96.8	1
		427/96.8	5
		427/96.9	2
		427/96.9	6
		427/97.1	2
		427/97.2	5
		427/97.2	12
		427/97.3	1
		427/97.3	13
		427/97.4	4
		427/97.4	26
		427/97.5	14
		427/97.6	1
		427/97.6	2
		427/97.8	1
		427/98.1	1
		427/98.2	2
		427/98.3	1
		427/98.4	2
		427/98.4	38
		427/98.5	3
		427/98.5	8
		427/98.6	3
		427/98.8	1
		427/98.9	1
		427/99.2	2
		427/99.3	3
		427/99.4	3
		428/168	1
		428/195.1	1
		428/601	1
		430/125	1
		430/198	1
		430/271.1	2
		430/286.1	1
		430/311	2
		430/312	6
		430/313	1
		430/314	7
		430/315	1
		430/319	1
		430/5	2
		430/600	1
		438/106	2

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/96	419	438/107	1
		438/118	1
		438/127	1
		438/137	1
		438/142	1
		438/22	1
		438/225	1
		438/3	1
		438/322	1
		438/393	1
		438/439	1
		438/46	1
		438/460	1
		438/479	1
		438/592	1
		438/598	1
		438/608	1
		438/618	1
		438/622	1
		438/641	1
		438/643	1
		438/652	2
		438/73	1
		438/758	1
		438/759	1
		438/760	1
		438/762	1
		438/763	2
		438/778	1
		438/780	3
		438/781	1
		438/785	1
		445/25	1
		65/33.4	1
427/97	148	106/1.24	1
		118/504	1
		156/89.12	1
		205/123	1
		205/125	1
		205/126	3
		205/85	1
		216/13	3
		216/17	8
		216/18	6
		216/19	1
		29/852	5

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/97	148	427/470	2
		427/510	1
		427/555	2
		427/79	2
		427/96.7	1
		427/96.8	5
		427/96.9	1
		427/96.9	7
		427/97.2	2
		427/97.2	28
		427/97.7	5
		427/97.8	3
		427/97.9	3
		427/98.1	1
		427/98.1	12
		427/98.2	6
		427/98.3	4
		428/433	1
		430/312	2
		430/314	4
		430/315	1
		430/319	1
		438/106	1
		438/409	2
		438/462	1
		438/479	1
		438/5	1
		438/584	1
		438/626	2
		438/627	1
		438/643	2
		438/645	1
		438/656	2
		438/665	1
		438/667	2
		438/677	1
		438/696	1
		65/60.2	1
		72/343	1
427/98	154	118/689	1
		148/251	1
		148/512	1
		148/679	1
		156/155	1
		156/62.2	1
		204/192.14	1

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/98	154	204/488	1
		205/125	1
		205/126	4
		205/85	3
		216/12	1
		216/13	13
		216/16	1
		216/17	1
		216/18	3
		216/20	1
		228/176	2
		228/209	2
		427/10	1
		427/125	1
		427/132	1
		427/444	1
		427/546	1
		427/553	2
		427/79	1
		427/96.8	1
		427/96.9	1
		427/97.1	4
		427/97.2	3
		427/97.2	11
		427/97.3	12
		427/97.4	3
		427/97.5	5
		427/97.7	2
		427/98.1	3
		427/98.4	4
		427/98.5	1
		427/98.5	13
		427/98.6	2
		427/98.7	1
		427/98.8	2
		427/99.1	9
		427/99.5	5
		428/209	1
		428/601	1
		430/312	1
		430/314	6
		430/315	3
		430/319	1
		430/630	1
		438/572	1
		438/612	1

Generated by: Data Control Division

Source Classification	Number Of ORs	New Classification	Number Of ORs
427/98	154	438/633	1
		438/669	1
		438/84	1
		65/43	1
427/99	52	216/13	5
		216/17	2
		216/20	1
		427/120	1
		427/448	1
		427/458	1
		427/497	1
		427/545	1
		427/561	1
		427/568	1
		427/583	1
		427/96.2	1
		427/96.4	1
		427/96.7	1
		427/96.8	2
		427/96.8	13
		438/17	1
		438/199	1
		438/384	1
		438/479	1
		438/488	1
		438/51	1
		438/618	1
		438/655	1
		438/656	3
		438/669	1
		438/670	1
		438/675	1
		438/680	2
		438/761	1
		438/778	1

C. CHANGES TO THE U.S. – I.P.C. CONCORDANCE

U.S. Class	U.S. Subclass	I.P.C. Subclass	I.P.C. Notation
427	96.1-96.6	B05D	5/12
		B28B	19/00
		B29B	15/10
		C23C	18/00
			20/00
			24/00
			26/00
			28/00
			30/00
		H01C	17/06
		H05K	3/00
	96.7, 96.8	B05D	5/12
		B29B	15/10
		C23C	14/00
			16/00
			24/00
			26/00
			28/00
		H01C	17/06
		H05K	3/00
	96.9-99.5	B05D	5/12
		B28B	19/00
		B29B	15/10
		C23C	18/00
			20/00
			24/00
			26/00
			28/00
			30/00
		H01C	17/06
		H05K	3/00
	421.1	B05D	1/02
			5/00
			7/00
		B28B	19/00
		B29B	15/10
		C23C	18/00
			20/00
			28/00

C. CHANGES TO THE U.S. – I.P.C. CONCORDANCE

U.S. Class	U.S. Subclass	I.P.C. Subclass	I.P.C. Notation
427	427.1-427.7	B05D	1/02
			5/00
			7/00
		B28B	19/00
		B29B	15/10
		C23C	18/00
			20/00
			28/00
	428.01-428.21	B05D	1/28
			5/00
			7/00
		B29B	15/10
		C23C	18/00
			20/00
			28/00

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 29 - METAL WORKING

Definitions Modified

Subclass 846: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a substrate to produce an integrated or printed circuit or circuit board.

Subclass 852: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 97.2 and 97.7-98.3 for a process of coating a hole wall to produce an integrated or printed circuit or circuit board.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 174 - ELECTRICITY: CONDUCTORS AND INSULATORS

Definitions Modified

Subclass 250: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a substrate to produce an integrated or printed circuit or circuit board.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 216 - ETCHING A SUBSTRATE: PROCESSES

Definitions Modified

Subclass 13: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a substrate to produce an integrated or printed circuit or circuit board.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 239 - FLUID SPRINKLING, SPRAYING, AND DIFFUSING

Definitions Modified

Class Definition: Under SECTION III - REFERENCES TO OTHER CLASSES, SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 421.1-427.7 for a process of coating by spraying.

Subclass 79: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, appropriate subclasses for a process of coating a substrate, especially subclasses 421.1-427.7 for spray coating.

D . CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 257 - ACTIVE SOLID-STATE DEVICES (E.G., TRANSISTORS, SOLID-STATE DIODES)

Definitions Modified

Class Definition: Under SECTION IV - REFERENCES TO OTHER CLASSES, SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 58-126.6, especially subclasses 62 and 63, 66, 74-76, 79-81, 96.1-99.5, 100, and 101-103 for coating processes to make an electrical product (for methods of making, cleaning, coating, etc., active solid-state devices, see Lines With Other Classes and Within This Class, D., above).

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 427 - COATING PROCESSES

Definitions Abolished

Subclasses

96-99, 421, 428

Definitions Modified

Subclass 123: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclasses 96+

Insert:

96.1-99.5, for processes of applying metal coatings to form an integrated or printed circuit or circuit board.

Subclass 248.1: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclass 99

Insert:

96.7, for a process of using a mist or aerosol for coating a substrate to produce an integrated or printed circuit or circuit board.

96.8, for a process of coating vapor or gas phase material (other than a mist or aerosol) onto a substrate to produce an integrated or printed circuit or circuit board.

Delete:

The reference to subclasses 421 through 427

Insert:

421.1-427.7, for a process of coating by spraying (e.g., projecting a mist against a base, etc.), in general.

Subclass 260: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclass 428

Insert:

428.01-428.21, for a process of applying a uniform coating with a roller applicator.

Subclass 359: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclass 428

Insert:

428.01-428.21, for processes of coating by roller application of coating material.

Subclass 422: After the subclass title

Delete:

The subclass definition

Insert:

Processes under subclass 421.1 wherein the temperature of the coating material is raised to above ambient prior to application.

Subclass 424: After the subclass title

Delete:

The subclass definition

Insert:

Processes under subclass 421.1 wherein the base is mechanically moved while being sprayed with coating material.

Subclass 426: After the subclass title

Delete:

The subclass definition

Insert:

Processes under subclass 421.1 in which plural materials are supplied from separate sources and are combined to make up a coating composition while being conveyed from their sources toward the base, said combining taking place (1) prior to discharge from a projecting apparatus or (2) after leaving the apparatus, but prior to contacting the base.

Subclass 427: After the subclass title

Delete:

The subclass definition

Insert:

Processes under subclass 421.1 wherein the coating is based on the inorganic material.

Subclass 437: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclass 98

Insert:

96.9, for a process of coating both sides of a substrate to make an integrated or printed circuit or circuit board (excluding processes where all coating is by immersion) (e.g., electroless plating of one side of a circuit board followed by spraying both sides, etc.).

97.9-98.1, for substrate hole wall coating by immersion metal plating from solution with pretreatment of the substrate to produce an integrated or printed circuit or circuit board.

99.5, for other immersion metal plating to produce an integrated or printed circuit or circuit board.

Subclass 443.1: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclass 98

Insert:

96.9, for a process of coating both sides of a substrate to make an integrated or printed circuit or circuit board (excluding processes where all coating is by immersion) (e.g., electroless plating of one side of a circuit board followed by spraying both sides, etc.).

97.9 and 98.1, for substrate hole wall coating by immersion metal plating from solution with pretreatment of the substrate to produce an integrated or printed circuit or circuit board.

99.5, for other immersion metal plating to produce an integrated or printed circuit or circuit board.

Subclass 585: Under SEE OR SEARCH THIS CLASS, SUBCLASS

Delete:

The reference to subclasses 69, 99, 124, 166, and 248.1+

Insert:

69 and 70, for producing an electrical product by vapor deposition coating of a fluorescent or phosphorescent base which may include utilization of radiant heat.

78, for a process of vapor deposition which may include utilization of radiant heat to make an electrical product which is electron emissive or suppressive (excluding electrode for arc).

96.7, for a process of using a mist or aerosol for coating a substrate which may include utilization of radiant heat to produce an integrated or printed circuit or circuit board.

96.8, for a process of coating vapor or gas phase material (other than a mist or aerosol) onto a substrate which may include utilization of radiant heat to produce an integrated or printed circuit or circuit board.

124, for a process of metal coating by vapor deposition or utilizing vacuum which may include utilization of radiant heat to make an electrical product, in general.

166 and 167, for a process of making an optical element by vapor deposition onto a transparent glass base which may include utilization of radiant heat.

248.1-255.7, for other processes of coating by vapor, gas, or smoke which may include utilization of radiant heat.

497, 509, 582-584, and 593, for other vapor deposition processes involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material.

Under SEE OR SEARCH CLASS

Insert:

117, Single-Crystal, Oriented-Crystal, and Epitaxy Growth Processes; Non-Coating Apparatus Therefor, appropriate subclasses for a process for growing therein-defined single crystal of all types of materials, including inorganic or organic, and by all techniques, especially subclasses 84-109 for vapor or gas phase epitaxy.

Definitions Established

96.1 Integrated circuit, printed circuit, or circuit board:
Process under subclass 58 of coating for producing an integrated circuit, printed circuit, or circuit board (e.g., a circuit in which conductive wire has been replaced by a conductive coating or a combination of interconnected circuit elements produced by coating, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

79-81, for a process of coating an integrated circuit involving a condenser or capacitor.

SEE OR SEARCH CLASS:

29, Metal Working, subclasses 825-885, especially subclasses 846-853 for miscellaneous methods of making printed circuits, etc., involving more than coating.

174, Electricity: Conductors and Insulators, subclasses 250-268 for printed circuits.

438, Semiconductor Device Manufacturing: Process, appropriate subclasses for methods of making semiconductor-based integrated circuits.

439, Electrical Connectors, subclasses 55-85 for an electrical connector comprising or combined with a preformed panel circuit (e.g., a printed circuit board, etc.).

96.2 Protective coating (e.g., encapsulating, etc.):
Process under subclass 96.1 for coating a protective layer onto a substrate (e.g., encapsulating to surround entire substrate with a sealed encasement to act as a guard or barrier to passage of a contaminant, forming a scratch or puncture-resistant layer, etc.).

(1) Note. This subclass and the subclasses indented hereunder are only intended to provide for coating of a layer which is expressly stated to function as a protective layer for at least a portion of the substrate and is not intended to include mere application of a coating mask which is removed after coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

212-222, for a process of coating or encapsulating particles, flakes, or granules, in general.

96.3 Electromagnetic wave energy shield (e.g., electromagnetic wave shield (EWS), etc.):
Process under subclass 96.2 in which the protective layer inhibits transmission of electromagnetic wave energy (e.g., electromagnetic wave shield (EWS), etc.).

96.4 Conformal (e.g., thin film <.02 mm thick, etc.):
Process under subclass 96.2 in which the protective layer conforms to a shape, profile, or surface configuration similar to that of the substrate before coating (e.g., thin film <.02 mm thick, etc.).

(1) Note. Use of the term "conformal" to describe the protective layer is presumed to fit the definition of this subclass, even if no physical thickness is disclosed. The intent of this subclass is to provide for application of a protective coating thin enough to preserve a shape, profile, or surface configuration similar to that of the substrate before coating. This type of thin film coating frequently results in encapsulation to surround the entire substrate with a sealed encasement.

96.5 Mechanical shock, stress, or physical damage absorbing or shielding (e.g., scratch or puncture-resistant coating, etc.):
Process under subclass 96.2 in which the protective layer absorbs or shields mechanical shock, stress, or physical damage (e.g., scratch- or puncture-resistant coating, etc.).

96.6 Barrier to diffusion of specific fluid (e.g., silicone rubber, selectively permeable membrane which excludes water or moisture, etc.):
Process under subclass 96.2 in which the protective layer is a barrier to diffusion of a specific fluid (e.g., silicone rubber, selectively permeable membrane which excludes water or moisture, etc.).

96.7 Using mist or aerosol:
Process under subclass 96.1 in which coating material is a dispersion of fine liquid or solid particles (e.g., colloidal, etc.) in a gas or vapor continuous phase.

(1) Note. This subclass is intended to include spraying the substrate with a mist or aerosol.

SEE OR SEARCH THIS CLASS, SUBCLASS:

78, for a process of vapor deposition or spraying to produce an electron emissive or suppressive electrical product (excluding electrode for arc).

96.8, for a process of coating vapor or gas phase material (other than a mist or aerosol) onto a substrate to produce an integrated or printed circuit or circuit board.

110, for a process of spraying a transparent base to produce an electrical product other than an integrated or printed circuit or circuit board.

248.1-255.7, for coating of a substrate, in general, by vapor, gas, or smoke (other than mist sprayed through a gas).

421.1-427.7, for spray coating of a substrate, in general.

469, for utilizing an electrostatic charge, field, or force to deposit coating material consisting of charged particles in a nonuniform or patterned layer onto a substrate.

475-486, for utilizing an electrostatic charge, field, or force to apply solid particles or atomized liquid onto a substrate.

SEE OR SEARCH CLASS:

117, Single-Crystal, Oriented-Crystal, and Epitaxy Growth Processes; Non-Coating Apparatus Therefor, appropriate subclasses for a process for growing therein-defined single crystal of all types of materials, including inorganic or organic, and by all techniques, especially subclasses 84-109 for vapor or gas phase epitaxy.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1-8.1 for continuous gas or vapor phase colloid systems (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or processes of making or stabilizing such systems or agents, in general.

96.8 Vapor or gas deposition:
Process under subclass 96.1 in which coating material is a vapor or gas or is derived from a vapor or gas during coating.

(1) Note. This subclass is intended to include all gas or vapor phase deposition (e.g., by adsorption or condensation from a vapor, by reaction with a vapor for chemical vapor deposition (CVD), etc.) not provided for in above subclasses, even if the coating material is not disclosed as being derived from a vaporized liquid.

SEE OR SEARCH THIS CLASS, SUBCLASS:

69 and 70, for producing an electrical product by vapor deposition coating of a fluorescent or phosphorescent base.

78, for a process of vapor deposition or spraying to produce an electron emissive or suppressive electrical product (excluding electrode for arc).

96.7, for a process of using a mist or aerosol for coating a substrate to produce an integrated or printed circuit or circuit board.

107, 109, and 124, for a process of vapor deposition to produce an electrical product other than an integrated or printed circuit or circuit board.

248.1-255.7, for coating of a substrate, in general, by vapor, gas, or smoke (other than a mist sprayed through a gas).

497, 509, 582-590, and 593, for a vapor deposition process involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material.

SEE OR SEARCH CLASS:

117, Single-Crystal, Oriented-Crystal, and Epitaxy Growth Processes; Non-Coating Apparatus Therefor, appropriate subclasses for a process for growing therein-defined single crystal of all types of materials, including inorganic or organic, and by all techniques, especially subclasses 84-109 for vapor or gas phase epitaxy.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1-8.1 for continuous gas or vapor phase colloid systems (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or processes of making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the U.S. Patent Classification System for the specifically claimed art.

96.9 Front and back of substrate coated (excluding processes where all coating is by immersion):

Process under subclass 96.1 in which both front and back sides of a substrate (i.e., opposite sides) are coated (excluding processes where all coating is by immersion).

(1) Note. This subclass does not provide for merely immersing a substrate to coat both sides but does provide for such a step combined with additionally coating at least one side by another method (e.g., by rolling, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.1-97.6, for multilayer coating of a substrate to produce an integrated or printed circuit or circuit board, but not involving both front and back coating of a substrate (excluding processes where all coating is by immersion).

99.5, for coating of a substrate by immersion metal plating from solution (e.g., electroless plating, etc.) to produce an integrated or printed circuit or circuit board.

209-211, for a process of applying a coating to opposite sides of a sheet, web, or strip, in general (excluding processes where all coating is by immersion).

470, for applying superposed diverse or multilayer similar coatings on a substrate utilizing electrostatic charge, field, or force.

471, for applying coatings to opposite sides of a substrate utilizing electrostatic charge, field, or force (excluding processes where all coating is by immersion).

97.1 Multilayer:

Process under subclass 96.1 in which a product having plural distinguishable coated layers on a substrate is formed.

(1) Note. This subclass is not intended to include plural sequential overlying coating steps which are combined to result in only a single coated layer on the original substrate. To be proper for this subclass, the process must result in two or more separately distinguishable layers on at least one substrate separately distinguishable therefrom. However, not all coating steps need to be claimed as long as the net result is the same (e.g., process of coating a coated substrate to result in plural distinguishable layers on a substrate, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

96.9, for coating both front and back of a substrate (excluding processes where all coating is by immersion) to produce an integrated or printed circuit or circuit board.

97.8-98.1, for single-layer coating of a hole wall combined with substrate pretreatment to produce an integrated or printed circuit or circuit board.

98.6-99.1, for single-layer coating combined with substrate pretreatment but without coating a hole wall to produce an integrated or printed circuit or circuit board.

99.5, for single-layer immersion metal plating to produce an integrated or printed circuit or circuit board.

103, for applying superposed diverse coatings or coating a coated base to produce a resistor for current control (excludes heating element).

118, for applying superposed coatings or coating a coated base to produce a wire conductor electrical product.

402-419.8, for applying superposed coatings or coating a coated base, in general.

454, for spray coating utilizing flame or plasma heat (e.g., flame spraying, etc.) to apply superposed diverse or multilayer similar coatings in which at least one applied coating contains a metal oxide.

470, for applying superposed diverse or multilayer similar coatings on a substrate utilizing electrostatic charge, field, or force.

471, for applying coatings to opposite sides of a substrate utilizing electrostatic charge, field, or force (excluding processes where all coating is by immersion).

97.2 Coating hole wall:
Process under subclass 97.1 in which a coating is applied to a side of a hole in a substrate.

(1) Note. The coating applied may or may not fill the hole (e.g., for the purpose of providing a conductive path from one side of a circuit board to the other, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.7-98.3, for single-layer coating of a hole wall to produce an integrated or printed circuit or circuit board.

97.3 Nonuniform or patterned coating:
Process under subclass 97.1 in which a coating (1) is applied only to selected portions of a substrate, (2) is applied in such a manner as to produce a coating of nonuniform thickness, or (3) varies from area to area as to physical or chemical properties.

SEE OR SEARCH THIS CLASS, SUBCLASS:

63, for nonuniform or patterned coating to produce a superconductor electrical product.

75, for mosaic or nonuniform coating to produce a photoelectric electrical product.

98.4 and 98.5, for single-layer nonuniform or patterned coating to produce an integrated or printed circuit or circuit board.

102, for nonuniform coating to produce a resistor electrical product for current control (excludes heating element).

256-288, for nonuniform coating of a substrate, in general.

448, for nonuniform or patterned spray coating utilizing flame or plasma heat (e.g., flame spraying, etc.).

466-469, 504, 510 and 511, 526, 552, 555, and 556, for nonuniform or patterned coating involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material.

SEE OR SEARCH CLASS:

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for imagewise configuration coating or a process involving radiation imagery. See the class definition of this class, Lines With Other Classes and Within This Class, section D, Lines and Search Notes to Special Classes, References to Other Classes, See or Search Class, for a more detailed explanation of the class line.

97.4 With posttreatment of coating or coating material:
Process under subclass 97.3 which includes applying a coating material to a substrate and subsequently modifying a chemical or physical characteristic of the coating material or coating resulting therefrom.

(1) Note. Applying a second coating onto a first coated layer such that both remain distinguishable from each other and from the substrate is considered multilayer coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. Removal of excess coating material is properly included in this subclass and the subclass indented hereunder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

60, for coating of a substrate which includes posttreating with a solid treating member to produce a welding electrode.

96.9, for coating both front and back of a substrate (excluding processes where all coating is by immersion) to produce an integrated or printed circuit or circuit board.

97.6, for multilayer deposition of uniform coated layers on a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

98.2 and 98.3, for single-layer coating of a hole wall in a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

99.2-99.4, for other single-layer coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

99.5, for single-layer immersion metal plating to produce an integrated or printed circuit or circuit board.

331-398.5, for coating of a substrate, in general, with posttreatment of a coating or coating material.

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

97.5 Polymer deposited:

Process under subclass 97.4 in which a deposited coating or coating material contains a compound made up of repeating units (i.e., monomers) chemically bound together.

(1) Note. This subclass is intended to have a broad interpretation, including both inorganic (e.g., sulfur molecules, mica, etc.) and organic polymers (e.g., polyethylene, silicone rubber, etc.) derived from natural or manmade sources. Therefore, deposition of a coating which contains any amount of synthetic resin is proper in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

99.4, for single uniform coating of a substrate by depositing a polymer with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

340-342, for coating a substrate using a resin, resin precursor, rubber, or hardenable oil containing coating combined with posttreatment of a coating or coating material.

487-522, for coating a substrate combined with polymerization of the coating utilizing direct application of electrical, magnetic, wave, or particulate energy (i.e., including cross-linking, curing, and hardening of organics).

97.6 With posttreatment of coating or coating material:
Process under subclass 97.1 which includes applying a coating material to a substrate and subsequently modifying a chemical or physical characteristic of the coating material or coating resulting therefrom.

(1) Note. A process of applying a second coating onto a first coated layer such that both remain distinguishable from each other and from the substrate is considered multilayer coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. Removal of excess coating material is properly included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

60, for coating of a substrate which includes posttreating with a solid treating member to produce a welding electrode.

96.9, for coating both front and back of a substrate (excluding processes where all coating is by immersion) to produce an integrated or printed circuit or circuit board.

97.4 and 97.5, for multilayer deposition on a substrate in which at least one coated layer is nonuniform combined with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

98.2 and 98.3, for single-layer coating of a hole wall in a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

99.2-99.4, for other single-layer coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

99.5, for single-layer immersion metal plating to produce an integrated or printed circuit or circuit board.

331-398.5, for coating of a substrate, in general, with posttreatment of a coating or coating material.

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

97.7 Coating hole wall:
Process under subclass 96.1 in which a coating is applied to a side of a hole in a substrate.

(1) Note. The coating applied may or may not fill the hole (e.g., for the purpose of providing a conductive path from one side of a circuit board to the other, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.2, for multilayer coating of a substrate and coating a hole wall to produce an integrated or printed circuit or circuit board.

97.8 With pretreatment of substrate:
Process under subclass 97.7 in which a substrate is chemically or physically modified before applying a coating (e.g., catalyst treatment of a substrate before electroless coating, roughening, or addition of a surface active agent before coating, etc.).

(1) Note. Modifying of a coated layer on a substrate for the purpose of improving adhesion of a second distinguishable layer followed by application of the second distinguishable layer thereon is considered multilayer coating of a substrate. However, if a second distinguishable layer is not applied, modification of a single coated layer is considered posttreatment of the coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. This subclass and the subclasses indented hereunder provide for a process including a prior step to prepare a substrate (e.g., etching, washing, cleaning, drying, compressing, heating, etc.) before coating to improve adhesion of a subsequently applied coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.2, for multilayer coating of a substrate including hole wall coating to produce an integrated or printed circuit or circuit board.

98.2 and 98.3, for hole wall coating with posttreatment of a coated substrate to produce an integrated or printed circuit or circuit board.

98.5, for nonuniform coating with pretreatment of a substrate to produce an integrated or printed circuit or circuit board but without hole wall coating.

98.6-99.1, for coating with pretreatment of a substrate to produce an integrated or printed circuit or circuit board but without hole wall coating.

299-330, for coating, in general, with pretreatment of the base (i.e., substrate).

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

97.9 Immersion metal plating from solution (e.g., electroless plating, etc.):
Process under subclass 97.8 in which a metal coating is applied by immersing a substrate in a metal salt solution (e.g., electroless plating, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

99.5, for other immersion metal plating to produce an integrated or printed circuit or circuit board.

304-306, for metal coating (e.g., electroless deposition, etc.) of a substrate, in general, with pretreatment of the substrate (i.e., base) by preapplication of a reactant or reaction promoter or hardener (e.g., catalyst, etc.).

430.1-443.2, for other immersion or partial immersion coating, in general.

498 and 499, 512, 594, and 601, for coating involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material and utilizing immersion or partial immersion coating of the substrate.

98.1 Activating or catalyst pretreatment:
Process under subclass 97.9 which includes preparation of the substrate for coating by activating the substrate or applying a catalyst on the substrate.

(1) Note. This subclass is intended to include treatment of a catalyst previously applied to the substrate when the catalyst does not remain as a distinct layer (e.g., beneath another coated layer which is subsequently applied, etc.). If the catalyst remains as a distinct undercoating and is covered by an overcoating which remains distinguishable from the undercoating and the substrate, the combination would be considered multilayer coating. However, if further treatment of the catalyst layer to prepare it for overcoating did not include another coating step, the combination would be considered posttreatment of a catalyst layer coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.1-97.6, for multilayer coating of a substrate to produce an integrated or printed circuit or circuit board.

99.1, for other coating of a substrate with activating or catalyst pretreatment of the substrate to produce an integrated or printed circuit or circuit board.

99.2-99.4, for other coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

98.2 With posttreatment of coating or coating material:
Process under subclass 97.7 which includes applying a coating material to a substrate and subsequently modifying a chemical or physical characteristic of the coating material or coating resulting therefrom.

(1) Note. A process of applying a second coating onto a first coated layer such that both remain distinguishable from each other and from the substrate is considered multilayer coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. Removal of excess coating material is properly included in this subclass and the subclass indented hereunder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

60, for coating of a substrate which includes posttreating with a solid treating member to produce a welding electrode.

96.9, for coating both front and back of a substrate (excluding processes where all coating is by immersion) to produce an integrated or printed circuit or circuit board.

97.2, for multilayer coating of a substrate and coating a hole wall to produce an integrated or printed circuit or circuit board.

99.2-99.4, for other single uniform coating of a substrate with posttreatment of a coating or coating material but without hole wall coating to produce an integrated or printed circuit or circuit board.

99.5, for single-layer immersion metal plating to produce an integrated or printed circuit or circuit board.

331-398.5, for coating of a substrate, in general, with posttreatment of a coating or coating material.

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

98.3 Heating (e.g., curing, etc.):
Process under subclass 98.2 in which an applied coating is heated after deposition (e.g., curing, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

98.9, for uniform single-layer coating with heating pretreatment but without hole wall coating to produce an integrated or printed circuit or circuit board.

120, for coating with heat utilized to produce a wire conductor.

461, 522, 542-546, 557-559, and 587-594, for coating and heating involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material.

98.4 Nonuniform or patterned coating:
Process under subclass 96.1 in which a coating (1) is applied only to selected portions of a substrate, (2) is applied in such a manner as to produce a coating of nonuniform thickness, or (3) varies from area to area as to physical or chemical properties.

SEE OR SEARCH THIS CLASS, SUBCLASS:

63, for nonuniform coating to produce a superconductor electrical product.

75, for mosaic or nonuniform coating to produce a photoelectric electrical product.

102, for nonuniform coating to produce a resistor for current control (excludes heating element).

97.3-97.5, for multilayer coating of a substrate including at least one nonuniform or patterned layer to produce an integrated or printed circuit or circuit board.

256-288, for nonuniform coating of a substrate, in general.

448, for nonuniform or patterned spray coating utilizing flame or plasma heat (e.g., flame spraying, etc.).

466-469, 504, 510 and 511, 526, 552, and 555 and 556, for nonuniform or patterned coating involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for imagewise configuration coating or a process involving radiation imagery. See the class definition of this class, Lines With Other Classes and Within This Class, section D, Lines and Search Notes to Special Classes, References to Other Classes, See or Search Class, for a more detailed explanation of the class line.

98.5 With pretreatment of substrate:
Process under subclass 98.4 in which a substrate is chemically or physically modified before applying a coating (e.g., catalyst treatment of a substrate before electroless coating, roughening, or addition of a surface active agent before coating, etc.).

(1) Note. Modifying of a coated layer on a substrate for the purpose of improving adhesion of a second distinguishable layer followed by application of the second distinguishable layer thereon is considered multilayer coating of a substrate. However, if a second distinguishable layer is not applied, modification of a single coated layer is considered posttreatment of the coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. This subclass and the subclasses indented hereunder provide for a process including a prior step to prepare a substrate (e.g., etching, washing, cleaning, drying, compressing, heating, etc.) before coating to improve adhesion of a subsequently applied coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.3-97.5, for multilayer coating of a substrate including at least one nonuniform or patterned layer to produce an integrated or printed circuit or circuit board.

97.8-98.1, for hole wall coating with pretreatment of a substrate to produce an integrated or printed circuit or circuit board.

98.6-99.1, for uniform coating with pretreatment of a substrate to produce an integrated or printed circuit or circuit board.

299-330, for coating, in general, with pretreatment of the base (i.e., substrate).

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

98.6 With pretreatment of substrate:
Process under subclass 96.1 in which a substrate is chemically or physically modified before applying a coating (e.g., catalyst treatment of a substrate before electroless coating, roughening, or addition of a surface active agent before coating, etc.).

(1) Note. Modifying of a coated layer on a substrate for the purpose of improving adhesion of a second distinguishable layer followed by application of the second distinguishable layer thereon is considered multilayer coating of a substrate. However, if a second distinguishable layer is not applied, modification of a single coated layer is considered posttreatment of the coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. This subclass and the subclasses indented hereunder provide for a process including a prior step to prepare a substrate (e.g., etching, washing, cleaning, drying, compressing, heating, etc.) before coating to improve adhesion of a subsequently applied coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.8-98.1, for hole wall coating with pretreatment of a substrate to produce an integrated or printed circuit or circuit board.

98.5, for nonuniform or patterned coating of a substrate to produce an integrated or printed circuit or circuit board.

99.2-99.4, for coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

299-330, for coating, in general, with pretreatment of the base (i.e., substrate).

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

98.7 Swelling:

Process under subclass 98.6 in which a substrate is increased in volume or thickness (e.g., by impregnation with a swelling substance or material, etc.) before coating.

(1) Note. This subclass is intended to include uptake or absorption of a liquid solvent into a solid substrate, either to perfect etching or subsequent coating of the substrate. Swelling may be used to increase substrate surface area or to simply moisten it for better coating adhesion or easier etching of the substrate. Swelling may also be an unintended result of an impregnation step (e.g., swelling a dielectric substrate by impregnation with a conductive composition to decrease the electrical resistance of the substrate, etc.).

(2) Note. If the swelling impregnation is not uniformly distributed in the substrate such that a distinguishable layer is formed thereon, the combination with a subsequent coating such that two separately distinguishable layers are formed on the substrate will be considered multilayer coating of a substrate. Application of a single distinguishable layer on a substrate followed by modification (e.g., swelling, etc.) of the coated layer but without further coating will be considered coating with posttreatment thereof. If no indication is given to the contrary, swelling will be presumed to be a uniform impregnation pretreatment of the substrate before coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.1-97.6, for multilayer coating of a substrate to produce an integrated or printed circuit or circuit board.

98.8, for coating of a substrate with etching or roughening pretreatment of the substrate but without swelling to produce an integrated or printed circuit or circuit board.

99.2-99.4, for coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

307-309, for other coating with etching, swelling, or dissolving out part of the base as a pretreatment.

98.8 Etching or roughening:
Process under subclass 98.6 in which surface texture of a substrate is altered by selectively removing or reconfiguring material therefrom or thereon (e.g., creating surface topography to increase substrate surface area for perfecting adhesion of a subsequently applied coating, etc.).

(1) Note. This subclass is not intended for mere cleaning pretreatment of the substrate by removing extraneous material therefrom.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.1-97.6, for multilayer coating of a substrate to produce an integrated or printed circuit or circuit board.

98.7, for coating of a substrate with swelling pretreatment of the substrate to produce an integrated or printed circuit or circuit board.

99.2-99.4, for coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

307-309, for other coating with etching, swelling, or dissolving out part of the base as a pretreatment.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

98.9 Heating:
Process under subclass 98.6 in which a substrate is heated before coating (e.g., to perfect adhesion of a coating, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

98.3, for single-layer hole wall coating with heating posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

120, for coating with heat utilized to produce a wire conductor.

314-321, for other coating with heating or drying pretreatment.

461, 522, 542-546, 557-559, and 585-594, for coating and heating involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material.

99.1 Activating or catalyst pretreatment:
Process under subclass 98.6 which includes preparation of the substrate for coating by activating the substrate or applying a catalyst on the substrate.

(1) Note. This subclass is intended to include treatment of a catalyst previously applied to the substrate when the catalyst does not remain as a distinct layer (e.g., beneath another coated layer which is subsequently applied, etc.). If the catalyst remains as a distinct undercoating and is covered by an overcoating which remains distinguishable from the undercoating and the substrate, the combination would be considered multilayer coating. However, if further treatment of the catalyst layer to prepare it for overcoating did not include another coating step, the combination would be considered posttreatment of a catalyst layer coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.1-97.6, for multilayer coating of a substrate to produce an integrated or printed circuit or circuit board.

98.1, for hole wall coating by immersion metal plating from solution with activating or catalyst pretreatment to produce an integrated or printed circuit or circuit board.

99.2-99.4, for other coating with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

99.2 With posttreatment of coating or coating material:
Process under subclass 96.1 which includes applying a coating material to a substrate and subsequently modifying a chemical or physical characteristic of the coating material or coating resulting therefrom.

(1) Note. A process of applying a second coating onto a first coated layer such that both remain distinguishable from each other and from the substrate is considered multilayer coating. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

(2) Note. Removal of excess coating material is properly included in this subclass and the subclasses indented hereunder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

60, for coating of a substrate which includes posttreating with a solid treating member to produce a welding electrode.

96.9, for coating both front and back of a substrate (excluding processes where all coating is by immersion) to produce an integrated or printed circuit or circuit board.

97.4 and 97.5, for multilayer coating with at least one nonuniform or patterned layer and with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

97.6, for uniform multilayer coating of a substrate with posttreatment of a coating or coating material but without hole wall coating to produce an integrated or printed circuit or circuit board.

98.2 and 98.3, for single-layer hole wall coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

99.5, for single-layer immersion metal plating to produce an integrated or printed circuit or circuit board.

331-398.5, for coating of a substrate, in general, with posttreatment of a coating or coating material.

532-560, for coating involving direct application of electrical, magnetic, wave, or particulate energy with pretreatment of a substrate or posttreatment of a coated substrate.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, appropriate subclasses for etching combined with a coating process where the etching is a manufacturing step and is not only intended to improve adherence of an applied coating to a substrate.

99.3 Planarization:
Process under subclass 99.2 in which a coating or coating material previously applied is smoothed or flattened.

(1) Note. The intent of planarization is often to perfect a coating process by forming a more uniform layer of coating material on a substrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

98.2 and 98.3, for single-layer hole wall coating of a substrate with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

348 and 349, for other coating of a substrate with a mechanical posttreatment of a coating by a gas jet or blast.

355-371, for other coating of a substrate with posttreatment contacting of a coating by a solid treating member or material.

99.4 Polymer deposited:
Process under subclass 99.2 in which a deposited coating or coating material contains a compound made up of repeating units (i.e., monomers) chemically bound together.

(1) Note. This subclass is intended to have a broad interpretation, including both inorganic (e.g., sulfur molecules, mica, etc.) and organic polymers (e.g., polyethylene, silicone rubber, etc.) derived from natural or manmade sources. Therefore, deposition of a coating which contains any amount of synthetic resin is proper in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.5, for multilayer coating with at least one nonuniform or patterned layer, deposition of a polymer, and with posttreatment of a coating or coating material to produce an integrated or printed circuit or circuit board.

340-342, for coating a substrate using a resin, resin precursor, rubber, or hardenable oil containing coating combined with posttreatment of a coating or coating material.

487-522, for coating a substrate combined with polymerization of a coating utilizing direct application of electrical, magnetic, wave, or particulate energy (i.e., including cross-linking, curing, and hardening of organics).

99.5 Immersion metal plating from solution (e.g., electroless plating, etc.):
Process under subclass 96.1 in which a metal coating is applied by immersing a substrate in a metal salt solution (e.g., electroless plating, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

96.9, for coating of both front and back of a substrate (excluding processes where all coating is by immersion) to produce an integrated or printed circuit or circuit board.

97.9 and 98.1, for substrate hole wall coating by immersion metal plating from solution with pretreatment of the substrate to produce an integrated or printed circuit or circuit board.

304-306, for metal coating (e.g., electroless deposition, etc.) of a substrate, in general, with pretreatment of the substrate (i.e., base) by preapplication of a reactant or reaction promoter or hardener (e.g., catalyst, etc.).

430.1-443.2, for other immersion or partial immersion coating, in general.

498 and 499, 512, 594, and 601, for coating involving direct application of electrical, magnetic, wave, or particulate energy to a substrate, coated substrate, or coating material and utilizing immersion or partial immersion coating of the substrate.

421.1 SPRAYING:
Process under the class definition in which the coating material is projected by mechanical force toward the base (i.e., substrate).

SEE OR SEARCH THIS CLASS, SUBCLASS:

78, for vapor deposition or spraying to produce an electron emissive or suppressive electrical product (excluding electrode for arc).

96.7, for coating a substrate using a mist or aerosol to produce an integrated or printed circuit or circuit board.

110, for coating a transparent base by spraying to produce an electrical product.

168, for coating a transparent glass base by spraying to produce an optical element.

180-206, for applying (e.g., spraying, etc.) solid particles on a base.

233 and 236, for coating the interior of a hollow article by spraying.

240 and 241, for a coating process utilizing centrifugal force.

428.18 and 428.19, for a coating process utilizing a roller applicator in which coating material is supplied by force toward the roller applicator, but the coating material is not projected by mechanical force toward the base (i.e., not involving spraying of the base).

446-456, for coating a substrate by spray coating utilizing flame or plasma heat (e.g., flame spraying, etc.).

458-486, for coating a substrate utilizing an electrostatic charge, field, or force.

498 and 499, for coating a substrate by immersion, partial immersion, spraying, or spin coating utilizing high energy electromagnetic radiation or high energy particles and polymerization of a coating using direct application of electrical, magnetic, wave, or particulate energy.

SEE OR SEARCH CLASS:

239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 1-13 for a sprinkling, spraying, or diffusing process having an intended purpose other than coating.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1-8.1 for continuous gas or vapor phase colloid systems (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or processes of making or stabilizing such systems or agents, in general.

427.1 Using nozzle or projector supported or guided by base (e.g., work, workpiece, etc.) during coating:
Process under subclass 421.1 in which coating material is distributed toward the base (e.g., work, workpiece, etc.) by a nozzle or projector supported or guided by the base (e.g., work, workpiece, etc.) during coating.

(1) Note. This subclass is intended to include coating of a base by using a spray nozzle or projector mounted on a mobile support carriage which follows a contour of the base during coating to maintain spacing between the spray nozzle or projector and the base, but without requiring movement of the base. When coating a large or heavy contoured base, this method of guiding the spray nozzle or projector to match the contoured shape of the base (without moving the base) during coating would be expected to result in a more uniform coating on the base.

SEE OR SEARCH THIS CLASS, SUBCLASS:

424 and 425, for spray coating of a moving base.

427.3, for other spray coating of a base using a moving nozzle or projector.

427.2 With programmed control or using mechanized nozzle or projector (e.g., robotic sprayer, etc.):
Process under subclass 421.1 in which a nozzle or projector used to distribute coating material toward the base is operated (1) by one or more machine elements or (2) in a predetermined manner regulated by stored instructions or data (e.g., robotic sprayer, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

8-10, for coating a base with measuring, testing, or indicating some variable condition of the coating.

427.3 Moving nozzle or projector:
Process under subclass 421.1 in which a nozzle or projector used to distribute coating material toward the base is moved during coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

424 and 425, for spray coating a moving base.

427.1, for spray coating a base (e.g., work, workpiece, etc.) using a nozzle or projector supported or guided by the base during coating.

427.4 Polymer containing coating material:
Process under subclass 421.1 in which a deposited coating or coating material contains a compound made up of repeating units (i.e., monomers) chemically bound together.

(1) Note. This subclass is intended to have a broad interpretation, including both inorganic (e.g., sulfur molecules, mica, etc.) and organic polymers (e.g., polyethylene, silicone rubber, etc.) derived from natural or manmade sources. Therefore, deposition of a coating which contains any amount of synthetic resin is proper in this subclass and the subclasses indented hereunder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97.5 and 99.4, for coating a base with a polymer containing coating or coating material combined with posttreatment of the coating or coating material to produce an integrated or printed circuit or circuit board.

302 and 303, for coating a base using a resin, rubber, or hardenable oil containing coating combined with preapplication of a reactant or reaction promoter or hardener (e.g., catalyst, etc.) as pretreatment of the base.

340-342, for coating a base using a resin, resin precursor, rubber, or hardenable oil containing coating or coating material combined with posttreatment of the coating or coating material by applying a chemical agent thereto.

487-522, for coating a base combined with polymerization of a coating utilizing direct application of electrical, magnetic, wave, or particulate energy (i.e., including cross-linking, curing, and hardening of organics).

427.5 Metal base:
Process under subclass 427.4 in which the base is metal.

(1) Note. This subclass is only intended to provide for coating of an elemental metal base. A process of coating a base which merely contains a metal compound or a mixture of metal and nonmetal components is not proper in this subclass.

427.6 Organic compound containing base:
Process under subclass 427.4 in which the base contains an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

427.7, for spray coating a base containing an organic compound with a coating material which does not contain a polymer.

427.7 Organic compound containing base:
Process under subclass 421.1 in which the base contains an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

427.6, for spray coating a base containing an organic compound with a coating material which contains a polymer.

428.01 ROLLER APPLICATOR UTILIZED (E.G., PADDING, ETC.):
Process under the class definition in which coating material is applied to the base from the curved outer surface of a cylindrical applicator while the applicator is rotating about an internal axis.

(1) Note. Padding coating material onto a base is presumed to involve using a roller unless stated otherwise and is provided for in this subclass and the subclasses indented hereunder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

139, for coating pavement or the earth (e.g., roadmaking, etc.) by rolling an asphalt, bitumen, oil, or tar containing coating thereon.

194, for a process of applying and uniting solid particles or fibers on a base to form a continuous coating with nondiscernible particles which includes utilizing a roller (e.g., heated roller used to fuse or soften solid particles applied as coating, etc.).

211, for a process of coating a base by application of a coating to opposite sides of a sheet, web, or strip (excluding processes where all coating is by immersion) utilizing a roller applicator.

256-288, for nonuniform coating of a base.

359-366, for a coating process wherein a roller, drum, or cylinder is utilized as a solid treating member to contact and treat a coating or coating material after it has been applied to a base.

429, for other coating of a base utilizing a brush or absorbent applicator.

430.1-443.2, for an immersion coating process wherein a roller may be submerged in a coating bath in which the base is immersed.

428.02 Single roller applies plural layers of same coating material to base:
Process under subclass 428.01 in which two or more layers of the same coating material are applied to a base by a single roller.

(1) Note. The plural layers must be of the same coating material since coatings which are only similar (i.e., containing essentially the same ingredients, but in different proportions) are considered to be different coating materials. Such a process of applying a superposed diverse coating is provided for in above subclasses. See the See or Search This Class, Subclass notes below for references to selected other subclasses in this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

331-398.5, for a process of coating a base combined with posttreatment of a coating or coating material to change a chemical or physical characteristic thereof (excluding merely applying another layer thereto without changing a characteristic of a previous layer).

402-419.8, for a process of applying a superposed diverse coating or coating a coated base even if all layers of coating material are similar (i.e., containing the same components but differing only in proportion).

428.08, for a process of coating a base utilizing plural roller applicators in which a roller having a resilient (e.g., rubber, etc.) surface is used.

428.03 Roller composed of three or more layers used:
Process under subclass 428.01 which includes using a roller made up of three or more layers.

(1) Note. This subclass is intended to provide for a coating process in which a roller composed of three or more layers is used in the process. The roller having three or more layers does not have to be used to directly apply coating material to a base.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.05, for a process of coating a base utilizing a roller composed of fewer than three layers and having a fibrous or porous surface.

428.07-428.1, for a process of coating a base utilizing a roller composed of fewer than three layers and having a nonfibrous and nonporous resilient surface.

428.04 Tapered roller used:
Process under subclass 428.01 in which a roller having a tapered shape or profile is used.

(1) Note. This subclass is intended to provide for a coating process in which a tapered roller (i.e., having a diminishing diameter along the axis thereof) is used in the process. The tapered roller does not have to be used to directly apply coating material to a base. Also, the taper may be discontinuous or variable along the roller axis.

428.05 Fibrous or porous surface roller used:
Process under subclass 428.01 in which a roller having a fibrous or porous surface is used.

(1) Note. This subclass is intended to provide for a coating process in which a roller having a fibrous or porous surface (e.g., cloth, textile, fabric, flock, cellular foam, bristles, etc.) is used in the process. The fibrous or porous surface roller does not have to be used to directly apply coating material to a base.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.03, for a process of coating a base utilizing a roller composed of three or more layers.

428.07-428.1, for a process of coating a base utilizing a roller composed of fewer than three layers and having a nonfibrous and nonporous resilient (e.g., rubber, etc.) surface.

428.06 Grooved or textured surface roller used:
Process under subclass 428.01 in which a roller having a grooved or textured surface is used.

(1) Note. This subclass is intended to provide for a coating process which results in formation of a uniformly coated or impregnated base. See the See or Search This Class, Subclass note below for a reference to selected other subclasses in this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

256-288, for nonuniform coating of a base.

428.07 Resilient (e.g., rubber, etc.) surface roller used:
Process under subclass 428.01 in which a roller having a resilient (e.g., rubber, etc.) surface is used.

428.08 Plural roller applicators used:
Process under subclass 428.07 in which two or more roller applicators are used.

(1) Note. This subclass is intended to provide for a coating process which uses plural roller applicators in any configuration (e.g., to support and coat a moving cylindrical substrate, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

331-398.5, for a process of coating a base combined with posttreatment of a coating or coating material to change a chemical or physical characteristic thereof (excluding merely applying another layer thereto without changing a characteristic of a previous layer).

402-419.8, for a process of applying a superposed diverse coating or coating a coated base even if all layers of coating material are similar (i.e., containing the same components but differing only in proportion).

428.02, for a process of coating a base utilizing a single roller applicator to apply plural layers of the same coating material to a base.

428.09 Opposed, counter, or reverse surface movement at contact between roller applicator and base:
Process under subclass 428.07 in which the roller applicator moves in an opposed, counter, or reverse direction with respect to that of a base at the point of contact therebetween.

(1) Note. This subclass is intended to include slip or rubbing motion at the point of contact (i.e., nip) between surfaces of the roller applicator and the base during coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.11 and 428.12, for a coating process involving opposed, counter, or reverse movement at contact between the roller applicator and the base but without using a resilient (e.g., rubber, etc.) surface roller.

428.1 Including using roller backup support for base:
Process under subclass 428.07 which includes use of an additional roller as backup to support the base.

(1) Note. The roller applicator and additional backup roller are usually positioned adjacent to each other on either side of the base to hold the base in moving contact with both rollers while inhibiting unwanted displacement of the base by the roller applicator. Additional rollers may also be used during coating as long as the two required by this definition are positioned and used as described above.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.17, for a process of coating a base utilizing a roller applicator including using a roller backup support for the base and a doctor or roller for distributing coating material on the roller applicator but without using a resilient (e.g., rubber, etc.) surface roller.

428.21, for a process of coating a base utilizing a roller applicator including using a roller backup support for the base but without using a doctor or roller for distributing coating material on the roller applicator and without using a resilient (e.g., rubber, etc.) surface roller.

428.11 Opposed, counter, or reverse surface movement at contact between roller applicator and base:
Process under subclass 428.01 in which the roller applicator moves in an opposed, counter, or reverse direction with respect to that of a base at the point of contact therebetween.

(1) Note. This subclass is intended to include slip or rubbing motion at the point of contact (i.e., nip) between surfaces of the roller applicator and the base during coating.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.09, for a coating process involving opposed, counter, or reverse movement at contact between the roller applicator and the base and using a resilient (e.g., rubber, etc.) roller.

428.12 And using transfer roller to feed coating material to roller applicator:
Process under subclass 428.11 which includes use of an additional roller adjacent to the roller applicator which transfers coating material from a supply to the roller applicator.

(1) Note. This subclass is intended to include use of a battery of rollers to transfer coating material from a supply bath over plural transfer rollers onto the roller

applicator and then onto the base. This arrangement allows transfer of coating material from a supply bath up a vertical incline and onto the base at a location above the supply bath.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.15, for a process of coating a base utilizing a roller applicator supplied with coating material by a transfer roller and using a doctor or roller for distributing coating material on the roller applicator but without opposed, counter, or reverse surface movement at contact between the roller applicator and the base.

428.2, for a process of coating a base utilizing a roller applicator in direct contact with a coating material supply bath but without opposed, counter, or reverse surface movement at contact between the roller applicator and the base and without using a doctor or roller for distributing coating material on the roller applicator.

428.13 And roller end dams used:
Process under subclass 428.01 which includes use of barriers to inhibit flow of coating material from ends of a roller.

(1) Note. End dams help to result in a more uniform coating on the base by restraining bulking, dripping, or splattering of coating material at ends of a roller (e.g., to prevent excess deposition of coating on the base at points of contact with the edges of the roller applicator, etc.).

428.14 And doctor or roller used to distribute coating material on roller applicator:
Process under subclass 428.01 which includes use of a doctor or roller to spread coating material on the roller applicator.

(1) Note. This subclass and the subclasses indented hereunder are intended to provide for use of a solid member (e.g., doctor blade, doctor roller, etc.) to control distribution (e.g., thickness, uniformity, etc.) of coating material on the roller applicator prior to contact with the base. The intended result is usually to form a more uniform coating on the base.

428.15 And using transfer roller to feed coating material to roller applicator:
Process under subclass 428.14 which includes use of an additional roller adjacent to the roller applicator which transfers coating material from a supply to the roller applicator.

(1) Note. This subclass is intended to provide for use of a battery of rollers to transfer coating material from a supply bath over plural transfer rollers onto the roller applicator and then onto the base. This arrangement allows transfer of coating material from a supply bath up a vertical incline and onto the base at a location above the supply bath.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.12, for a process of coating a base utilizing a roller applicator supplied with coating material by a transfer roller with opposed, counter, or reverse surface movement at contact between the roller applicator and the base.

428.2, for a process of coating a base utilizing a roller applicator in direct contact with a coating material supply bath but without opposed, counter, or reverse surface

movement at contact between the roller applicator and the base and without using a doctor or roller for distributing coating material on the roller applicator.

428.16 And guiding base to follow surface curvature of roller applicator:
Process under subclass 428.14 which includes directing the base to follow the surface curvature of the roller applicator.

(1) Note. This subclass is intended to provide for use of sliding or rolling contact of two or more backup-style members to bend a flexible base to follow an obvious portion of curvature of the roller applicator (e.g., to increase the surface contact between the roller applicator and the base during coating, etc.).

428.17 Including using roller backup support for base:
Process under subclass 428.14 which includes use of an additional roller as backup to support the base.

(1) Note. The roller applicator and additional backup roller are usually positioned adjacent to each other on either side of the base to hold the base in moving contact with both rollers while inhibiting unwanted displacement of the base by the roller applicator. Additional rollers may also be used during coating as long as the two required by this definition are positioned and used as described above.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.1, for a process of coating a base utilizing a roller applicator and a roller backup support for the base, including using a resilient (e.g., rubber, etc.) surface roller with or without a doctor or roller for distributing coating material on the roller applicator.

428.21, for a process of coating a base utilizing a roller applicator and a roller backup support for the base but without using a doctor or roller for distributing coating material on the roller applicator and without including a resilient (e.g., rubber, etc.) surface roller.

428.18 Including using force to supply coating material to roller applicator:
Process under subclass 428.01 which includes use of force to supply the coating material to the roller applicator.

(1) Note. This subclass and the subclass indented hereunder are intended to include application of force to project or distribute the coating material toward the roller applicator prior to contact with the base (e.g., spraying the roller applicator without directly spraying the base, etc.). See the See or Search This Class, Subclass note shown below for a process of coating a base by forced projection of coating material toward the base (i.e., spraying).

SEE OR SEARCH THIS CLASS, SUBCLASS:

421.1-427.7, for a process of spraying a base in which coating material is projected by mechanical force toward the base.

428.19 Through nozzle or projector:
Process under subclass 428.18 in which the coating material is forced through a nozzle or projector.

SEE OR SEARCH THIS CLASS, SUBCLASS:

421.1-427.7, for a process of coating a base in which coating material is projected by mechanical force toward the base.

428.2 Direct contact of roller applicator with coating material supply bath used:
Process under subclass 428.01 in which the roller applicator is brought into direct contact with a coating material supply bath.

(1) Note. This subclass is intended to include partial immersion of the roller applicator in a coating material supply bath for direct contact supply of coating material to the roller applicator before coating the base by the roller applicator.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.12, for a process of coating a base utilizing a roller applicator combined with a transfer roller to feed coating material to the roller applicator and involving opposed, counter, or reverse surface movement at contact between the roller applicator and the base.

428.15, for a process of coating a base utilizing a roller applicator combined with a transfer roller to feed coating material to the roller applicator and using a doctor or roller to distribute coating material on the roller applicator.

428.21 Including using roller backup support for base:
Process under subclass 428.01 which includes use of an additional roller as backup to support the base.

(1) Note. The roller applicator and additional backup roller are usually positioned adjacent to each other on either side of the base to hold the base in moving contact with both rollers while inhibiting unwanted displacement of the base by the roller applicator. Additional rollers may also be used during coating as long as the two required by this definition are positioned and used as described above.

SEE OR SEARCH THIS CLASS, SUBCLASS:

428.1, for a process of coating a base utilizing a roller applicator, a roller backup support for the base, and including a resilient (e.g., rubber, etc.) surface roller with or without using a doctor or roller for distributing coating material on the roller applicator.

428.17, for a process of coating a base utilizing a roller applicator, a roller backup support for the base, and a doctor or roller for distributing coating material on the roller applicator but without including a resilient (e.g., rubber, etc.) surface roller.

FOR 105 Integrated circuit, printed circuit, or circuit board:

Foreign art collection including processes for coating producing an integrated circuit, printed circuit, or circuit board (i.e., circuits in which conductive wire has been replaced by a conductive coating or a combination of interconnected circuit elements produced by coating).

FOR 106 Coating hole walls:

Foreign art collection including processes wherein a coating is applied to the sides of a hole in a circuit board.

(1) Note. Such coatings are generally for the purpose of providing a conductive path from one side of a circuit board to the other.

FOR 107 Immersion metal plating from solution (e.g., electroless plating, etc.):

Foreign art collection including processes wherein a metal coating is applied by immersing the base in a metal salt solution.

FOR 108 Vapor deposition:

Foreign art collection including processes wherein the coating is produced on a base by adsorption or condensation of, or reaction with, a vapor or gas.

FOR 109 SPRAYING:

Foreign art collection including processes wherein the coating material is projected by mechanical force toward the base.

FOR 110 ROLLER APPLICATOR UTILIZED (E.G., PADDING, ETC.):

Foreign art collection including processes wherein coating material is applied to the base from the curved outer surface of a cylindrical applicator while said applicator is rotating about an internal axis.

(1) Note. Padding coating material onto a base is assumed to involve using a roller and is provided for in this subclass.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 428 - STOCK MATERIAL OR MISCELLANEOUS ARTICLES

Definitions Modified

Subclass 901: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a substrate to produce an integrated or printed circuit or circuit board.

Subclass 938: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclass 96.7 for using a mist or aerosol and subclass 96.8 for vapor or gas deposition in a coating process to produce an integrated or printed circuit or circuit board, and subclass 124 for metal coating by vapor deposition or using a vacuum to make a different kind of electrical product.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 438 - SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

Definitions Modified

Subclass 106: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a nonsemiconductive substrate to produce an integrated or printed circuit or circuit board (e.g., coating an insulative substrate to form a printed or thick film circuit board, etc.).

Subclass 384: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, especially subclasses 96.1-99.5 for a process of coating a nonsemiconductive substrate to produce an integrated or printed circuit or circuit board and subclasses 101-103 for a process of coating a nonsemiconductive substrate to produce a resistor for current control (excludes heating element).

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 439 - ELECTRICAL CONNECTORS

Definitions Modified

Subclass 55: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a substrate to produce an integrated or printed circuit or circuit board.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 516 - COLLOID SYSTEMS AND WETTING AGENTS; SUBCOMBINATIONS THEREOF; PROCESSES OF MAKING, STABILIZING, BREAKING, OR INHIBITING

Definitions Modified

Class Definition: Under SECTION IV - REFERENCES TO OTHER CLASSES, SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, for coating or impregnating processes in general and see the Class 427 definition for the general line between Class 427 and the composition classes. Areas known to have documents related to colloid systems or wetting agents include: subclasses 245 and 246 for forming a foraminous product having a microporous coating (particularly subclass 246 for such by coagulating or jelling the coating), subclasses 248.1-255.7 for coating by vapor, gas, or smoke, and subclasses 421.1-427.7 for coating by spraying.

Subclass 1: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 248.1-255.7 for coating by vapor, gas, or smoke; and subclasses 421.1-427.7 for coating by spraying.

D. CHANGES TO THE DEFINITIONS (Project No. C-5091)

CLASS 700 - DATA PROCESSING: GENERIC CONTROL SYSTEMS OR SPECIFIC APPLICATIONS

Definitions Modified

Subclass 121: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 427

Insert:

427, Coating Processes, subclasses 96.1-99.5 for a process of coating a substrate to produce an integrated or printed circuit or circuit board.