

# CPC COOPERATIVE PATENT CLASSIFICATION

## Y GENERAL TAGGING OF NEW TECHNOLOGICAL DEVELOPMENTS; GENERAL TAGGING OF CROSS-SECTIONAL TECHNOLOGIES SPANNING OVER SEVERAL SECTIONS OF THE IPC; TECHNICAL SUBJECTS COVERED BY FORMER USPC CROSS-REFERENCE ART COLLECTIONS [XRACs] AND DIGESTS

(NOTES omitted)

### Y10 TECHNICAL SUBJECTS COVERED BY FORMER USPC

### Y10S TECHNICAL SUBJECTS COVERED BY FORMER USPC CROSS-REFERENCE ART COLLECTIONS [XRACs] AND DIGESTS

#### NOTE

This subclass has been introduced in July 2012 in view of the CPC to accommodate for technical subjects formerly covered by USPC cross-reference art collections [XRACs] and digests

#### Apparel

- 2/00 Apparel**
- 2/01 . Ventilated garment
  - 2/02 . Reversible garment
  - 2/03 . Inflatable garment
  - 2/04 . Free swing garment
  - 2/05 . Waterproof garment with gutters
  - 2/08 . Rear-view mirror
  - 2/09 . Stocking-girdle relationship
  - 2/10 . Inflatable hat
  - 2/11 . Headband
  - 2/90 . Camouflaged
  - 2/901 . Antibacterial, antitoxin, or clean room
  - 2/902 . Antistatic
  - 2/903 . Fiberglass
  - 2/904 . Polytetrafluoroethylene
  - 2/905 . Electric
  - 2/906 . . Head covering or protector
  - 2/907 . Glove having three, four, or six finger pockets
  - 2/908 . Guard or protector having a hook-loop type fastener
  - 2/909 . . Head protector, e.g. helmet, goggles
  - 2/91 . . Hand or wrist protector
  - 2/911 . . Leg protector
  - 2/912 . Garment having a hook-loop type fastener
  - 2/913 . . Chest encircling, e.g. shirt, vest
  - 2/914 . . . Combined nether, e.g. union suit, bag type, overalls
  - 2/915 . . . having plural body encircling layers, e.g. coat
  - 2/916 . . Neck covering, e.g. necktie
  - 2/917 . . Hand or wrist covering
  - 2/918 . . Head covering
  - 2/919 . . Lower torso and leg encircling, e.g. skirts, trousers
  - 2/92 . Garment supporter or retainer having a hook-loop type fastener

#### Baths, closets, sinks, and spittoons

- 4/00 Baths, closets, sinks, and spittoons**
- 4/01 . Plural connected floats
  - 4/02 . Disappearing bowl

- 4/03 . Electric flushing
- 4/04 . Garbage grinder
- 4/05 . Urine guards
- 4/06 . Heated seats
- 4/07 . House plumbing fittings
- 4/08 . Rubber seats
- 4/09 . Methods
- 4/10 . Water additive or substitute
- 4/11 . Oil toilet
- 4/12 . Aerobic decomposing toilet
- 4/13 . Toilet having deformable trap
- 4/14 . Pipe strainers
- 4/15 . Prison bathrooms
- 4/16 . Deformable toilet traps
- 4/17 . Electrolytic toilets
- 4/18 . Bathroom fixture liners
- 4/19 . Liquid-solid separators
- 4/90 . Decontamination shower
- 4/901 . Bowl skirt or tank cover
- 4/902 . Toilet training
- 4/903 . Shower head with material dispensing
- 4/904 . Swim-in-place pool
- 4/905 . Squat bowl

#### Beds

- 5/00 Beds**
- 5/01 . with means to attach canopy or netting to unmodified bed or bedstead
  - 5/90 . Bathtub or bed
  - 5/901 . Mattress or pad with a convoluted, e.g. egg crate surface
  - 5/902 . Mattress with nonrectangular supporting surface
  - 5/904 . with sound emitting means
  - 5/905 . with light emitting means
  - 5/906 . with magnetic means
  - 5/907 . with decorative structure
  - 5/908 . . Mirror
  - 5/909 . Flowable viscous, e.g. gel material containing
  - 5/91 . with suction means
  - 5/911 . Bead containing
  - 5/913 . . with suction means

- 5/915 . with vibrating means
- 5/922 . with hook and loop type fastener
- 5/923 . . Bedclothing
- 5/924 . Cardboard containing
- 5/925 . Highly frictional material
- 5/926 . Low friction, e.g. slippery material
- 5/927 . Sofa beds with motor means
- 5/928 . with sprinkling or washing means
- 5/929 . Facilitating sexual relations
- 5/93 . for pregnant user
- 5/931 . with safe or hiding place
- 5/932 . Seals and sealing methods, for plastics
- 5/933 . Massaging bed
- 5/934 . . with movable transverse slats
- 5/935 . with adjustable firmness
- 5/936 . with adjustable firmness comprising springs
- 5/937 . Body support with lowerable support portion to provide access to a portion of the supported body
- 5/938 . with reflective material
- 5/939 . with microporous material
- 5/94 . with alarm means
- 5/941 . Blanket with forced air flow
- 5/942 . Longitudinally divided top surface with pivotable section
- 5/943 . with horizontally movable top surface
- 5/944 . with upstanding firm massaging projections
- 5/945 . Inflatable baby support with inflatable peripheral guard
- 5/946 . Crib bumper
- 5/947 . Wall mounted baby changer
- 5/948 . Body support with unique, specific filler material
- 5/949 . . Comprising animal derived product
- 5/95 . . . Comprising feathers or down
- 5/951 . . Comprising plant derived material
- 5/952 . . Comprising artificial fiber
- 5/953 . . Comprising structurally defined foam material or configuration
- 5/954 . Fireproof
- 8/15 . Pressurized gas treatment of textiles
- 8/16 . Pressurized and high temperature liquid treatment of textiles
- 8/17 . Glyoxal and polyaldehyde treatment of textiles
- 8/18 . Grafting textile fibers
- 8/19 . Molten metal
- 8/20 . -N-Cl compound
- 8/21 . Nylon
- 8/90 . Basic emulsifiers for dyeing
- 8/901 . . Quaternary ammonium salts
- 8/902 . Coacervation or two-phase dyeing system
- 8/903 . Triple mixture of anionic, cationic, and nonionic emulsifiers for dyeing
- 8/904 . Mixed anionic and nonionic emulsifiers for dyeing
- 8/905 . Mixed anionic and cationic emulsifiers for dyeing
- 8/906 . Mixed cationic and nonionic emulsifiers for dyeing
- 8/907 . Nonionic emulsifiers for dyeing
- 8/908 . Anionic emulsifiers for dyeing
- 8/909 . . Sulfonated or sulfated aliphatic hydrocarbons
- 8/91 . . Soap
- 8/911 . . . Sulfonated
- 8/912 . . Arylene sulfonate-formaldehyde condensate or alkyl aryl sulfonate
- 8/913 . Amphoteric emulsifiers for dyeing
- 8/914 . . Amino carboxylic acids
- 8/915 . . Amino sulfonic acids
- 8/916 . Natural fiber dyeing
- 8/917 . . Wool or silk
- 8/918 . . Cellulose textile
- 8/919 . . Paper
- 8/92 . Synthetic fiber dyeing
- 8/921 . . Cellulose ester or ether
- 8/922 . . Polyester fiber
- 8/923 . . . Halopolyester
- 8/924 . . Polyamide fiber
- 8/925 . . . Aromatic polyamide
- 8/926 . . Polyurethane fiber
- 8/927 . . Polyacrylonitrile fiber
- 8/928 . . Polyolefin fiber
- 8/929 . Carpet dyeing
- 8/93 . Pretreatment before dyeing
- 8/931 . . Washing or bleaching
- 8/932 . Specific manipulative continuous dyeing
- 8/933 . Thermosol dyeing, thermofixation or dry heat fixation or development
- 8/934 . High temperature and pressure dyeing
- 8/935 . Immunization as a resist in dyeing
- 8/936 . Solubility studies on dyes
- 8/937 . Li ion in dye bath
- 8/938 . Solvent dyes
- 8/939 . Naphtholactam dye

**Compound tools**

- 7/00 Compound tools**
- 7/90 . Resilient pivot
- 7/901 . Magnetic feature

**Bleaching and dyeing; fluid treatment and chemical modification of textiles and fibers**

- 8/00 Bleaching and dyeing; fluid treatment and chemical modification of textiles and fibers**
- 8/01 . Silicones
- 8/02 . Vinyl sulfones and precursors thereof
- 8/03 . Swelling and stretching
- 8/04 . Polyester fibers
- 8/05 . Organic titanium compounds on textiles
- 8/06 . Resin bleach
- 8/08 . Oxirane
- 8/09 . Polyolefin
- 8/10 . Polyvinyl halide esters or alcohol fiber modification
- 8/11 . Isocyanate and carbonate modification of fibers
- 8/12 . Wave energy treatment of textiles
- 8/13 . Cyanoethylation of fibers
- 8/14 . Dry mixtures of textile reagents

**Boot and shoe making**

- 12/00 Boot and shoe making**
- 12/01 . Lasting machines, fluid-actuated
- 12/02 . Lasting machines, dash pots
- 12/03 . Jigging

**Brushing, scrubbing, and general cleaning**

- 15/00 Brushing, scrubbing, and general cleaning**
- 15/01 . Rechargeable batter

- 15/02 . Car cleaning plants
- 15/03 . Matrix
- 15/04 . Ferrules
- 15/05 . Varied length bristle
- 15/06 . Varied composition bristle
- 15/07 . Driers
- 15/08 . Dust bags and separators
- 15/09 . Dust mop cleaners
- 15/10 . Handles, reels and switches
- 15/11 . Indicators
- 15/12 . Tape head cleaner
- 15/13 . Magnetic tape cleaner
- 15/14 . Phonograph record cleaner
- 15/15 . Moisture responsive

- 16/40 . Attaching means
- 16/41 . Coupling, e.g. handle, rod, shaft
- 16/42 . Miscellaneous methods
- 16/43 . Hinge mounting bracket
- 16/90 . Handle with angularly adjustable component
- 16/901 . Handle with manipulation thereof by human body part other than the hand
- 16/902 . Unitary handle composed of different cooperating materials
- 16/903 . Handle with diverse art enhancement, e.g. illuminator, heater
- 16/904 . Handle means having sanitary characteristic, e.g. to prevent transmission of germs
- 16/905 . . Toilet seat lifter
- 16/906 . Light handle cover

**Miscellaneous hardware, e.g. bushing, carpet fastener, caster, door closer, panel hanger, attachable or adjunct handle, hinge, window sash balance**

**16/00 Miscellaneous hardware, e.g. bushing, carpet fastener, caster, door closer, panel hanger, attachable or adjunct handle, hinge, window sash balance**

- 16/01 . Overhead door
- 16/02 . Paint guard, kick guard
- 16/03 . Holddown
- 16/04 . Mirror mount
- 16/05 . Push and pull bar
- 16/06 . Anti-rattle
- 16/07 . Door opening apparatus
- 16/08 . Weights
- 16/09 . Hydraulic actuated checks, closers
- 16/10 . Spring actuated checks and closers
- 16/11 . Fireplace screen
- 16/12 . Hand grips, preformed and semi-permanent
- 16/13 . Plastic hinge
- 16/14 . Magnetic hinge
- 16/15 . Battery handles
- 16/16 . Window brakes, counterbalances
- 16/17 . Checks and closers, holding means
- 16/18 . Composition handles
- 16/19 . Cast or molded handles
- 16/20 . Door brakes, e.g. track or guideway
- 16/21 . Checks, closers, check valve construction
- 16/22 . Expansion bolt
- 16/23 . Reversible
- 16/24 . Handle fastening means
- 16/25 . Handle fastening means, clamp band
- 16/26 . Headlight hinge
- 16/27 . Bearings
- 16/28 . Mattress handle
- 16/29 . Nesting hinge leaves
- 16/30 . Knob, control lever
- 16/31 . Pulley, e.g. door guides and hangers
- 16/32 . Door latch
- 16/33 . Rubber sleeve bearings and hinges
- 16/34 . Eccentric adjustments
- 16/35 . Skidways
- 16/36 . Spring
- 16/37 . Nut lock
- 16/38 . Lawn mower type tongue and cross arm
- 16/39 . Adjustment means

**Buckles, buttons, clasps**

**24/00 Buckles, buttons, clasps**

- 24/08 . Paper clips
- 24/09 . . Sheet material
- 24/10 . . Wire
- 24/11 . Adhesive
- 24/13 . Weighted clip or clamp
- 24/16 . Multiflex strap
- 24/17 . Multiflex axial
- 24/22 . Jaw structures, teeth
- 24/26 . Fluid pressure
- 24/28 . Co-planar flat clip
- 24/29 . Laundry device
- 24/30 . Separable-fastener or required component thereof
- 24/31 . . with third, detached member completing interlock
- 24/32 . . . And linking cavities in adjacent parallel panels
- 24/33 . . . Third member includes independently engaged hooks for linking spaced cavities
- 24/34 . . . . And movably connected, noninserted gate for closing access throat of hook
- 24/35 . . . Third member includes relatively movable, separate components
- 24/36 . . . . for parachute harness
- 24/37 . . . Third member consists of unitary elongated element
- 24/38 . . Each mating member having similarly shaped, sized, and operated interlocking face
- 24/39 . . . including elongated face having identical, parallel cross sections throughout its length
- 24/40 . . . including elongated face having varying, parallel cross sections throughout its length
- 24/41 . . . including complementary shaped and alternately useable interlocking faces
- 24/42 . . . Single piece hook-shaped member, e.g. mating garment hooks
- 24/43 . . including member having distinct formations and mating member selectively interlocking therewith
- 24/44 . . . Formations positioned along wall forming mating-member-guiding cavity
- 24/45 . . . . Formations member having movably attached or biased interlocking structure
- 24/46 . . . Formations member having movably attached or biased interlocking structure
- 24/47 . . . Selectively interlocking member having movably attached or biased interlocking component

- 24/48 . . . . And cavity for guiding movement of formations
- 24/49 . . . having mounting means allowing repositioning of member for facilitating interlock
- 24/50 . . including member having elongated, resilient, interlocking face with identical, parallel cross-sections throughout its length
- 24/51 . . including receiving member having cavity and mating member having insertable projection guided to interlock thereby
- 24/52 . . . having divergent interlock means distinct from cavity or projection of its member
- 24/53 . . . Projection or cavity rotates about axis of cavity access opening to interlock
- 24/54 . . . . having projection rotatably connected to its member
- 24/55 . . . . . And operator therefor
- 24/56 . . . . . And position locking-means therefor
- 24/57 . . . . . including notch or hump on projection axially biased by spring
- 24/58 . . . . . including radially biased element engaging against relatively rotating surface at connection
- 24/59 . . . . . And spring for axially biasing projection
- 24/60 . . . . Receiving member includes either movable connection between cavity components or variable configuration cavity
- 24/9001 . . . . . Shirt collar holders
- 24/901 . . . . . Penetrating-type paper fastener
- 24/902 . . . . . Tufting button fastener
- 24/903 . . . . . Armpit shield fastener
- 24/904 . . . . . Glove fastener
- 24/905 . . . . . Watch chain fastener, e.g. swivel hook
- 24/906 . . . . . Fastener for attaching band to watch or similar article, e.g. name plate
- 24/907 . . . . . Plastic hook
- 24/908 . . . . . Fishline supported attachment hook
- 24/909 . . . . . Winders for flexible material
- 24/91 . . . . . One-piece
- 29/012 . . . . . Method or apparatus with electroplating
- 29/013 . . . . . Method or apparatus with electric heating
- 29/014 . . . . . Method or apparatus with enameling
- 29/015 . . . . . forming article on end of long stock and then cutting off
- 29/016 . . . . . Method or apparatus with etching
- 29/017 . . . . . Method or apparatus with making flow lines; crystals
- 29/018 . . . . . Method or apparatus with forging
- 29/019 . . . . . Method or apparatus with grinding
- 29/02 . . . . . Method or apparatus for double blank
- 29/021 . . . . . Method or apparatus for heating
- 29/022 . . . . . Method or apparatus using indium
- 29/023 . . . . . Method or apparatus with knurling
- 29/024 . . . . . Method or apparatus with local heating
- 29/025 . . . . . Method or apparatus with particular material
- 29/026 . . . . . Method or apparatus with machining
- 29/027 . . . . . Method or apparatus using magnesium
- 29/028 . . . . . Magnetic recording digest
- 29/029 . . . . . Molding with other step
- 29/03 . . . . . Ornamenting with other step
- 29/031 . . . . . Pressing powder with other step
- 29/032 . . . . . Rolling with other step
- 29/033 . . . . . Scoring with other step
- 29/034 . . . . . Scaling with other step
- 29/035 . . . . . Shrink fitting with other step
- 29/036 . . . . . Shot blasting with other step
- 29/037 . . . . . Stamping with other step
- 29/038 . . . . . Spot welding with other step
- 29/039 . . . . . Spraying with other step
- 29/04 . . . . . Strips of repeated articles - cut up later
- 29/041 . . . . . Taper tube making
- 29/042 . . . . . Tension applied during working
- 29/043 . . . . . Upsetting and flanging tube end
- 29/044 . . . . . Vacuum
- 29/045 . . . . . Titanium
- 29/046 . . . . . Vibration
- 29/047 . . . . . Extruding with other step
- 29/048 . . . . . Welding with other step
- 29/049 . . . . . Work hardening with other step
- 29/05 . . . . . Cutting fluid application and debris control
- 29/051 . . . . . Power stop control for movable element
- 29/052 . . . . . Chip breaker
- 29/053 . . . . . Workpiece and debris separator
- 29/054 . . . . . Fluid control interrelated with machine tool mechanism
- 29/055 . . . . . with cutter drive
- 29/056 . . . . . with shield or hood movements
- 29/057 . . . . . with cutter feed
- 29/059 . . . . . Hood actuated by tool or work approach
- 29/06 . . . . . Progressive displacement of hood
- 29/061 . . . . . Plural-type debris removers
- 29/062 . . . . . Rubbing transfer of solid coating to rotating element
- 29/063 . . . . . Fluid conveyor or applicator
- 29/064 . . . . . Ambulatory cutter with fluent conduit
- 29/065 . . . . . Cutter contained supply reservoir
- 29/066 . . . . . Fluid flow to channeled cutter
- 29/067 . . . . . Rotating cutter
- 29/068 . . . . . Hollow spindle contains
- 29/069 . . . . . Fluid spreader contacts cutter
- 29/07 . . . . . Rotary or oscillating fluid applicator

**Textiles: cloth finishing**

- 26/00 Textiles: cloth finishing**
- 26/01 . . . Edge and/or uncurling; stiffening

**Undertaking**

- 27/00 Undertaking**
- 27/01 . . . Coffin lid fasteners

**Metal working**

- 29/00 Metal working**
- 29/001 . . . Method or apparatus involving adhesive
- 29/002 . . . Method or apparatus using aluminum
- 29/003 . . . Method or apparatus with bending
- 29/004 . . . Method or apparatus with brazing
- 29/005 . . . Method or apparatus with casting
- 29/006 . . . Method or apparatus with centrifugal casting
- 29/007 . . . Method or apparatus with cleaning
- 29/008 . . . Method or apparatus with composite casting
- 29/009 . . . Method or apparatus with cup formed and bottom removed
- 29/01 . . . Method or apparatus with die casting
- 29/011 . . . Method or apparatus with drawing

- 29/071 . Complete immersion of cutter
- 29/072 . Dip or splash supply
- 29/073 . Chain or belt conveyor
- 29/074 . Partial immersion of cutter
- 29/075 . Adjustable liquid level
- 29/076 . Movable liquid-carrying trough
- 29/077 . with separator or filter
- 29/078 . Air blast and/or vacuum conveyor
- 29/079 . Removable debris receptacle
- 29/081 . Gas as a conveyor
- 29/082 . Air current generated by cutter
- 29/083 . Fan coaxial with cutter
- 29/084 . Vacuum exhaust type
- 29/085 . with fluid control valve
- 29/086 . Hood encased cutter
- 29/087 . Multiple fluid paths
- 29/088 . by projecting, squirting or dripping
- 29/089 . Gas entrained liquid supply
- 29/09 . Elevated tank supply
- 29/091 . Plural discharge openings
- 29/092 . Fluid channel in cutter
- 29/093 . Plural discharge loci
- 29/094 . Debris remover, catcher, or deflector
- 29/095 . Magnetic or electrostatic
- 29/096 . Mechanical removal assistant
- 29/097 . Cutter engaging cleaner
- 29/098 . Rotating, reciprocating or oscillating cleaner
- 29/099 . Flexible conveyor
- 29/10 . Screw or cam conveyor
- 29/101 . Pan, bed, or table
- 29/102 . Debris chute
- 29/104 . Tool or work attached
- 29/105 . Assembly, magnetic, or indicia tool
- 29/90 . Methods and apparatus for assembly by electrostatic attraction
- 29/901 . Balancing method
- 29/902 . Filter making
- 29/903 . Firearm bolt making
- 29/904 . Laminated metal article making
- 29/905 . Making coil wound wall screen
- 29/906 . Nuclear device making

**Cutlery**

- 30/00** **Cutlery**
- 30/01 . Rechargeable battery operated
- 30/02 . Dry shavers
- 30/03 . Envelope openers
- 30/04 . Explosive
- 30/05 . Lawn edgers
- 30/06 . Resilient means
- 30/07 . Sprinkler and cutter
- 30/08 . Seam rippers

**Geometrical instruments**

- 33/00** **Geometrical instruments**
- 33/01 . Magnetic
- 33/02 . Air
- 33/03 . Photoelectric
- 33/04 . Interferometer
- 33/05 . Differential transformer
- 33/06 . Dial indicator shock absorber

- 33/07 . Ribbon and wires
- 33/08 . Eccentrics
- 33/09 . Rectangular proportioner
- 33/10 . Outlet box
- 33/11 . Materials
- 33/12 . Mechanical expedients
- 33/13 . Wire and strain gauges
- 33/14 . Spline and gear
- 33/15 . Piston position indicator
- 33/16 . Clips and rafters
- 33/17 . Piston ring and bearing race gauging
- 33/18 . Flush pin gauges
- 33/19 . Thermal expansive
- 33/20 . Tile
- 33/21 . with laser

**Drying and gas or vapor contact with solids**

- 34/00** **Drying and gas or vapor contact with solids**
- 34/01 . Absorbents and adsorbents

**Boots, shoes, and leggings**

- 36/00** **Boots, shoes, and leggings**
- 36/01 . Cement
- 36/02 . Plastic

**Excavating**

- 37/00** **Excavating**
- 37/901 . Bucket cleaners
- 37/902 . Hydraulic motors
- 37/903 . Scoop or scraper attachments
- 37/904 . Vibration means for excavating tool
- 37/905 . Nondredge excavating by fluid contact or explosion
- 37/906 . Visual aids and indicators for excavating tool
- 37/907 . Automatic leveling excavators
- 37/908 . Canal cleaners

**Textiles: ironing or smoothing**

- 38/00** **Textiles: ironing or smoothing**
- 38/01 . Paired leg boards
- 38/02 . Leg structure
- 38/03 . Leg latch

**Card, picture, or sign exhibiting**

- 40/00** **Card, picture, or sign exhibiting**
- 40/90 . Mirror that has changing effect
- 40/901 . Tv/radio program indicator
- 40/902 . Circuit control, e.g. flashing light
- 40/903 . Reflective triangle for highway use
- 40/904 . Map or chart holder
- 40/905 . Pen and pencil
- 40/906 . Sound
- 40/907 . Out-to-lunch
- 40/908 . Animal or fur skin identification
- 40/909 . Storage battery identification
- 40/91 . Automobile license identification
- 40/911 . Automobile body identification
- 40/912 . Automobile motor identification
- 40/913 . Tool identification
- 40/914 . Nuclear fuel element identification

- 40/915 . Golf club identification

### Firearms

- 42/00 Firearms**  
42/01 . Release trigger

### Fishing, trapping, and vermin destroying

- 43/00 Fishing, trapping, and vermin destroying**  
43/90 . Liquid insecticide sprayer

### Fuel and related compositions

- 44/00 Fuel and related compositions**  
44/901 . Fuel combined with material to be heated  
44/902 . . Flameless or glowless, e.g. hair curler  
44/903 . Method including measuring, testing or automatic control  
44/904 . Method involving electric or wave energy  
44/905 . Method involving added catalyst

### Plant husbandry

- 47/00 Plant husbandry**  
47/01 . Methods of plant-breeding and including chromosome multiplication  
47/03 . Propagation of plant by cuttings  
47/06 . Plant growth regulation by control of light thereon  
47/08 . Treatment of plants and seeds with radioactive energy  
47/09 . Physical and chemical treatment of seeds for planting  
47/10 . Physical and chemical treatment of agricultural soils  
47/11 . The application of protective coatings to plants  
47/12 . Sonic or ultrasonic treatment  
47/901 . Plant container with flats, filling, planting, or conveying  
47/902 . including a recycled component, e.g. tires  
47/903 . Operator means for cold frame or window  
47/904 . Openwork container for a growing medium, e.g. wire basket  
47/905 . To remediate contaminated soil

### Gas: heating and illuminating

- 48/00 Gas: heating and illuminating**  
48/01 . Recirculation of gases produced to lower part of fuel bed  
48/02 . Slagging producer  
48/03 . High pressure  
48/04 . Powdered fuel injection  
48/05 . Diffusion membrane for gas reaction or separation  
48/06 . Underground gasification of coal  
48/07 . Slurry  
48/08 . Internal combustion engine for gas making  
48/09 . Solar gasification  
48/10 . Computer resisted control

### Movable or removable closures

- 49/00 Movable or removable closures**  
49/01 . Thermal breaks for frames  
49/02 . Plastic frame components

### Static structures, e.g. buildings

- 52/00 Static structures, e.g. buildings**  
52/01 . Hand tools for assembling building components  
52/02 . Masonry lattice or openwork  
52/03 . Trailer or mobile home skirt  
52/04 . Magnetic connecting means for building components  
52/05 . Designed for thermal distortion  
52/06 . Toothed connecting means  
52/07 . Synthetic building materials, reinforcements and equivalents  
52/08 . Imitation beams  
52/09 . Structure including reclaimed component, e.g. trash  
52/10 . Polyhedron  
52/11 . Mobile-structure stabilizing anchor  
52/12 . Temporary protective expedient  
52/13 . Hook and loop type fastener  
52/14 . Shelter shaped to article configuration  
52/15 . Seal for corrugated sheets  
52/16 . Roofing with pressure sensitive adhesive, e.g. shingle  
52/17 . with transparent walls or roof, e.g. sunroom  
52/90 . Hazardous material permeation prevention, e.g. radon

### Package making

- 53/00 Package making**  
53/01 . Bacon and franks packaging  
53/02 . High frequency electric sealing  
53/03 . Sealing electron tubes  
53/90 . Capsules

### Gas separation

- 55/00 Gas separation**  
55/01 . Graduated electrostatic field  
55/02 . Vacuum cleaner bags  
55/03 . Vacuum cleaner  
55/05 . Methods of making filter  
55/06 . Magnetic couplings  
55/07 . Black liquor treatment  
55/08 . Built-in vacuum cleaners  
55/09 . Radioactive filters  
55/10 . Residue burned  
55/12 . Pocket type filter  
55/13 . Polyurethane filters  
55/14 . Inertia separator  
55/15 . Cold traps  
55/17 . Compressed air water removal  
55/18 . Work bench  
55/19 . Crankcase ventilation  
55/20 . Spark arrester  
55/21 . Silencer cleaner  
55/23 . Steam separators  
55/24 . Viscous coated filter  
55/25 . Agglomerators  
55/26 . Bag coupling  
55/27 . Cleaners, liquid  
55/28 . Carburetor attached  
55/29 . Air curtains  
55/30 . Exhaust treatment  
55/31 . Filter frame

- 55/32 . Gaseous fluid conveying
- 55/33 . Gas mask canister
- 55/34 . Indicator and controllers
- 55/35 . Respirators and register filters
- 55/36 . Kitchen hoods
- 55/37 . Louvers
- 55/38 . Tubular collector electrode
- 55/39 . Electrets separator
- 55/42 . Foam filter materials
- 55/43 . Knitted filter mediums
- 55/44 . Pile and pile-type filter mediums
- 55/45 . Woven filter mediums
- 55/46 . Spray booths

**Harvesters**

- 56/00 Harvesters**
- 56/01 . Crusher
- 56/02 . Methods
- 56/03 . Ground effect
- 56/04 . Friction drive
- 56/05 . with material distribution
- 56/06 . Clutches and gearing
- 56/07 . Remote control implement
- 56/08 . Air gathering
- 56/09 . Detachable implement
- 56/10 . Uneven terrain compensation
- 56/11 . Hydraulic
- 56/12 . Brush
- 56/13 . Bermuda grass cutters
- 56/14 . Hitch
- 56/15 . Condition responsive
- 56/16 . Movable cutter without stationary cutter bar
- 56/17 . Cutter details
- 56/18 . Handles
- 56/19 . Beaters and wipers
- 56/20 . Blades, reels and guards
- 56/21 . Raking and windrowing
- 56/22 . Underslung yieldable rotary mower
- 56/23 . Dehydrating
- 56/24 . Harvester guards

**Textiles: spinning, twisting, and twining**

- 57/00 Textiles: spinning, twisting, and twining**
- 57/901 . Antistatic
- 57/902 . Reinforcing or tire cords
- 57/903 . Sewing threads
- 57/904 . Flame retardant
- 57/905 . Bicomponent material
- 57/906 . Line appliances
- 57/907 . Foamed and/or fibrillated
- 57/908 . Jet interlaced or intermingled

**Chain, staple, and horseshoe making**

- 59/00 Chain, staple, and horseshoe making**
- 59/90 . Plastic
- 59/901 . Cross pin

**Power plants**

- 60/00 Power plants**

- 60/90 . Excess air to internal combustion engine to assist exhaust treatment
- 60/901 . Exhaust treatment special to rotary internal combustion engines
- 60/902 . Rotary reactor, separator or treater of exhaust of an internal combustion engine
- 60/903 . Closures operators
- 60/904 . Propeller or air plane system
- 60/905 . Winding and reeling
- 60/906 . Engine speed responsive throttle control system
- 60/907 . Working member positioned against counterforce by constantly applied motive fluid
- 60/908 . Washing machine system
- 60/909 . Reaction motor or component composed of specific material
- 60/91 . Free piston
- 60/911 . Fluid motor system incorporating electrical system
- 60/912 . Cooling means
- 60/913 . Collection of reggio patents
- 60/914 . Explosive
- 60/915 . Collection of goddard patents
- 60/916 . Unitary construction
- 60/917 . Solid fuel ramjet using pulverized fuel

**Refrigeration**

- 62/00 Refrigeration**
- 62/01 . Radiant cooling
- 62/02 . Refrigerant pumps
- 62/05 . Aircraft cooling
- 62/07 . Vacuum plates
- 62/10 . Tool cooling
- 62/11 . Hydrator receptacles
- 62/13 . Insulation
- 62/16 . Roof and ceiling located coolers
- 62/17 . Condenser pressure control
- 62/19 . Ionic thompson effect
- 62/20 . Materials used to prevent corrosion in refrigeration system
- 62/21 . Evaporators where refrigerant covers heat exchange coil
- 62/22 . Free cooling
- 62/23 . Explosive digest
- 62/90 . Triple column
- 62/901 . Single column
- 62/902 . Apparatus
- 62/903 . . Heat exchange structure
- 62/904 . . . Coiled heat exchanger
- 62/905 . . Column
- 62/906 . . . Packing
- 62/907 . . . Insulation
- 62/908 . . Filter or absorber
- 62/909 . . Regeneration
- 62/91 . . Expander
- 62/911 . . Portable
- 62/912 . External refrigeration system
- 62/913 . . Liquefied gas
- 62/914 . Magnetic or electric field
- 62/915 . Combustion
- 62/916 . Explosion reduction
- 62/917 . Mercury
- 62/918 . Halocarbon
- 62/919 . Isotope

- 62/92 . Carbon monoxide
- 62/921 . Chlorine
- 62/922 . Sulfur
- 62/923 . Inert gas
- 62/924 . . Argon
- 62/925 . . Xenon or krypton
- 62/926 . Gasoline
- 62/927 . Natural gas from nitrogen
- 62/928 . Recovery of carbon dioxide
- 62/929 . . From natural gas
- 62/93 . . From nitrogen
- 62/931 . Recovery of hydrogen
- 62/932 . . From natural gas
- 62/933 . . From helium
- 62/934 . . From nitrogen
- 62/939 . Partial feed stream expansion, air
- 62/94 . . High pressure column

**Jewelry**

- 63/00 Jewelry**
- 63/01 . Adhesive jewelry
- 63/02 . Perfumed jewelry
- 63/03 . Plastic jewelry
- 63/90 . Magnetic connector

**Glass manufacturing**

- 65/00 Glass manufacturing**
- 65/01 . Lens envelope
- 65/03 . Cracked glass
- 65/04 . Electric heat
- 65/05 . Foil glass
- 65/06 . Glass electrode
- 65/08 . Quartz
- 65/09 . Tube
- 65/10 . Stemware
- 65/11 . Encapsulating
- 65/12 . Reed switch
- 65/13 . Computer control
- 65/15 . Nonoxygen containing chalogenides
- 65/16 . . Optical filament or fiber treatment with fluorine or incorporating fluorine in final product
- 65/90 . Drying, dehydration, minimizing oh groups
- 65/901 . Liquid phase reaction process

**Textiles: fluid treating apparatus**

- 68/00 Textiles: fluid treating apparatus**
- 68/90 . Foam treatment
- 68/901 . High frequency treatment
- 68/902 . Devices for storage and reuse of soap suds
- 68/903 . Perforated drum and continuous textile feed and discharge

**Locks**

- 70/00 Locks**
- 70/01 . Tumbler registerable with aperture
- 70/02 . Tumbler, lateral locking
- 70/05 . Magazine cylinder and pin tumblers
- 70/06 . Bolt dogged in retracted position
- 70/07 . Sleeve with embeddable tooth
- 70/08 . Closure-operator lock

- 70/09 . Pawl and ratchet lock
- 70/10 . Thermally controlled
- 70/11 . Garage door lock
- 70/12 . Extension link with detachable link fastener
- 70/13 . Socket-key lock
- 70/14 . insertable permanent key
- 70/15 . Plug with tumbler retainer
- 70/16 . Jail door lock
- 70/17 . Check-key lock
- 70/18 . Revolving door lock
- 70/19 . Showcase lock
- 70/20 . Push to project and lock bolt, key-released
- 70/21 . Permutation, rotatable-segemental tumbler bolts
- 70/22 . Segmental tumbler
- 70/23 . Segmental slot in tumbler cooperating with a pin
- 70/24 . Curved slot in tumbler
- 70/25 . Peripheral pin on tumbler
- 70/26 . Locking lug on bolt
- 70/27 . Manually locked, key-released
- 70/28 . Fence tumbler
- 70/29 . Wedge tumbler
- 70/30 . Switch lock
- 70/31 . Handle assembly, lock-controlled
- 70/32 . Positioners
- 70/33 . Starting point
- 70/34 . Cover fasteners
- 70/35 . Double-ended lock cylinder
- 70/36 . Spring-returned lock cylinder
- 70/37 . Cylinder lock, multiple tumbler arrangements
- 70/38 . Cylinder lock, lateral keyhole
- 70/39 . Cylinder and knob connection
- 70/40 . Cylinder lock utilizing sheet metal
- 70/41 . Coin-controlled
- 70/42 . Lost motion devices
- 70/43 . Lock protectors
- 70/44 . Combination changers
- 70/45 . Time lock and auxiliary lock operable on failure of time lock
- 70/46 . Conducting key
- 70/47 . Laterally movable key
- 70/48 . Fluid pressure lock
- 70/49 . with alarm
- 70/50 . Time lock, fluid-controlled
- 70/51 . Light sensitive control means
- 70/52 . Over center spring
- 70/53 . Adjustable spring
- 70/54 . Double-ended spring
- 70/55 . Unitary multiple springs
- 70/56 . Lock protecting cover
- 70/57 . Screw guard
- 70/58 . Handle guard
- 70/59 . Lock with indicator
- 70/60 . Opposed cylinders
- 70/61 . Die cast cylinder
- 70/62 . Cylinder plug stop
- 70/63 . Multiple locks
- 70/64 . Door spanning bolt
- 70/65 . Double door lock
- 70/66 . Double-ended bolt
- 70/67 . Handle-contained latch operator
- 70/68 . Oblique bolt

- 70/69 . Floating bolt
- 70/70 . Geneva stop
- 70/71 . Combined permutation and key lock
- 70/72 . Telephone lock
- 70/73 . Thumb latch operator
- 70/74 . Spring tumbler
- 70/75 . Adjustable tumbler
- 70/76 . Manually operated tumbler
- 70/77 . Jaw tumblers
- 70/78 . Sliding and oscillating bolt
- 70/79 . Sliding and rotary bolt
- 70/80 . Sliding bolt with sliding operating means
- 70/81 . Camouflaging means

**Chemistry: fertilizers**

- 71/00 Chemistry: fertilizers**
- 71/02 . Chelating agent
  - 71/03 . Defluorination
  - 71/04 . Anti-corrosion
  - 71/90 . Foams
  - 71/901 . Refuse conditioning
  - 71/902 . Nitrification inhibition
  - 71/903 . Soil conditioner
  - 71/904 . Carrier

**Metal deforming**

- 72/00 Metal deforming**
- 72/70 . Deforming specified alloys or uncommon metal or bimetallic work
  - 72/701 . Preventing distortion
  - 72/702 . Overbending to compensate for springback
  - 72/703 . Knurling
  - 72/704 . Camber-adjusting tool
  - 72/705 . Vehicle body or frame straightener
  - 72/706 . Explosive
  - 72/707 . Magnetism
  - 72/708 . Reverse drawing
  - 72/709 . Superplastic material
  - 72/71 . Vibrating
  - 72/711 . Hydrostatic extrusion
  - 72/712 . Electrical terminal crimper
  - 72/713 . Method of making vehicle power transmitting shaft
  - 72/714 . Method of making universal joint shell
  - 72/715 . Method of making can bodies

**Measuring and testing**

- 73/00 Measuring and testing**
- 73/01 . Vibration
  - 73/02 . Magnetostrictive
  - 73/03 . Hall effect
  - 73/04 . Piezoelectric
  - 73/05 . Liquid levels with magnetic transmission
  - 73/08 . Fluid circuits
  - 73/09 . Molten metal samplers
  - 73/10 . Instrument mechanisms with acceleration compensation
  - 73/11 . Photoelectric cell
  - 73/90 . Automatic gain control
  - 73/901 . Digital readout

**Machine element or mechanism**

- 74/00 Machine element or mechanism**
- 74/01 . Hydraulic control systems automatic automotive controls
  - 74/02 . Miscellaneous control systems, e.g. ship propulsion, machine tools
  - 74/03 . Movable van or blade torque converters
  - 74/04 . Magnetic gearing
  - 74/05 . Gas turbine with gearing
  - 74/06 . Transistor-electronic gearing controls
  - 74/07 . Indicators-sensors and meters
  - 74/08 . Marine control-ship transmission control means
  - 74/09 . Perpetual motion gimmicks
  - 74/10 . Polymer digest - plastic gears
  - 74/11 . Creeper speed
  - 74/12 . Novikov gears
  - 74/90 . Particular shift pattern

**Specialized metallurgical processes, compositions for use therein, consolidated metal powder compositions, and loose metal particulate mixtures**

- 75/00 Specialized metallurgical processes, compositions for use therein, consolidated metal powder compositions, and loose metal particulate mixtures**
- 75/95 . Consolidated metal powder compositions of >95% theoretical density, e.g. wrought
  - 75/951 . . Oxide containing, e.g. dispersion strengthened
  - 75/952 . Producing fibers, filaments, or whiskers
  - 75/953 . Producing spheres
  - 75/954 . Producing flakes or crystals
  - 75/955 . Producing dental product
  - 75/956 . Producing particles containing a dispersed phase
  - 75/957 . Continuous refining of molten iron
  - 75/958 . with concurrent production of iron and other desired nonmetallic product, e.g. energy, fertilizer
  - 75/959 . Thermit-type reaction of solid materials only to yield molten metal
  - 75/96 . in zero gravity environment
  - 75/961 . Treating flue dust to obtain metal other than by consolidation
  - 75/962 . Treating or using mill scale

**Metal tools and implements, making**

- 76/00 Metal tools and implements, making**
- 76/01 . Bowling pin
  - 76/02 . Case hardening
  - 76/03 . Casting
  - 76/04 . Chromium
  - 76/05 . Electric welding
  - 76/06 . Laminated
  - 76/07 . Plastics
  - 76/08 . Razor blade manufacturing
  - 76/09 . Razor blade sharpeners
  - 76/10 . Soldering and cooling
  - 76/11 . Tungsten and tungsten carbide
  - 76/12 . Diamond tools

**Tools**

- 81/00 Tools**
- 81/01 . Tool-support adjuncts
  - 81/02 . Spiral drive for wrenches

- 81/03 . Wrenches, thread-adjustment lock
- 81/04 . Double adjustments, sliding jaw
- 81/05 . Wrench scales and indicia
- 81/06 . Spring means biasing wrench jaws
- 81/07 . Bicycle spoke or nipple wrench
- 81/08 . Crowfoot-type wrenches
- 81/09 . Pivoted jaw latch means
- 81/10 . Iris-type wrench head
- 81/11 . Adapters for different-sized fasteners
- 81/12 . Power hammer
- 81/90 . Wrench or screwdriver constructed from specific material
- 81/901 . Wrench or screwdriver adapted to turn eye screw

**Turning**

- 82/00** **Turning**
- 82/90 . Lathe thermal regulation
- 82/901 . Chip removal
- 82/902 . Oil grooving device
- 82/903 . Balancing and centering
- 82/904 . Vibrating method or tool
- 82/905 . Transmission accessory or control

**Cutting**

- 83/00** **Cutting**
- 83/01 . Safety devices
- 83/02 . I-shaped beam cutter
- 83/03 . Inflatable tube
- 83/901 . Apparel collar making
- 83/902 . Attachments for other types of machine
- 83/903 . Battery grid trimming
- 83/904 . Book index cutting
- 83/905 . Buttonhole making
- 83/906 . Chip making
- 83/907 . Coiled wire cutting
- 83/908 . Comb, rake, or other toothed article making
- 83/909 . Cutting strand extending from or lying on strand or package support
- 83/91 . Embroidery trimming or cutting
- 83/911 . Envelope blank forming
- 83/912 . Envelope openers
- 83/913 . Filament to staple fiber cutting
- 83/914 . Flash trimming
- 83/915 . Fur cutting
- 83/9153 . Ice cutting machines
- 83/9155 . Microtome
- 83/916 . Nibbling
- 83/917 . Notching
- 83/918 . Pinking
- 83/919 . Sample taking
- 83/92 . Shingle making
- 83/921 . Slide fastener cutting
- 83/922 . Tacky web cutting
- 83/923 . Waste product cutting
- 83/924 . Work wrapped or coated around a core, not part of the machine
- 83/927 . Printer's rule cutting
- 83/928 . Vehicle-mounted tool
- 83/929 . Particular nature of work or product
- 83/9291 . . Printed circuit board
- 83/9292 . . Electrical component lead trimming

- 83/93 . . Radioactive
- 83/931 . . Tobacco
- 83/932 . . Edible
- 83/933 . . Book, being destroyed, e.g. cover being cut away
- 83/934 . . Book, being made, e.g. trimming a signature
- 83/935 . . Endless band
- 83/936 . . Cloth or leather
- 83/937 . . . From continuous or wound supply
- 83/938 . . . Moving cloth or leather
- 83/939 . . . with work support
- 83/94 . . . . Cutter moves along bar, bar moves perpendicularly
- 83/941 . . . . . Work support comprising penetratable bed
- 83/942 . . Contact pin of electrical component
- 83/943 . . Pallet
- 83/944 . . Syringe needle
- 83/945 . . Separating connected articles
- 83/946 . . Container
- 83/947 . . insulation about wire
- 83/948 . . having "memory", e.g. photographic or magnetic film
- 83/949 . . Continuous or wound supply
- 83/95 . . . . Strandlike
- 83/951 . . Rubber tire
- 83/952 . . Moving work
- 83/953 . . with work support
- 83/954 . Knife changing
- 83/955 . Cutter edge shiftable to present different portion of edge
- 83/956 . Ultrasonic

**Music**

- 84/00** **Music**
- 84/01 . Plural speakers
- 84/02 . Preference networks
- 84/03 . Foldable; detachable; collapsible
- 84/04 . Chorus; ensemble; celeste
- 84/05 . Chiff
- 84/06 . Cathode-ray tube
- 84/07 . Electric key switch structure
- 84/08 . Keyed oscillators
- 84/09 . Filtering
- 84/10 . Feedback
- 84/11 . Frequency dividers
- 84/12 . Side; rhythm and percussion devices
- 84/13 . Gas discharge tube
- 84/14 . Harmonicas
- 84/15 . Accordions
- 84/16 . Crescendo
- 84/17 . Cabinets
- 84/18 . Tuning
- 84/19 . Light sensitive resistor
- 84/20 . Monophonic
- 84/21 . Mechanical resonator
- 84/22 . Chord organs
- 84/23 . Electronic gates for tones
- 84/24 . Piezoelectrical transducers
- 84/25 . Pedal clavier
- 84/26 . Reverberation
- 84/27 . Stereo
- 84/28 . Service manuals

- 84/29 . Tape
- 84/30 . Fret control

**Motors: expansible chamber type**

- 91/00 Motors: expansible chamber type**
- 91/01 . Digital
  - 91/02 . Exhaust throttled motor control
  - 91/03 . Large area valve
  - 91/04 . Magnets

**Expansible chamber devices**

- 92/00 Expansible chamber devices**
- 92/01 . Bearing on piston or cylinder
  - 92/02 . Fluid bearing
  - 92/03 . Flexible drive
  - 92/04 . Lost motion

**Gas separation: processes**

- 95/00 Gas separation: processes**
- 95/90 . Solid sorbent
  - 95/901 . . Activated carbon
  - 95/902 . . Molecular sieve
  - 95/903 . . . Carbon

**Foods and beverages: apparatus**

- 99/00 Foods and beverages: apparatus**
- 99/10 . Temperature responsive
  - 99/11 . Conductivity control
  - 99/12 . Supersonic
  - 99/13 . Electrical deposition
  - 99/14 . Induction heating
  - 99/15 . Pie pans

**Presses**

- 100/00 Presses**
- 100/901 . Scrap auto body crushers
  - 100/902 . Can crushers
  - 100/903 . Pelleters
  - 100/904 . . Screw
  - 100/905 . . inner roll
  - 100/906 . . Reciprocating
  - 100/907 . . Rotary
  - 100/908 . . Series rolls
  - 100/909 . . Adjustable die openings
  - 100/91 . Meat
  - 100/911 . Jet or explosive
  - 100/912 . Binder containers
  - 100/913 . Truss presses
  - 100/914 . Scrap paper
  - 100/915 . Fixed upper ram, lower movable receptacle
  - 100/916 . Coil tightener and binder
  - 100/917 . Magnetic
  - 100/918 . Bolster and die

**Printing**

- 101/00 Printing**
- 101/29 . Printing involving a color-forming phenomenon
  - 101/30 . Special article printing with article controlled operation
  - 101/31 . Devices for applying metal leaf employing hot dies

- 101/32 . Means to vary the time of contact of one or more rollers in an ink train
- 101/33 . Ink transfer employing one or more belts
- 101/34 . Means to agitate ink in a reservoir
- 101/35 . Rollers and track therefore in printing presses
- 101/36 . Means for registering or alignment of print plates on print press structure
- 101/37 . Printing employing electrostatic force
- 101/38 . Means for axially reciprocating inking rollers
- 101/39 . Printing on cylinder of revolution
- 101/40 . Means to print on golf balls
- 101/41 . Means for braking press cylinders
- 101/42 . Means for tensioning webs
- 101/43 . Machines printing by both intaglio and another type of printing means
- 101/44 . Coin controlled printing machines
- 101/45 . Sensor for ink or dampening fluid thickness or density
- 101/46 . Printing operation controlled by code indicia on printing plate or substrate
- 101/47 . Automatic or remote control of metering blade position
- 101/48 . Endless printing belt for other than selective or progressive printing
- 101/49 . Convertible printing press, e.g. lithographic to letter press

**Ammunition and explosives**

- 102/00 Ammunition and explosives**
- 102/70 . Combustible cartridge
  - 102/701 . Charge wave forming
  - 102/702 . Compression ignition
  - 102/703 . Flechette
  - 102/704 . Coolants
  - 102/705 . Separated explosive constituents

**Railways**

- 104/00 Railways**
- 104/01 . Toy railroad

**Compositions: coating or plastic**

- 106/00 Compositions: coating or plastic**
- 106/01 . Fly ash
  - 106/02 . Perlite
  - 106/03 . Mica
  - 106/04 . Bentonite
  - 106/07 . Asphalt binders in coating compositions
  - 106/90 . Soil stabilization
  - 106/901 . Low molecular weight hydrocarbon polymer-containing mixture

**Horizontally supported planar surfaces**

- 108/00 Horizontally supported planar surfaces**
- 108/901 . Synthetic plastic industrial platform, e.g. pallet
  - 108/902 . . Made with deformable integral fastening elements

**Planting**

- 111/00 Planting**
- 111/90 . Methods of planting seeds and miscellaneous compositions
  - 111/901 . Lawn or turf

- 111/902 . . Pasture renovation
- 111/903 . Monitor
- 111/904 . . Population control function
- 111/905 . Seed treating seed planter
- 111/906 . Specialized commodity
- 111/907 . . Cane
- 111/908 . . Potato
- 111/909 . . Bulb
- 111/91 . . . Onion
- 111/911 . . Rice
- 111/912 . . Pineapple
- 111/913 . . Vegetable, i.e. small seed
- 111/914 . . . Lettuce
- 111/915 . Special condition
- 111/916 . . Seed pellet
- 111/917 . . Gel
- 111/918 . . Sprout
- 111/919 . Special transplant related feature
- 111/92 . Airplane
- 111/921 . Unique motor drive
- 111/922 . Variable drive mechanism
- 111/923 . Interrow, intercrop planter
- 111/924 . Minimum and no till planter
- 111/925 . Tank and hopper trailers
- 111/926 . Special suspension or gauging feature
- 111/927 . Parallelogram mounting

**Sewing**

- 112/00 Sewing**
- 112/01 . Suction thread cutting
- 112/02 . Air work handling
- 112/03 . Pneumatic

**Signals and indicators**

- 116/00 Signals and indicators**
- 116/01 . Combined with diverse elements
- 116/02 . Corrections by cursor lines
- 116/03 . Shiftable indicia
- 116/04 . Variable pulley
- 116/05 . using light guides
- 116/06 . Pointer structure
- 116/07 . Fluid actuated
- 116/08 . Inflatable indicator
- 116/09 . Balloons
- 116/10 . Bimetal detents
- 116/11 . On ski binders
- 116/12 . Door knockers
- 116/13 . Inclinometers for earth working devices
- 116/14 . Tapes as carriers
- 116/15 . Projection
- 116/16 . Road structure
- 116/17 . Tactile
- 116/18 . Wave generators
- 116/19 . Wave generator with resonating element
- 116/20 . Automobile transmission position
- 116/21 . Shaft position indicators
- 116/22 . Heated air
- 116/23 . Movable index
- 116/24 . with suction cups
- 116/25 . Air filter condition indicator
- 116/26 . Light rod

- 116/27 . Blowout plates
- 116/28 . Push button structure
- 116/29 . TV tuner
- 116/30 . Remote TV tuner
- 116/31 . TV channel selector
- 116/32 . Content indicator by weight
- 116/33 . Indicator for elevated cables
- 116/34 . Tension indicating
- 116/35 . Electroluminescent dials
- 116/36 . Illuminated dial and pointer
- 116/37 . Multiple movable scales
- 116/38 . Hot box alarm
- 116/39 . Dial magnifiers
- 116/40 . Flare devices
- 116/41 . Color comparison
- 116/42 . Oil filter
- 116/43 . Navigation devices
- 116/44 . Portable personal alarms
- 116/45 . Parallax
- 116/46 . Interchangeable scales
- 116/47 . Scale conversion, e.g. english-metric

**Single-crystal, oriented-crystal, and epitaxy growth processes; non-coating apparatus therefor**

- 117/00 Single-crystal, oriented-crystal, and epitaxy growth processes; non-coating apparatus therefor**
- 117/90 . Apparatus characterized by composition or treatment thereof, e.g. surface finish, surface coating
- 117/901 . Levitation, reduced gravity, microgravity, space
- 117/902 . . Specified orientation, shape, crystallography, or size of seed or substrate
- 117/903 . Dendrite or web or cage technique
- 117/904 . . Laser beam
- 117/905 . Electron beam
- 117/906 . Special atmosphere other than vacuum or inert
- 117/907 . . Refluxing atmosphere
- 117/91 . Downward pulling
- 117/911 . Seed or rod holders
- 117/912 . Replenishing liquid precursor, other than a moving zone
- 117/913 . Graphoepitaxy or surface modification to enhance epitaxy
- 117/914 . Crystallization on a continuous moving substrate or cooling surface, e.g. wheel, cylinder, belt
- 117/915 . Separating from substrate
- 117/916 . Oxygen testing
- 117/917 . Magnetic
- 117/918 . Single-crystal waveguide
- 117/919 . . Organic

**Coating apparatus**

- 118/00 Coating apparatus**
- 118/01 . Anti-offset
- 118/02 . Bead coater
- 118/03 . Container-related coater
- 118/04 . Curtain coater
- 118/05 . Fluidized bed
- 118/06 . Fruit coater
- 118/07 . Hoods
- 118/08 . Pan greaser
- 118/09 . Plank and molding coater

- 118/10 . Pipe and tube inside
- 118/11 . Pipe and tube outside
- 118/12 . Pipe and tube immersion
- 118/13 . Pipe and tube miscellaneous
- 118/14 . Roller, conical
- 118/15 . Roller structure
- 118/16 . Slinger type
- 118/17 . Wallpaper coater
- 118/18 . Wire and cord die
- 118/19 . Wire and cord immersion
- 118/20 . Wire and cord roller
- 118/21 . Wire and cord stripper
- 118/22 . Wire and cord miscellaneous
- 118/90 . Semiconductor vapor doping

**Animal husbandry**

- 119/00** **Animal husbandry**
- 119/01 . Milk digest
- 119/90 . Feed saving device
- 119/901 . Chain feeder
- 119/902 . Feed agitator
- 119/903 . Poultry roost preventing device
- 119/904 . Stanchion sure stop
- 119/905 . Breaking or training method
- 119/906 . Animal counting
- 119/907 . Harness
- 119/908 . Electrical animal control or handling

**Liquid heaters and vaporizers**

- 122/00** **Liquid heaters and vaporizers**
- 122/01 . Air heater
- 122/02 . Air heater - indirectly heated
- 122/03 . Gas flow baffles
- 122/04 . Once through boilers
- 122/05 . Critical pressure
- 122/06 . Damper-directed radiation
- 122/07 . Feeding air
- 122/10 . Portable units
- 122/11 . Removable steam-heating elements
- 122/13 . Tubes - composition and protection
- 122/14 . Tube replacement
- 122/15 . Valves
- 122/16 . Welding

**Internal-combustion engines**

- 123/00** **Internal-combustion engines**
- 123/01 . Interchangeable
- 123/02 . Accumulated fuel return to tank or engine-induction system
- 123/03 . Model
- 123/04 . Stratification
- 123/05 . Crankcase pressure-operated pumps
- 123/06 . Detachable
- 123/07 . Convertible
- 123/08 . Multiple engine units
- 123/09 . Flame ignition
- 123/10 . Fluidic amplifier fuel control
- 123/11 . Antidieseling
- 123/12 . Hydrogen
- 123/13 . Gas

**Mechanical guns and projectors**

- 124/00** **Mechanical guns and projectors**
- 124/90 . Limb tip rotatable element structure

**Stone working**

- 125/00** **Stone working**
- 125/901 . forming piezoelectric crystals

**Stoves and furnaces**

- 126/00** **Stoves and furnaces**
- 126/903 . Solar collector cleaning device
- 126/904 . Arrangements for sealing solar collector
- 126/905 . Preventing condensing of moisture in solar collector
- 126/906 . Connecting plural solar collectors as a unit
- 126/907 . Absorber coating
- 126/908 . . Particular chemical
- 126/909 . Linear concentrating lens
- 126/91 . Heat storage liquid

**Sugar, starch, and carbohydrates**

- 127/00** **Sugar, starch, and carbohydrates**
- 127/01 . Caramel

**Surgery**

- 128/00** **Surgery**
- 128/01 . Motorized syringe
- 128/03 . Heart-lung
- 128/06 . Intravenous injection support
- 128/07 . Servo-systems
- 128/08 . Collagen
- 128/10 . Fluid amplifiers
- 128/12 . Pressure infusion
- 128/13 . Infusion monitoring
- 128/14 . Polytetrafluoroethylene, i.e. PTFE
- 128/15 . Hook and loop type fastener
- 128/18 . Heat shrinkable film
- 128/19 . Clavicle splint
- 128/20 . Inflatable splint
- 128/21 . Silicone
- 128/22 . Blood coagulation
- 128/23 . Cervical collars
- 128/24 . Medical-surgical bags
- 128/25 . Artificial sphincters and devices for controlling urinary incontinence
- 128/26 . Cannula supporters
- 128/27 . Cryogenic
- 128/90 . Blood pressure recorder
- 128/901 . Suppression of noise in electric signal
- 128/902 . Biological signal amplifier
- 128/903 . Radio telemetry
- 128/904 . Telephone telemetry
- 128/905 . Feedback to patient of biological signal other than brain electric signal
- 128/906 . Multiphasic diagnostic clinic
- 128/907 . Acupuncture
- 128/908 . Patient protection from electric shock
- 128/909 . Breathing apparatus with means for preventing patient cross-contamination
- 128/91 . Anesthesia gas scavenging system
- 128/911 . Unilimb inhalation-exhalation breathing tubes

- 128/912 . Connections and closures for tubes delivering fluids to or from the body
- 128/913 . Breathable liquids
- 128/914 . Rebreathing apparatus for increasing carbon dioxide content in inhaled gas
- 128/915 . Ultrasound mammography
- 128/916 . Ultrasound 3-D imaging
- 128/917 . Body fluid, devices for protection therefrom, e.g. aids, hepatitis
- 128/918 . . Condoms and shields
- 128/919 . . Syringe, means to protect user
- 128/92 . Computer assisted medical diagnostics
- 128/921 . . Diet management
- 128/922 . . including image analysis
- 128/923 . . by comparison of patient data to other data
- 128/924 . . . using artificial intelligence
- 128/925 . . Neural network

**Tobacco**

- 131/00 Tobacco**
- 131/01 . Pipe literature
  - 131/90 . Liquified gas employed in puffing tobacco
  - 131/901 . Organic liquid employed in puffing tobacco
  - 131/902 . Inorganic chemical agents employed in puffing tobacco
  - 131/903 . Fixing the product after puffing
  - 131/904 . Pneumatic means for sensing condition or characteristic
  - 131/905 . Radiation source for sensing condition or characteristic
  - 131/906 . Sensing condition or characteristic of continuous tobacco rod
  - 131/907 . Ejection or rejection of finished article due to detected or sensed condition
  - 131/908 . Sensing unique characteristic or specific condition of finished product
  - 131/909 . Sensing condition in feed hopper for cigar or cigarette making
  - 131/91 . Sensing or detecting malfunction in cigar or cigarette maker

**Toilet**

- 132/00 Toilet**
- 132/901 . Comb tooth shape
  - 132/902 . Liquid treating forms and mandrels

**Cleaning and liquid contact with solids**

- 134/00 Cleaning and liquid contact with solids**
- 134/90 . Paint roller
  - 134/901 . Contact lens
  - 134/902 . Semiconductor wafer

**Tent, canopy, umbrella, or cane**

- 135/00 Tent, canopy, umbrella, or cane**
- 135/90 . Worker or spectator shelter
  - 135/901 . Hunting blind or ice-fishing shelter
  - 135/902 . Dressing shelter, e.g. beach or bathing
  - 135/903 . Roller-operated canvas
  - 135/904 . Separate storage means or housing for shelter
  - 135/905 . Method of erecting shelter
  - 135/906 . Arched structure

- 135/907 . Cover stretcher
- 135/908 . Super tent or canopy
- 135/909 . Fitting
- 135/91 . Illuminated cane or umbrella
- 135/911 . Cane for the blind
- 135/912 . Wheeled framework
- 135/913 . Flaccid cover made of netting

**Batteries: thermoelectric and photoelectric**

- 136/00 Batteries: thermoelectric and photoelectric**
- 136/29 . Testing, calibrating, treating, e.g. aging
  - 136/291 . Applications
  - 136/292 . . Space - satellite
  - 136/293 . . Circuits

**Fluid handling**

- 137/00 Fluid handling**
- 137/90 . Bumpless manual to automatic relays
  - 137/901 . Biased ball valves with operators
  - 137/902 . Slush pump check valves
  - 137/903 . Rubber valve springs
  - 137/904 . Cushion check valves
  - 137/905 . Rotary valves for multiple gas burners
  - 137/906 . Valves biased by fluid "springs"
  - 137/907 . Vacuum-actuated valves
  - 137/908 . Respirator control
  - 137/909 . Magnetic fluid valve
  - 137/91 . Destructible or deformable element constructed of specific material

**Pipes and tubular conduits**

- 138/00 Pipes and tubular conduits**
- 138/01 . Adhesive
  - 138/02 . Glass fiber
  - 138/03 . Polytetrafluoroethylene, i.e. PTFE
  - 138/04 . Air conditioning
  - 138/05 . Pre-stress
  - 138/06 . Corrosion
  - 138/07 . Resins
  - 138/08 . Bent shaped retained
  - 138/09 . Cellular
  - 138/10 . Metal foil
  - 138/11 . Shape

**Textiles: weaving**

- 139/00 Textiles: weaving**
- 139/01 . Bias fabric digest

**Fluent material handling, with receiver or receiver coating means**

- 141/00 Fluent material handling, with receiver or receiver coating means**
- 141/01 . Magnetic
  - 141/02 . Fluidic flow control valves

**Metal treatment**

- 148/00 Metal treatment**
- 148/001 . Amorphous semiconductor
  - 148/002 . Amphoteric doping
  - 148/003 . Anneal

- 148/004 . Annealing, incoherent light
- 148/005 . Antimonides of gallium or indium
- 148/006 . Apparatus
- 148/007 . Autodoping
- 148/008 . Bi-level fabrication
- 148/009 . Bi-MOS
- 148/01 . Bipolar transistors-ion implantation
- 148/011 . Bipolar transistors
- 148/012 . Bonding, e.g. electrostatic for strain gauges
- 148/013 . Breakdown voltage
- 148/014 . Capacitor
- 148/015 . Capping layer
- 148/016 . Catalyst
- 148/017 . Clean surfaces
- 148/018 . Compensation doping
- 148/019 . Contacts of silicides
- 148/02 . Contacts, special
- 148/021 . Continuous process
- 148/022 . Controlled atmosphere
- 148/023 . Deep level dopants
- 148/024 . Defect control-gettering and annealing
- 148/025 . Deposition multi-step
- 148/026 . Deposition thru hole in mask
- 148/027 . Dichlorosilane
- 148/028 . Dicing
- 148/029 . Differential crystal growth rates
- 148/03 . Diffusion
- 148/031 . Diffusion at an edge
- 148/032 . Diffusion length
- 148/033 . Diffusion of aluminum
- 148/034 . Diffusion of boron or silicon
- 148/035 . Diffusion through a layer
- 148/036 . Diffusion, nonselective
- 148/037 . Diffusion-deposition
- 148/038 . Diffusions-staged
- 148/039 . Displace P-N junction
- 148/04 . Dopants, special
- 148/041 . Doping control in crystal growth
- 148/042 . Doping, graded, for tapered etching
- 148/043 . Dual dielectric
- 148/044 . Edge diffusion under mask
- 148/045 . Electric field
- 148/046 . Electron beam treatment of devices
- 148/047 . Emitter dip
- 148/048 . Energy beam assisted EPI growth
- 148/049 . Equivalence and options
- 148/05 . Etch and refill
- 148/051 . Etching
- 148/052 . Face to face deposition
- 148/053 . Field effect transistors fets
- 148/054 . Flat sheets-substrates
- 148/055 . Fuse
- 148/056 . Gallium arsenide
- 148/057 . Gas flow control
- 148/058 . Ge germanium
- 148/059 . Germanium on silicon or Ge-Si on III-V
- 148/06 . Gettering
- 148/061 . Gettering-armorphous layers
- 148/062 . Gold diffusion
- 148/063 . Gp II-IV-VI compounds
- 148/064 . Gp II-VI compounds
- 148/065 . Gp III-V generic compounds-processing
- 148/066 . Gp III-V liquid phase epitaxy
- 148/067 . Graded energy gap
- 148/068 . Graphite masking
- 148/069 . Green sheets
- 148/07 . Guard rings and cmos
- 148/071 . Heating, selective
- 148/072 . Heterojunctions
- 148/073 . Hollow body
- 148/074 . Horizontal melt solidification
- 148/075 . Imide resists
- 148/076 . Implant
- 148/077 . Implantation of silicon on sapphire
- 148/078 . Impurity redistribution by oxidation
- 148/079 . Inert carrier gas
- 148/08 . Infrared
- 148/081 . Insulators
- 148/082 . Ion implantation FETs/COMs
- 148/083 . Ion implantation, general
- 148/084 . Ion implantation of compound devices
- 148/085 . Isolated-integrated
- 148/086 . Isolated zones
- 148/087 . I2L integrated injection logic
- 148/088 . J-Fet, i.e. junction field effect transistor
- 148/089 . Josephson devices
- 148/09 . Laser anneal
- 148/091 . Laser beam processing of fets
- 148/092 . Laser beam processing-diodes or transistor
- 148/093 . Laser beam treatment in general
- 148/094 . Laser beam treatment of compound devices
- 148/095 . Laser devices
- 148/096 . Lateral transistor
- 148/097 . Lattice strain and defects
- 148/098 . Layer conversion
- 148/099 . LED, multicolor
- 148/10 . Lift-off masking
- 148/101 . Liquid Phase Epitaxy, LPE
- 148/102 . Mask alignment
- 148/103 . Mask, dual function, e.g. diffusion and oxidation
- 148/104 . Mask, movable
- 148/105 . Masks, metal
- 148/106 . Masks, special
- 148/107 . Melt
- 148/108 . Melt back
- 148/109 . Memory devices
- 148/11 . Metal-organic CVD, ruehrwein type
- 148/111 . Narrow masking
- 148/112 . Nitridation, direct, of silicon
- 148/113 . Nitrides of boron or aluminum or gallium
- 148/114 . Nitrides of silicon
- 148/115 . Orientation
- 148/116 . Oxidation, differential
- 148/117 . Oxidation, selective
- 148/118 . Oxide films
- 148/119 . Phosphides of gallium or indium
- 148/12 . Photocathodes-Cs coated and solar cell
- 148/121 . Plastic temperature
- 148/122 . Polycrystalline
- 148/123 . Polycrystalline diffuse anneal
- 148/124 . Polycrystalline emitter
- 148/125 . Polycrystalline passivation

- 148/126 . Power FETs
- 148/127 . Process induced defects
- 148/128 . Proton bombardment of silicon
- 148/129 . Pulse doping
- 148/13 . Purification
- 148/131 . Reactive ion etching rie
- 148/132 . Recoil implantation
- 148/133 . Reflow oxides and glasses
- 148/134 . Remelt
- 148/135 . Removal of substrate
- 148/136 . Resistors
- 148/137 . Resists
- 148/138 . Roughened surface
- 148/139 . Schottky barrier
- 148/14 . Schottky barrier contacts
- 148/141 . Self-alignment coat gate
- 148/142 . Semiconductor-metal-semiconductor
- 148/143 . Shadow masking
- 148/144 . Shallow diffusion
- 148/145 . Shaped junctions
- 148/146 . Sheet resistance, dopant parameters
- 148/147 . Silicides
- 148/148 . Silicon carbide
- 148/149 . Silicon on III-V
- 148/15 . Silicon on sapphire SOS
- 148/151 . Simultaneous diffusion
- 148/152 . Single crystal on amorphous substrate
- 148/153 . Solar cells-implantations-laser beam
- 148/154 . Solid phase epitaxy
- 148/155 . Solid solubility
- 148/156 . Sonos
- 148/157 . Special diffusion and profiles
- 148/158 . Sputtering
- 148/159 . Strain gauges
- 148/16 . Superlattice
- 148/161 . Tapered edges
- 148/162 . Testing steps
- 148/163 . Thick-thin oxides
- 148/164 . Three dimensional processing
- 148/165 . Transmutation doping
- 148/166 . Traveling solvent method
- 148/167 . Two diffusions in one hole
- 148/168 . V-Grooves
- 148/169 . Vacuum deposition, e.g. including molecular beam epitaxy
- 148/17 . Vapor-liquid-solid
- 148/171 . Varistor
- 148/172 . Vidicons
- 148/173 . Washed emitter
- 148/174 . Zener diodes
- 148/90 . Ion implanted
- 148/901 . Surface depleted in an alloy component, e.g. decarburized
- 148/902 . having portions of differing metallurgical properties or characteristics
- 148/903 . . Directly treated with high energy electromagnetic waves or particles, e.g. laser, electron beam
- 148/904 . . Crankshaft
- 148/905 . . Cutting tool
- 148/906 . . Roller bearing element
- 148/907 . . Threaded or headed fastener
- 148/908 . . Spring

- 148/909 . . Tube
- 148/91 . . in pattern discontinuous in two dimensions, e.g. checkerboard pattern

#### **Explosive and thermic compositions or charges**

- 149/00 Explosive and thermic compositions or charges**
- 149/11 . Particle size of a component
- 149/111 . . Nitrated organic compound
- 149/112 . . Inorganic nitrogen-oxygen salt
- 149/113 . . Inorganic oxygen-halogen salt
- 149/114 . . Inorganic fuel
- 149/115 . . Organic fuel
- 149/116 . Flare contains resin
- 149/117 . Smoke or weather composition contains resin
- 149/118 . Gel contains resin
- 149/119 . Oxidizer compounds
- 149/12 . High energy fuel compounds
- 149/121 . . Containing B, P or S
- 149/122 . . Containing N, without B, P or S
- 149/123 . Tagged compositions for identifying purposes
- 149/124 . Methods for reclaiming or disposing of one or more materials in a composition

#### **Purses, wallets, and protective covers**

- 150/00 Purses, wallets, and protective covers**
- 150/90 . Means biasing mouth in open or closed configuration
- 150/901 . insulating flaccid cover

#### **Resilient tires and wheels**

- 152/00 Resilient tires and wheels**
- 152/01 . Pebble ejectors
- 152/02 . Static discharge
- 152/03 . Slits in threads
- 152/04 . Crack resistant
- 152/05 . Water filled
- 152/06 . Peg leg
- 152/07 . Rubber valves
- 152/08 . Clamps
- 152/09 . Bead to rim seal
- 152/10 . Split rim seal
- 152/11 . Tubeless valves
- 152/12 . White sidewalls
- 152/13 . Valves stem guards
- 152/14 . Fabrics
- 152/15 . Overlap
- 152/16 . Air impermeable liner
- 152/17 . Grooved rim
- 152/18 . Hub tires
- 152/19 . Sandwich breakers
- 152/20 . Rims for inverted bead tires
- 152/90 . Tread pattern having no blocks and having circumferential ribs defined by zig-zag circumferential grooves
- 152/901 . Tread pattern having no blocks and having circumferential ribs defined by linear circumferential grooves having straight edges
- 152/902 . Non-directional tread pattern having no circumferential rib and having blocks defined by circumferential grooves and transverse grooves

- 152/903 . Non-directional tread pattern having non-circumferential transverse groove following smooth curved path
- 152/904 . Specified tread pattern for front tire and rear tire
- 152/905 . Tread composition

#### **Adhesive bonding and miscellaneous chemical manufacture**

##### **156/00 Adhesive bonding and miscellaneous chemical manufacture**

- 156/906 . Off-drum manufacture of tire fabric or ply
- 156/907 . . including assembly of bias-cut fabric
- 156/908 . Laminating sheet to entire edge of block and both adjacent opposite surfaces, e.g. bookbinding
- 156/909 . Apparatus for applying new tread to used tire casing, e.g. retreading, recapping
- 156/91 . Bonding tire cord and elastomer: improved adhesive system
- 156/912 . Differential etching apparatus having a vertical tube reactor
- 156/913 . Differential etching apparatus having a horizontal tube reactor
- 156/914 . Differential etching apparatus including particular materials of construction
- 156/915 . Differential etching apparatus including focus ring surrounding a wafer for plasma apparatus
- 156/916 . Differential etching apparatus including chamber cleaning means or shield for preventing deposits
- 156/917 . Differential etching apparatus having a barrel reactor
- 156/918 . Delaminating processes adapted for specified product, e.g. delaminating medical specimen slide
- 156/919 . . Delaminating in preparation for post processing recycling step
- 156/92 . . . Textile delaminating in preparation for recycling, e.g. carpet
- 156/921 . . . Delaminating container component in preparation for recycling, e.g. glass bottle, plastic bottle
- 156/922 . . . Specified electronic component delaminating in preparation for recycling
- 156/923 . . . . Delaminating wire or optical fiber laminate, e.g. coaxial cable, optical cable
- 156/924 . . . . Delaminating display screen, e.g. cathode-ray, LCD screen
- 156/925 . . . . . Delaminating display screen using sintering for delamination
- 156/926 . . . Delaminating recording media, e.g. DVD, CD, HD, flash memory
- 156/927 . . . Delaminating vehicle component, e.g. brake pad
- 156/928 . . . . Delaminating tire, e.g. tread from carcass
- 156/929 . . Delaminating component from building, e.g. wall paper, shingle
- 156/93 . . Semiconductive product delaminating, e.g. delaminating emiconductive wafer from underlayer
- 156/931 . . . Peeling away backing
- 156/932 . . . . with poking during delaminating, e.g. jabbing release sheet backing to remove wafer
- 156/934 . Apparatus having delaminating means adapted for delaminating a specified article
- 156/935 . . Delaminating means in preparation for post consumer recycling

- 156/936 . . . Means for delaminating container component in preparation for recycling, e.g. glass bottle, plastic bottle
- 156/937 . . . Means for delaminating specified electronic component in preparation for recycling
- 156/938 . . . . Means for delaminating record media for recycling, e.g. CD, DVD, HD, flash memory
- 156/939 . . . Means for delaminating vehicle component, e.g. tread from carcass, brake pad
- 156/94 . . . Means adapted for delaminating component from building, e.g. wall paper, shingle
- 156/941 . . Means for delaminating semiconductive product
- 156/942 . . . with reorientation means
- 156/943 . . . with poking delaminating means, e.g. jabbing means

#### **Concentrating evaporators**

##### **159/00**

- 159/01 . Electric heat
- 159/02 . Entrainment
- 159/03 . Fluidized bed
- 159/04 . Foam
- 159/05 . Freezing
- 159/06 . Infrared
- 159/07 . Magnetic coupling
- 159/08 . Multieffect or multistage
- 159/09 . Two liquids dried simultaneously
- 159/10 . Organic
- 159/11 . Biologicals
- 159/12 . Radioactive
- 159/13 . Scale
- 159/14 . Soap
- 159/15 . Special material
- 159/16 . Vacuum
- 159/17 . Two liquids
- 159/18 . Accumulator
- 159/19 . Acid
- 159/20 . Additive
- 159/21 . Coating
- 159/22 . Condensate flashing
- 159/23 . Cooling
- 159/24 . Critical
- 159/25 . Decant, press, centrifuge
- 159/26 . Electric field
- 159/27 . Micropores
- 159/28 . Porous member
- 159/29 . Pebble bed
- 159/30 . Desuper heating
- 159/31 . Deaeration
- 159/32 . Indirect heat exchange
- 159/33 . Two liquids, one a heat carrier
- 159/34 . Caustic
- 159/35 . Viewports, peepsights, and sightglasses
- 159/36 . Rabbled hearth
- 159/37 . Ported
- 159/38 . Seed
- 159/39 . Power plant
- 159/40 . Pumps
- 159/41 . Removable units
- 159/42 . Seals
- 159/90 . using vibratory force
- 159/901 . Promoting circulation

- 159/902 . using natural heat
- 159/903 . . Solar
- 159/904 . . . Floating solar still
- 159/905 . Sewage treatment
- 159/906 . Wick

**Flexible or portable closure, partition, or panel**

- 160/00 Flexible or portable closure, partition, or panel**
- 160/01 . Auto radiator screens
- 160/02 . Auto screens and miscellaneous
- 160/03 . Auto visors and glare shields
- 160/04 . Auto side awnings
- 160/05 . Awning head and front bars
- 160/06 . Bath curtains
- 160/07 . Fabric
- 160/08 . Flexible door
- 160/09 . Fireplace screen
- 160/10 . Roll screen
- 160/11 . Roll screen idler roll
- 160/12 . Overlapping, on windows
- 160/13 . Suction cup
- 160/14 . Step joints
- 160/15 . Web-to-tube fasteners
- 160/16 . Magnetic
- 160/17 . Venetian blinds, motor driven
- 160/18 . Zipper
- 160/19 . Storm sash
- 160/90 . Vertical type venetian blind
- 160/901 . Lazy-tong connected plural strips, slats, or panels
- 160/902 . Venetian blind type bracket means
- 160/903 . Roll type bracket means
- 160/904 . Electric or pneumatic awning operator
- 160/905 . Lazy-tong-link awning operator
- 160/906 . Screw-threaded awning operator
- 160/907 . Spring, other than spring roller, awning operator
- 160/908 . Strand awning operator
- 160/909 . . Endless strand
- 160/91 . . Drum wound strand
- 160/911 . Worm gear awning operator
- 160/912 . Rack-and-pinion awning operator
- 160/913 . Gear awning operator

**Paper making and fiber liberation**

- 162/00 Paper making and fiber liberation**
- 162/02 . Chip soaking
- 162/03 . Wetting agent
- 162/04 . Pitch control
- 162/05 . Alpha cellulose
- 162/06 . Moisture and basic weight
- 162/07 . Water collectors, e.g. save-alls
- 162/08 . Chlorine-containing liquid regeneration
- 162/09 . Uses for paper making sludge
- 162/10 . . Computer control of paper making variables
- 162/11 . . . Wet end paper making variables
- 162/12 . Seasoning
- 162/90 . Papermaking press felts
- 162/901 . Impermeable belts for extended nip press
- 162/902 . Woven fabric for papermaking drier section
- 162/903 . Paper forming member, e.g. fourdrinier, sheet forming member

- 162/904 . with specified seam structure of papermaking belt

**Metal founding**

- 164/00 Metal founding**
- 164/01 . Battery
- 164/02 . Bearing
- 164/03 . Centrifugal
- 164/04 . Dental
- 164/05 . Electron beam
- 164/06 . Ingot
- 164/07 . Melt
- 164/08 . Piston
- 164/09 . Piston-vacuum
- 164/10 . Rotor
- 164/11 . Slush
- 164/12 . Thermit
- 164/13 . Valve
- 164/14 . Wheel
- 164/15 . Precision casting
- 164/90 . Rheo-casting

**Heat exchange**

- 165/00 Heat exchange**
- 165/001 . with alarm, indicator, recorder, test, or inspection means
- 165/002 . . Energy, efficiency, performance or malfunction
- 165/003 . . Remote control inspection means
- 165/004 . . Sight glass
- 165/005 . . Fluid level or amount
- 165/006 . . Temperature
- 165/007 . . Flow or valve position
- 165/008 . . Leakage
- 165/009 . having a solid heat storage mass for absorbing heat from one fluid and releasing it to another, i.e. regenerator
- 165/01 . . Cleaning storage mass
- 165/011 . . . Reciprocating cleaner device, e.g. scraper, sprayer
- 165/012 . . . Spray nozzle cleaner
- 165/013 . . Movable heat storage mass with enclosure
- 165/014 . . . Reciprocated linearly
- 165/015 . . . with pump
- 165/016 . . . Rotary storage mass
- 165/017 . . . . with thermal expansion compensating means
- 165/018 . . . . having means controlling direction or rate of flow
- 165/019 . . . . . Plate type shutter associated with face of storage mass
- 165/02 . . . . Seal and seal-engaging surface are relatively movable
- 165/021 . . . . . Seal engaging a face of cylindrical heat storage mass
- 165/022 . . . . . Seal defining sector-shaped flow area
- 165/023 . . . . . Brush-type seal
- 165/024 . . . . . Circumferential seal
- 165/025 . . . . . Heat resistant material seal
- 165/026 . . . . Seal attached to and rotating with storage mass
- 165/027 . . . . with particular rotary bearing or drive means
- 165/028 . . . . . Ring gear surrounding cylindrical storage mass

- 165/029 . . . . Cylindrical storage mass with axial flow passages
- 165/03 . . Mass formed of modules arranged in three dimensional matrix, i.e. checkerwork
- 165/031 . . . Graduated flow area, heat capacity or conductivity
- 165/032 . . . having gas supply or exhaust manifold structure
- 165/033 . . . . with flow control device, i.e. valve
- 165/034 . . . . with flow distributing baffle
- 165/035 . . . in casing
- 165/036 . . . Distinct passages formed in individual modules
- 165/037 . . having flow diverting means, e.g. valve to selectively control flow through storage mass
- 165/038 . . . Correlated control of plural diverting means
- 165/039 . . . . Synchronously rotated flow guiding hoods disposed on opposite sides of fixed regenerator
- 165/04 . . . . Linearly movable diverting means
- 165/041 . . . Rotary diverting means
- 165/042 . . Particular structure of heat storage mass
- 165/043 . . . Element for constructing regenerator rotor
- 165/044 . having flexible heat exchange surface conforming to a solid structure, e.g. applicator
- 165/045 . . Conform to head, neck, or face
- 165/046 . . Heat exchange body suit
- 165/047 . . for cooling
- 165/048 . . . Electrical component
- 165/049 . . . Or for heating
- 165/05 . . . . including a pump or valve
- 165/051 . having expansion and contraction relieving or absorbing means
- 165/052 . . for cylindrical heat exchanger
- 165/053 . . . Flexible or movable header or header element
- 165/054 . . . . Movable header, e.g. floating header
- 165/055 . . . . . including guiding means for movable header
- 165/056 . . . . . Fluid sealing means between movable header and enclosure
- 165/057 . . . . Flexing tubesheet
- 165/058 . . . . Movable tubesheet, e.g. floating tubesheet
- 165/059 . . . . . Tubesheet connected to enclosure by expansion joint
- 165/06 . . . Expandable casing for cylindrical heat exchanger
- 165/061 . . . . for plural cylindrical heat exchangers
- 165/062 . . . . having particular external casing support means
- 165/063 . . . Cylindrical heat exchanger fixed to fixed end supports
- 165/064 . . . . including intermediate support
- 165/065 . . . . Bent cylindrical heat exchanger
- 165/066 . . . . . Coiled
- 165/067 . . . Cylindrical heat exchanger rectilinearly slidable relative to its support
- 165/068 . . . . including fluid seal
- 165/069 . . . Pivotal support for cylindrical heat exchanger
- 165/07 . . . Resilient fluid seal
- 165/071 . . Resilient fluid seal for plate-type heat exchanger
- 165/072 . Agitator or impeller motor operated by first heat exchange fluid
- 165/073 . . To agitate or move second heat exchange fluid
- 165/074 . . . Agitator structure confines first heat exchange fluid
- 165/075 . . . Agitator structure confines second heat exchange fluid
- 165/076 . with scraper for removing product from heat transfer surface
- 165/077 . . Screw shaped scraper
- 165/078 . . Linearly operated scraper
- 165/079 . . . Reciprocated linearly
- 165/08 . . Plural scrapers for spaced shelves or chambers
- 165/081 . . Rotary heat exchange scraper or scraper for rotary heat exchange surface
- 165/082 . . . Grooved drum surface
- 165/083 . . . Scraper attached to or formed part of rotary heat exchange fluid surface
- 165/084 . . . Scraper within annular space formed by concentric cylinders or concentric conical surfaces
- 165/085 . . . Scraper for cleaning inner surface of rotary heat exchange surface
- 165/086 . . . Weight operated scraper
- 165/087 . . . Spring pressed scraper
- 165/088 . . . Adjustable scraper
- 165/089 . . . for scraping flat horizontal surface
- 165/09 . . . . Scraper blade movable relative to scraper blade support, e.g. pivoting blade, rocking blade
- 165/091 . . . . for scraping wall of cylindrical heat exchanger
- 165/092 . with valve or movable deflector for heat exchange fluid flow
- 165/093 . . Adjustable radiator face covering means, e.g. adjustable shield for car radiator, heater core
- 165/094 . . . Windowshade type, i.e. sheet feeds off roller
- 165/095 . . . Rectilinear sliding movement of adjustable cover
- 165/096 . . . Pivotal movement of adjustable cover
- 165/097 . . . . Plural parallel pivotable shutters
- 165/098 . . . . . One shutter section having different flow area or flow direction with another shutter section
- 165/099 . . . . . with fan
- 165/10 . . Flow direction reversed through heat exchanger
- 165/101 . . for controlling supply of heat exchange fluid flowing between hydraulically independent heat exchange sections
- 165/102 . . . Hydraulically independent single-confined-fluid radiator sections for heating ambient air
- 165/103 . . . . Valves each controls a radiator section
- 165/104 . . . Hydraulically independent heat exchange sections connected in parallel
- 165/105 . . . . Correlated valves
- 165/106 . . . . Valves each controls a heat exchange section
- 165/107 . . . . . Hydraulically independent heat exchange tubes disposed in housing, e.g. tank, casing
- 165/108 . . . . . Coiled tubes
- 165/109 . . with by-pass of heat exchanger or heat exchanger section
- 165/11 . . . Bypass within or surrounds heat exchanger
- 165/111 . . . . Heat exchanger enclosing a fluid conduit confining second heat exchange fluid
- 165/112 . . . . . Stove pipe drum having air draft passage for heating ambient air
- 165/113 . . . . Bypass centrally located in heat exchanger
- 165/114 . . . . . having perforated wall

- 165/115 . . . . . Surrounding by a helical flow channel
- 165/116 . . . . . Plural adjacent flow channel parallel to central bypass
- 165/117 . . . . . Arranged for series flow therethrough
- 165/118 . . . . . Serpentine heat exchange flow path
- 165/119 . . . . . Bypass controlled by pivotal damper
- 165/12 . . . . . U or serpentine heat exchange flow path
- 165/121 . . . . . Serpentine heat exchange flow path
- 165/122 . . . . . U heat exchange flow path and linear bypass
- 165/123 . . . . . Heat exchange flow path through heat exchanger altered, e.g. crossed
- 165/124 . . . . . Stove pipe drum
- 165/125 . . . . . Valve mounted on fixed deflector
- 165/126 . . . . . Total flow rate through heat exchanger controlled by valve
- 165/127 . . . . . Stove pipe drum
- 165/128 . . . . . including air draft passage for heating ambient air
- 165/129 . . . . . Valve regulates flow through housing enclosing heat exchanger
- 165/13 . . . . . including valve regulating flow through heat exchanger
- 165/131 . . . . . Single-confined-fluid radiator for heating ambient air
- 165/132 . . . . . with adjustor for heat flow
- 165/133 . . . . . Conduction rate
- 165/134 . . . . . by varying thickness of conductive layer, e.g. air gap
- 165/135 . . . . . Movable heat exchanger
- 165/136 . . . . . Movable belt or strip transfers heat to or from objects or material thereon
- 165/137 . . . . . Unconstrained movement, e.g. float
- 165/138 . . . . . Partially rotatable, e.g. rocking, pivoting, oscillation, tilting
- 165/139 . . . . . Fully rotatable
- 165/14 . . . . . Rotating heat exchanger having rotating flow confining structures or chambers for two separate heat exchange fluids
- 165/141 . . . . . Concentric flow confining structures or chambers
- 165/142 . . . . . Jacketed shell
- 165/143 . . . . . Discrete tubing having length extending along a longitudinal axis of rotating heat exchanger
- 165/144 . . . . . Helical
- 165/145 . . . . . Radially extending hollow arm on rotating shaft traverses furnace shelf, e.g. rabble arm
- 165/146 . . . . . Angled blade suspended from arm for advancing material
- 165/147 . . . . . Fluid impeller or material advancer
- 165/148 . . . . . Auger
- 165/149 . . . . . having hollow blade
- 165/15 . . . . . Radial or axial impeller
- 165/151 . . . . . having hollow blade
- 165/152 . . . . . Rotating agitator
- 165/153 . . . . . Flow space or fluid chamber defined between two relatively movable, closely spaced coextensive surfaces
- 165/154 . . . . . Hollow tubing rotates in vessel to stir contents
- 165/155 . . . . . Tubing has radially or axially extending sections
- 165/156 . . . . . Hollow cylindrical member, e.g. drum
- 165/157 . . . . . Fluid sprayed onto surface of rotatable cylinder
- 165/158 . . . . . having stationary material removal means
- 165/159 . . . . . with particular flow path or defined fluid chamber, e.g. annulus, spiral
- 165/16 . . . . . Concentric shells define annular flow space
- 165/161 . . . . . with means defining particular flow path, e.g. baffle
- 165/162 . . . . . Only direct-contact heat exchange between two separately supplied fluids
- 165/163 . . . . . including a means to form fluid film on heat transfer surface, e.g. trickle
- 165/164 . . . . . Film flow constrained to spiral path
- 165/165 . . . . . Film formed on spirally coiled member
- 165/166 . . . . . Vertically spaced pipe sections contact liquid in underlying troughs
- 165/167 . . . . . Liquid film flows sequentially along upper surfaces of vertically spaced trays, i.e. shelf-to-shelf
- 165/168 . . . . . Film formed on interior surface of container or pipe
- 165/169 . . . . . inside of vertical pipe
- 165/17 . . . . . Distributor "cap" mounted in top end of pipe
- 165/171 . . . . . including means at top end of vertical pipe to distribute liquid film on pipe exterior
- 165/172 . . . . . Film flows along exterior of plural pipe sections
- 165/173 . . . . . Pipe exterior surfaces about to form continuous surface
- 165/174 . . . . . Intervening members extend between spaced pipe sections to form continuous surface
- 165/175 . . . . . Horizontally extending, parallel sections disposed in vertical array, i.e. one pipe directly above another
- 165/176 . . . . . with means suspended beneath pipe surface to guide liquid droplets
- 165/177 . . . . . Film flows along upper surface of tray
- 165/178 . . . . . Parallel corrugated vertical sheets formed fluid passage therebetween
- 165/179 . . . . . Container enclosed by casing
- 165/18 . . . . . Vertically disposable elongated member
- 165/181 . . . . . Horizontally disposable elongated member
- 165/182 . . . . . Indirect-contact cooling tower
- 165/183 . . . . . Indirect-contact evaporator
- 165/184 . . . . . Indirect-contact condenser
- 165/185 . . . . . having stacked plates forming flow channel therebetween
- 165/186 . . . . . Stacked plates surrounded by housing confining another fluid
- 165/187 . . . . . having pump downstream of condenser
- 165/188 . . . . . Pump to remove only uncondensed vapor or air
- 165/189 . . . . . From a first-stage direct-contact condenser
- 165/19 . . . . . including second-stage indirect-contact condenser
- 165/191 . . . . . including second-stage direct-contact condenser
- 165/192 . . . . . including means to heat collected condensate
- 165/193 . . . . . First-stage condenser serially connected to second-stage condenser
- 165/194 . . . . . First stage direct-contact condenser
- 165/195 . . . . . including condensate collecting tray connected to condensate drain conduit to divert condensate around a section of heat transfer surface

- 165/196 . . Baffle defines flow passage within header for condensate to bypass portion of vapor flow path
- 165/197 . . including means for removing condensate from vapor flow path to bypass portion of vapor flow path
- 165/198 . . Condensate guiding means attached to heat transfer surface
- 165/199 . . . Heat transfer tube surrounds by jacket condensate guiding means
- 165/20 . . . Condensate guiding means forms inside heat transfer tube
- 165/201 . . . including fin member associated with condensate guiding means
- 165/202 . . Vapor flow passage between vapor inlet and outlet has decreasing cross-sectional area
- 165/203 . . . Coolant tubes arranged in groups to form vapor flow lanes of decreasing cross-sectional area
- 165/204 . . including a direct-contact heat exchange chamber
- 165/205 . . Space for condensable vapor surrounds space for coolant
- 165/206 . . . including coiled heat exchange tube
- 165/207 . . . Distinct outlets for separated condensate and gas
- 165/208 . . . . including vapor guide plate extending across vapor inlet
- 165/209 . . . . including tube banks arranged in undulating pattern, e.g. w shape
- 165/21 . . . . including perforated baffle completely surrounding a group of coolant tube
- 165/211 . . . . including concave member adjacent to vapor outlet and partially covering a group of coolant tubes
- 165/212 . . . . including inclined flat condensate guiding means
- 165/213 . . . . including baffle partially covering a group of coolant tubes
- 165/214 . . . . including baffle structure for reversing flow direction of vapor
- 165/215 . . . having longitudinal partition extending parallel to longitudinal axis of coolant tube
- 165/216 . . . having partition transverse to longitudinal axis of coolant tube
- 165/217 . . Space for coolant surrounds space for vapor
- 165/218 . . . Condenser adapted to cover opening at top of vapor generator
- 165/219 . . . . Radiator cap condenser
- 165/22 . . . U-shaped or spur tubes connected to adjacent inlet and outlet headers
- 165/221 . . . Vapor is the only confined fluid
- 165/222 . . . . Plural parallel tubes confining vapor connecting between spaced headers
- 165/223 . . . Vapor tube enclosed by coolant confining shell
- 165/224 . including a means to form a fluid jet
- 165/225 . with solid conveyor
- 165/226 . . Screw conveyor
- 165/227 . . Belt conveyor
- 165/228 . with fan or pump
- 165/229 . . Screw conveyor in pipe or tank
- 165/30 . . Injector-type pump
- 165/301 . . . having nested nozzles
- 165/302 . . Rotary gas pump
- 165/303 . . . Annular heat exchanger
- 165/304 . . . . Axial impeller
- 165/305 . . . . . Located at heat-exchange housing inlet
- 165/306 . . . . . Located at heat-exchange housing outlet
- 165/307 . . . including plural impellers
- 165/308 . . . . Coaxial impellers
- 165/309 . . . . . Radial impeller
- 165/31 . . . Heat exchanger located at housing inlet or outlet
- 165/311 . . . including particular flow deflector, e.g. shroud, diffuser
- 165/312 . . . . Plural parallel deflectors
- 165/313 . . . . Deflector with curved surface
- 165/314 . . . Radial impeller
- 165/315 . . . . Located at heat-exchange housing inlet
- 165/316 . . . Axial impeller located at heat-exchange housing inlet
- 165/317 . . . Axial impeller located at heat-exchange housing outlet
- 165/318 . with driven agitator
- 165/319 . . Linearly moving agitator
- 165/32 . . Fully rotary agitator
- 165/321 . . . Generating toroidal flow
- 165/322 . . . including heat exchange jacket-walls
- 165/323 . . . . Heating or cooling coil disposed between jacket-walls
- 165/324 . . . . Agitator having blade sections mounted along rotating shaft
- 165/325 . . . Blade sections mounted along rotating shaft
- 165/326 . . . Agitator and heating or cooling coil disposed in same housing
- 165/327 . Thermosyphonic having vertical air draft passage
- 165/328 . . Air draft passage confined entirely or in part by fin structure
- 165/329 . . . Corrugated fin attached to heat transfer surface
- 165/33 . . . Air draft passage is parallel to flow direction of heating or cooling means
- 165/331 . . Air draft passage confined entirely by heat transfer surface
- 165/332 . . . Coaxial ducts define air draft passage and annular passage for heat exchange fluid
- 165/333 . . . . including baffle
- 165/334 . . . . . Baffle located in annular passage
- 165/335 . . . Plural air draft passages enclosed by casing
- 165/336 . . . . Angled air draft passage
- 165/337 . . Heating or cooling means entirely surrounded by air draft passage forming casing
- 165/338 . . . Nested or concentric members define annular air draft passage and heating or cooling conduit
- 165/339 . . . . with baffle
- 165/34 . . . including flow baffle in casing
- 165/341 . . . Parallel heating or cooling tubes or tubular sections, e.g. coil, serpentine
- 165/342 . Tank with heat exchanger
- 165/343 . . Heat exchanger forms all or portion of tank
- 165/344 . . . Spiral coil forms hemispherical vessel
- 165/345 . . . Jacketed vessel
- 165/346 . . . . Flow baffle or fin in annular flow space
- 165/347 . . Heat exchanger forms cover for tank
- 165/348 . . Heat exchanger within tank
- 165/349 . . . Supported by cover for tank
- 165/35 . . . Tubing removably coupled to inlet and outlet at tank wall
- 165/351 . . . Spaced from tank wall

- 165/352 . . . Flow directing baffle associated with heat exchanger tubing
- 165/353 . . Tube coil bonded directly to tank exterior
- 165/354 . . Heat exchanger serially connected to tank
- 165/355 . having separate flow passage for two distinct fluids
- 165/356 . . Plural plates forming a stack providing flow passages therein
- 165/357 . . . forming annular heat exchanger
- 165/358 . . . . Radially arranged plates
- 165/359 . . . including means for modifying thermal stress in heat exchange plate
- 165/36 . . . Stacked plates having plurality of perforations
- 165/361 . . . Circular flow passages between plates
- 165/362 . . . Heat exchange liquids separated by double walls
- 165/363 . . . Slotted plates forming grid
- 165/364 . . . with fluid traversing passages formed through the plate
- 165/365 . . . . including peripheral seal element forming flow channel bounded by seal and heat exchange plates
- 165/366 . . . . . Rigid or semi-rigid peripheral seal frame
- 165/367 . . . . . Peripheral seal element between corrugated heat exchange plates
- 165/368 . . . . . including angled corrugations with respect to flow direction
- 165/369 . . . . . including seal to plate attachment means
- 165/37 . . . . . Unitary heat exchange plate and projecting edge
- 165/371 . . . . . including mating flanges around fluid traversing passage
- 165/372 . . . . . Adjacent heat exchange plates having joined bent edge flanges for forming flow channels therebetween
- 165/373 . . . Adjacent heat exchange plates having joined bent edge flanges for forming flow channels therebetween
- 165/374 . . . . . Liquid to air heat exchanger having liquid passage formed by joined sheets
- 165/375 . . . . . Transverse air tubes
- 165/376 . . . . . Air passages defined by spacing projections of sheets
- 165/377 . . . . . Spacing projections formed by folded sheet portions
- 165/378 . . . . . . including intermediate sheet supporting opposed spacing projections
- 165/379 . . . . . including corrugated air fin passages between adjacent liquid passages
- 165/38 . . . . . Air fin conforms to joined corrugated sheets forming plural liquid chambers
- 165/381 . . . . . including air fin apertures
- 165/382 . . . . . Overlapping flanges
- 165/383 . . . . . Interlocking flanges
- 165/384 . . . . . Thermally bonded side edges
- 165/385 . . . Bent sheet forming a single tube
- 165/386 . . . . . To form only air passages
- 165/387 . . . including side-edge seal or edge spacer bar
- 165/388 . . . . including spacer bar transverse to plate stack
- 165/389 . . . . Flow enhancer integral with side-edge seal or edge spacer bar
- 165/39 . . . . Flange element to connect two adjacent heat exchange plates
- 165/391 . . . . including intermediate corrugated element
- 165/392 . . . . . Unitary heat exchange plate and projecting edge
- 165/393 . . . including additional element between heat exchange plates
- 165/394 . . . . . Corrugated heat exchange plate
- 165/395 . . Monolithic core having flow passages for two different fluids, e.g. one- piece ceramic
- 165/396 . . . Plurality of stacked monolithic cores
- 165/397 . . . including conduits embedded in monolithic block
- 165/398 . . Spirally bent heat exchange plate
- 165/399 . . Corrugated heat exchange plate
- 165/40 . . Shell enclosed conduit assembly
- 165/401 . . . including tube support or shell-side flow director
- 165/402 . . . . . Manifold for shell-side fluid
- 165/403 . . . . . Preheater for shell-side fluid for preventing thermal shock to tube sheet
- 165/404 . . . . . Serially connected separate shells
- 165/405 . . . . . Extending in a longitudinal direction
- 165/406 . . . . . Helically or spirally shaped
- 165/407 . . . . . internal casing or tube sleeve
- 165/408 . . . . . . Tube sleeve
- 165/409 . . . . . including transverse element, e.g. fin, baffle
- 165/41 . . . . . . Movable internal casing connecting to transverse element
- 165/411 . . . . . Connecting to shell by specific structure
- 165/412 . . . . . including transverse element, e.g. fin, baffle
- 165/413 . . . . . for directing flow along the length of tube
- 165/414 . . . . . for supporting coil tubes
- 165/415 . . . . . including perforations
- 165/416 . . . . . Extending transverse of shell, e.g. fin, baffle
- 165/417 . . . . . including spacer or support for transverse tube support or shell-side flow director
- 165/418 . . . . . . Tubular spacer sleeve
- 165/419 . . . . . . Spacer or support connected to shell
- 165/42 . . . . . Segmented plate
- 165/421 . . . . . Disc and donut plates
- 165/422 . . . . . Unitary tube support or shell-side flow director carried by single tube
- 165/423 . . . . . Bar
- 165/424 . . . . . forming grid structure
- 165/425 . . . . . having ends connected to ring element
- 165/426 . . . . . Clamped tube spacer or support
- 165/427 . . . Manifold for tube-side fluid, i.e. parallel
- 165/428 . . . . including flow director in manifold
- 165/429 . . . . Line-connected conduit assemblies
- 165/43 . . . . . Manifolds connected in parallel, e.g. multi-stage
- 165/431 . . . . . Manifolds connected in series
- 165/432 . . . . including a tube sheet
- 165/433 . . . . . Tubes-tubesheet connection
- 165/434 . . . . . Plural strips forming tubesheet
- 165/435 . . . . Plural bonded conduit end portions, i.e. tubesheet not needed
- 165/436 . . . . Bent conduit assemblies
- 165/437 . . . . . Coiled
- 165/438 . . . . . Helical

- 165/439 . . . Serially connected conduit assemblies, i.e. no manifold
- 165/44 . . . Coiled conduit assemblies
- 165/441 . . . . Helical
- 165/442 . . Conduits
- 165/443 . . . Adjacent conduits with transverse air passages, e.g. radiator core type
- 165/444 . . . . including transversely stacked fin sheets
- 165/445 . . . . including transverse corrugated fin sheets
- 165/446 . . . . including intermediate sheet between adjacent tubes forming air fin passages
- 165/447 . . . . . Corrugated sheet
- 165/448 . . . Air conduits, e.g. radiator core type
- 165/449 . . . Vertically stacked conduits
- 165/45 . . . . including integral abutting or interlocking elements
- 165/451 . . . including bent conduits
- 165/452 . . . including fins
- 165/453 . . Plural elements arranged to form a fluid passage
- 165/454 . having side-by-side conduits structure or conduit section
- 165/455 . . Readily detachable tubes having ends with distinct fluid coupling members engaging corresponding coupling members on manifold
- 165/456 . . Readily and independently detachable sections
- 165/457 . . . Individual manifolds for each section
- 165/458 . . Self-contained sections hydraulically connected in series
- 165/459 . . Strips with shaped, interfitted edges form heat exchanger core with plural passages
- 165/46 . . . with spacers interposed between adjacent passages
- 165/461 . . Plate fins formed with tubular projections which join with projections of adjacent plates to form parallel conduits
- 165/462 . . . Tapering, nested projections
- 165/463 . . . . Conduits oblong in cross section
- 165/464 . . Conduits formed by joined pairs of matched plates
- 165/465 . . . Manifold space formed in end portions of plates
- 165/466 . . . . Manifold spaces provided at one end only
- 165/467 . . . with turbulence enhancing pattern embossed on joined plates
- 165/468 . . Core formed by stack tubular members with abutting edges
- 165/469 . . Reinforcing rod or strip extends across parallel fin edges
- 165/47 . . Tensioning member within manifold
- 165/471 . . Plural parallel conduits joined by manifold
- 165/472 . . . U-shaped conduits connected to side-by-side manifolds
- 165/473 . . . with clamping member at joint between header plate and header tank
- 165/474 . . . . with compressible seal at joint
- 165/475 . . . . Header plate and tank of dissimilar materials
- 165/476 . . . Fusion joint, e.g. solder, braze between tube plate and header tank
- 165/477 . . . Elastic seal element between conduit ends and receiving holes in header plate
- 165/478 . . . Separate means employed for mechanical attachment and hydraulic seal of conduit ends to header plate
- 165/479 . . . Tubes joined to tube plate with adhesive, e.g. glue or braze compound
- 165/48 . . . Elongated support members extending between spaced manifolds
- 165/481 . . . Partitions in manifold define serial flow pattern for conduits/conduit groups
- 165/482 . . . . Partitions are separate members
- 165/483 . . . Flow deflecting/retarding means in header for even distribution of fluid to plural tubes
- 165/484 . . . . Orifices mounted at conduit ends
- 165/485 . . . Unitary, i.e. one-piece header structure
- 165/486 . . . Corrugated fins disposed between adjacent conduits
- 165/487 . . . . Louvered
- 165/488 . . . Header is rounded in cross section, e.g. circular, oval
- 165/489 . . . Two piece header structure
- 165/49 . . . Noncircular tube cross section, e.g. oval, triangular
- 165/491 . . . Manifolds formed in core-enclosing frame
- 165/492 . . Plural conduits with ends connected to tube plate
- 165/493 . . . Welded or fused joint between conduit end and plate
- 165/494 . . . Conduit end deformed, e.g. expanded to affix to plate
- 165/495 . . Single unitary conduit structure bent to form flow path with side-by-side sections
- 165/496 . . . Spiral or helical coil
- 165/497 . . . Serpentine flow path with straight side-by-side sections
- 165/498 . . . . Fin assembly extends across side-by-side sections
- 165/499 . . with parallel tubes or tube sections having ends joined to opposed frame members
- 165/50 . . Side-by-side conduits with fins
- 165/501 . . . Plate fins penetrated by plural conduits
- 165/502 . . . . Lanced
- 165/503 . . . . . Angled louvers
- 165/504 . . . . Contoured fin surface
- 165/505 . . . Corrugated strips disposed between adjacent conduits
- 165/506 . . Side-by-side conduits with means, e.g. support grid holding them in spaced relation
- 165/507 . . Straight side-by-side conduits joined for flow of one fluid
- 165/508 . . . Side-by-side conduits penetrate parallel plate-type fins
- 165/509 . . . Side-by-side conduits lie in common plane
- 165/51 . having heat exchange surface treatment, adjunct or enhancement
- 165/511 . . Polished heat transfer surface
- 165/512 . . Coated heat transfer surface
- 165/513 . . . Corrosion resistant
- 165/514 . . . Hydrophilic/hydrophobic coating
- 165/515 . . Patterned surface, e.g. knurled, grooved
- 165/516 . . . Subsurface pockets formed
- 165/517 . . Roughened surface
- 165/518 . . Conduit with discrete fin structure
- 165/519 . . . Porous or mesh
- 165/52 . . . Internal and external
- 165/521 . . . . Pin fins penetrating conduit wall
- 165/522 . . . Transverse fins spaced along conduit

- 165/523 . . . . Separated by integral flanges engaging conduit exterior
- 165/524 . . . Longitudinally extending
- 165/525 . . . . Helical
- 165/526 . . . . . Spine or loop fins
- 165/527 . . . . . Integrally formed
- 165/528 . . . Fin and conduit of diverse materials
- 165/529 . . with structure for promoting turbulence and/or breaking up laminar flow adjacent heat transfer surface
- 165/53 . . . Conduit insert
- 165/531 . . with wicking structure
- 165/532 . Heat exchange conduit structure
- 165/533 . . Composite of diverse materials
- 165/534 . . . Concentric layers
- 165/535 . . Helically formed
- 165/536 . . Noncircular cross-section
- 165/537 . . . Oblong or elliptical
- 165/538 . . with particular flow connecting structure
- 165/539 . having a heat storage mass
- 165/90 . Cooling towers
- 165/901 . Heat savers
- 165/902 . Heat storage
- 165/903 . Convection
- 165/904 . Radiation
- 165/905 . Materials of manufacture
- 165/906 . Reinforcement
- 165/907 . Porous
- 165/908 . Fluid jets
- 165/909 . Regeneration
- 165/91 . Tube pattern
- 165/911 . Vaporization
- 165/912 . Combined or convertible heat exchange modes
- 165/913 . Condensation
- 165/914 . Filming
- 165/915 . Foaming
- 165/916 . Oil cooler
- 165/917 . Pressurization and/or degassification
- 165/918 . Heated and cooled food cabinets and/or trays
- 165/919 . . Wheeled
- 165/92 . Particulate heat exchange
- 165/921 . Dew point

**Wells**

- 166/00 Wells**
- 166/901 . Wells in frozen terrain
- 166/902 . for inhibiting corrosion or coating

**Farriery**

- 168/00 Farriery**
- 168/01 . Nonmetallic
- 168/02 . Traction shape

**Fire extinguishers**

- 169/00 Fire extinguishers**
- 169/01 . Floats
- 169/02 . Ablative fluids
- 169/03 . Trip mechanisms

**Unearthing plants or buried objects**

- 171/00 Unearthing plants or buried objects**
- 171/01 . Peanut digger

**Earth working**

- 172/00 Earth working**
- 172/90 . Plant thinners

**Tool driving or impacting**

- 173/00 Tool driving or impacting**
- 173/01 . Operable submerged in liquid
- 173/02 . Sound muffling
- 173/03 . Lubrication
- 173/04 . Liquid operated

**Electricity: conductors and insulators**

- 174/00 Electricity: conductors and insulators**
- 174/01 . Anti-tracking
- 174/02 . Ballasts
- 174/07 . Sodium conductors, connectors
- 174/08 . Shrinkable tubes
- 174/09 . Pull-out cabinet or drawer with retractable cable
- 174/10 . Bushing with current transformers
- 174/11 . Zipper tubes
- 174/12 . Helical preforms
- 174/13 . High voltage cable, e.g. above 10kv, corona prevention
- 174/14 . . having a particular cable application, e.g. winding
- 174/15 . . . in a power generation system, e.g. prime-mover dynamo, generator system
- 174/16 . . . in a motive power system, e.g. electric motor control system
- 174/17 . . . in an electric power conversion, regulation, or protection system
- 174/18 . . . in a power distribution network
- 174/19 . . . in a dynamo-electric machine
- 174/20 . . . . Stator
- 174/21 . . . . Rotor
- 174/22 . . . . Winding *per se*
- 174/23 . . . in a circuit breaker, relay, or switch
- 174/24 . . . in an inductive device, e.g. reactor, electromagnet
- 174/25 . . . . Transformer
- 174/26 . . having a plural-layer insulation system
- 174/27 . . . including a semiconductive layer
- 174/28 . . . . Plural semiconductive layers
- 174/29 . . having a semiconductive layer
- 174/30 . . having insulation with a particular dimension or geometry
- 174/31 . . having a shield or metallic layer
- 174/32 . . having means for cooling
- 174/33 . . Method of cable manufacture, assembly, repair, or splicing
- 174/34 . PCB in box or housing
- 174/35 . Box or housing mounted on substrate or PCB

**Weighing scales**

- 177/00 Weighing scales**
- 177/02 . Digitizers mechanical
- 177/03 . Digitizers electrical

- 177/04 . Digitizers non-sensing
- 177/05 . Magnets
- 177/06 . Photoelectric
- 177/07 . Pneumatic controls
- 177/08 . RR motion
- 177/09 . Scale bearings
- 177/10 . Telemetric
- 177/11 . Vibrators

**Motor vehicles**

- 180/00 Motor vehicles**
- 180/90 . Agricultural-type tractors
- 180/901 . Devices for traversing vertical surfaces
- 180/902 . Shock or vibration absorbing or transmitting means between wheel suspension and motor
- 180/903 . Airstream reactive vehicle or vehicle structure
- 180/904 . Traction dollies for aircraft
- 180/905 . Axles
- 180/906 . Adjustable axles
- 180/907 . Motorized wheelchairs
- 180/908 . Motor vehicles with short wheelbase

**Acoustics**

- 181/00 Acoustics**
- 181/40 . Wave coupling
- 181/401 . . Earth
- 181/402 . . Liquid
- 181/403 . Refrigerator compressor muffler
- 181/404 . Hobby craft engine muffler

**Motors: spring, weight, or animal powered**

- 185/00 Motors: spring, weight, or animal powered**
- 185/01 . Spring powered toys
- 185/02 . foreign digest

**Elevator, industrial lift truck, or stationary lift for vehicle**

- 187/00 Elevator, industrial lift truck, or stationary lift for vehicle**
- 187/90 . Temporary construction elevator for building
- 187/901 . Control modified for use by disabled individual
- 187/902 . Control for double-decker car

**Brakes**

- 188/00 Brakes**
- 188/01 . Panic braking
- 188/02 . Hill holder
- 188/03 . Progressive braking

**Trunks and hand-carried luggage**

- 190/00 Trunks and hand-carried luggage**
- 190/90 . Brief case type
- 190/901 . . Flat opening
- 190/902 . . with closure flap
- 190/903 . Zipper

**Clutches and power-stop control**

- 192/00 Clutches and power-stop control**
- 192/01 . Removable members
- 192/02 . Universal joint

**Conveyors, chutes, skids, guides, and ways**

- 193/00 Conveyors, chutes, skids, guides, and ways**
- 193/01 . Coin chute
- 193/02 . Indicators, safety devices and signals

**Check-actuated control mechanisms**

- 194/00 Check-actuated control mechanisms**
- 194/90 . Parking meter with barrier
- 194/901 . Check-operated toll booth
- 194/902 . Check-operated device for controlling parking lot
- 194/903 . Check-controlled turnstile
- 194/904 . Check-operated releaser for automobile service equipment
- 194/905 . Shopping cart return
- 194/906 . Video cassette vendor

**Conveyors: power-driven**

- 198/00 Conveyors: power-driven**
- 198/95 . Conveyor transverses wall aperture
- 198/951 . Turning cigarettes end-for-end
- 198/952 . Heating or cooling
- 198/953 . Coil spring untangling apparatus
- 198/954 . Overflow
- 198/955 . Air manifold
- 198/956 . Impact plates
- 198/957 . Conveyor material
- 198/958 . Load units counter
- 198/959 . Weighing

**Electricity: circuit makers and breakers**

- 200/00 Electricity: circuit makers and breakers**
- 200/02 . Body attached switches
- 200/03 . Coin operated
- 200/04 . High potential type insulation
- 200/05 . Fluid pressure: fluid amplifier
- 200/06 . Tie bar
- 200/07 . Molded drum
- 200/08 . Disturbance
- 200/09 . Momentum
- 200/10 . Curb, bumper and fender
- 200/11 . Web or thread actuated
- 200/12 . Burglar screens
- 200/13 . Shaft bearing and armature wear indicator switches
- 200/14 . Rail or leak indicator
- 200/15 . Bin alarm
- 200/16 . Gas detector
- 200/17 . Gas engine and motor vehicle
- 200/18 . Gravity
- 200/19 . Gyroscope
- 200/20 . Sound and vibration operated
- 200/21 . Pencil, counter or dispenser operated
- 200/22 . Strain relief, shear pin
- 200/23 . Game
- 200/24 . Plug holder
- 200/26 . Slack cable operated
- 200/27 . Thermal magnetic snap
- 200/28 . Thermal spring snap
- 200/29 . Ball
- 200/30 . Fluid conductor
- 200/31 . Fluid flow

- 200/32 . Speed responsive
- 200/33 . Speed synchronizing switch
- 200/34 . Recording and reproducing
- 200/35 . Weight operated tread/treadless switch
- 200/36 . Light operated switches
- 200/37 . Hose
- 200/38 . Money till drawer operated
- 200/39 . Motor vehicle-steering column
- 200/40 . Moisture
- 200/41 . Liquid contact
- 200/42 . Contact welding considerations
- 200/43 . Fluid-operated matrix switches
- 200/44 . Lubrication-periodic switches
- 200/46 . Separators and/or insulators for stacked leaf spring contacts
- 200/47 . Light guides for switch indicators, e.g. prisms, reflectors or cables

**Distillation: processes, thermolytic**

- 201/00 Distillation: processes, thermolytic**
- 201/42 . Particle size
- 201/43 . An extraneous, cyclically circulated, inert heating gas
- 201/44 . Plural distinct temperature stages
- 201/45 . Distillate treatment or conservation

**Distillation: apparatus**

- 202/00 Distillation: apparatus**
- 202/01 . Scale problems digest

**Distillation: processes, separatory**

- 203/00 Distillation: processes, separatory**
- 203/01 . Solar still
- 203/02 . Laboratory distillation
- 203/03 . Acrylonitrile
- 203/04 . Heat pump
- 203/05 . Human waste
- 203/06 . Reactor-distillation
- 203/07 . Start up or shut down
- 203/08 . Waste heat
- 203/09 . Plural feed
- 203/10 . Vinyl acetate
- 203/11 . Batch distillation
- 203/13 . Spirits
- 203/14 . Ejector-educator
- 203/16 . Combination
- 203/17 . Saline water conversion
- 203/18 . Control
- 203/19 . Sidestream
- 203/20 . Power plant
- 203/21 . Acrylic acid or ester
- 203/22 . Accessories
- 203/23 . Methanol
- 203/24 . Mobile, marine distiller
- 203/25 . Non-distilling bottoms treatment
- 203/90 . Particular type of heating

**Chemistry: electrical and wave energy**

- 204/00 Chemistry: electrical and wave energy**
- 204/03 . Auxiliary internally generated electrical energy

- 204/04 . Electrolysis cell combined with fuel cell
- 204/05 . Magnetic plus electrolytic
- 204/06 . Unusual non-204 uses of electrolysis
- 204/07 . Current distribution within the bath
- 204/08 . AC plus DC
- 204/09 . Wave forms
- 204/12 . Electrochemical machining
- 204/13 . Purification and treatment of electroplating baths and plating wastes
- 204/90 . Effecting a change in isomerization by wave energy
- 204/901 . Effecting a color change by wave energy
- 204/902 . Production of desired compound by wave energy in presence of a chemically designated nonreactant chemical treating agent, excluding water, chloroform, carbon tetrachloride, methylene chloride or benzene
- 204/903 . . Inorganic chemical treating agent
- 204/904 . . . Metal treating agent
- 204/905 . . . . Heavy metal agent
- 204/907 . . Silicon or boron treating agent
- 204/908 . . Phosphorus treating agent
- 204/909 . . Heavy metal treating agent
- 204/91 . . Sulfur treating agent
- 204/911 . . Nitrogen treating agent
- 204/912 . . Oxygen treating agent
- 204/913 . . . Peroxide agent
- 204/914 . . Only carbon, hydrogen or halogen atom in treating agent

**Electrolysis: processes, compositions used therein, and methods of preparing the compositions**

- 205/00 Electrolysis: processes, compositions used therein, and methods of preparing the compositions**
- 205/915 . Electrolytic deposition of semiconductor
- 205/916 . Sequential electrolytic and nonelectrolytic, or nonelectrolytic and electrolytic coating from the same bath
- 205/917 . Treatment of workpiece between coating steps
- 205/918 . Use of wave energy or electrical discharge during pretreatment of substrate or post-treatment of coating
- 205/919 . Waterproofing
- 205/92 . Electrolytic coating of circuit board or printed circuit, other than selected area coating
- 205/921 . Electrolytic coating of printing member, other than selected area coating
- 205/922 . Electrolytic coating of magnetic storage medium, other than selected area coating
- 205/923 . Solar collector or absorber
- 205/924 . Electrolytic coating substrate predominantly comprised of specified synthetic resin
- 205/925 . . Synthetic resin is electrically conductive
- 205/926 . . Polyamide or polyimide, e.g. nylon
- 205/927 . . Polyolefin, e.g. polyethylene, polypropylene
- 205/928 . . ABS copolymer

**Special receptacle or package**

- 206/00 Special receptacle or package**
- 206/80 . Chewing gum
- 206/802 . Shirred sausage casing
- 206/803 . Emergency, e.g. flare, first aid, survival pack
- 206/804 . with means to lift or draw out content

- 206/805 . Rubber band
- 206/806 . Suspension
- 206/807 . Tamper proof
- 206/809 . X-type
- 206/81 . Zipper, i.e. receptacle securement
- 206/811 . Waterproof
- 206/812 . Packaged towel
- 206/813 . Adhesive
- 206/814 . Space filler
- 206/815 . Finger opening
- 206/816 . Flexible closure, e.g. sliding desktop type
- 206/817 . Follower
- 206/818 . Magnet
- 206/819 . Material
- 206/82 . Separable, striplike plural articles
- 206/821 . Stacking member
- 206/822 . Special shape
- 206/823 . Cosmetic, toilet, powder puff
- 206/824 . Tear apertures for roll, strip, or sheet
- 206/825 . Recoil-type retainer
- 206/828 . Medicinal content
- 206/829 . Vacuum, or suction, cup adjunct
- 206/83 . Biscuit package
- 206/831 . Detachable coupon
- 206/832 . Semiconductor wafer boat
- 206/833 . . Apertured side walls

**Mineral oils: processes and products**

- 208/00 Mineral oils: processes and products**
- 208/01 . Automatic control
- 208/02 . Molecular sieve
- 208/95 . Processing of "fischer-tropsch" crude
- 208/951 . Solid feed treatment with a gas other than air, hydrogen or steam
- 208/952 . Solid feed treatment under supercritical conditions

**Classifying, separating, and assorting solids**

- 209/00 Classifying, separating, and assorting solids**
- 209/90 . Sorting flat-type mail
- 209/901 . Froth flotation; copper
- 209/902 . Froth flotation; phosphate
- 209/903 . Feeder conveyor having opposed grippers
- 209/904 . Feeder conveyor holding item by magnetic attraction
- 209/905 . Feeder conveyor holding item by suction
- 209/906 . Pneumatic or liquid stream feeding item
- 209/907 . Magnetic feeder
- 209/908 . Item fed by free fall
- 209/909 . Item holding feed magazine insertable in sorting apparatus
- 209/91 . Feed hopper
- 209/911 . Feed means supporting or guiding item moving under influence of gravity
- 209/912 . Endless feed conveyor with means for holding each item individually
- 209/913 . Screw feed conveyor
- 209/914 . Diverse sequential feeding steps
- 209/915 . Centrifugal feeder
- 209/916 . Reciprocating pusher feeding item
- 209/917 . Endless belt pusher feeding item
- 209/918 . Swinging or rotating pusher feeding item

- 209/919 . Rotary feed conveyor
- 209/92 . Vibratory feed conveyor
- 209/921 . Reciprocating or oscillating feed conveyor
- 209/922 . Miscellaneous feed conveyors
- 209/923 . Feed through including at least one endless conveyor
- 209/924 . Gravity conveyor moving item from separating station
- 209/925 . Driven or fluid conveyor moving item from separating station
- 209/926 . Silverware sorter
- 209/927 . Cop sorter
- 209/928 . Container closure sorter
- 209/929 . Fastener sorter
- 209/93 . Municipal solid waste sorting
- 209/931 . Materials of construction
- 209/932 . Fluid applied to items
- 209/933 . Accumulation receiving separated items
- 209/934 . Moving items to sorting means in spaced relation lengthwise of feed path
- 209/935 . Ambulant
- 209/936 . Plural items tested as group
- 209/937 . Laundry sorting
- 209/938 . Illuminating means facilitating visual inspection
- 209/939 . Video scanning
- 209/94 . Noncondition-responsive sorting by contour
- 209/941 . Item carrying bridge raisable to expose discharge opening
- 209/942 . Operator selects destination of item

**Liquid purification or separation**

- 210/00 Liquid purification or separation**
- 210/03 . Belt alignment
- 210/05 . Coalescer
- 210/06 . Dehydrators
- 210/07 . Drier blocks
- 210/08 . Fat fryer
- 210/09 . Floating cover
- 210/13 . Part flow-full flow
- 210/17 . Twist-on
- 210/90 . Ultra pure water, e.g. conductivity water
- 210/901 . Specified land fill feature, e.g. prevention of ground water fouling
- 210/902 . Materials removed
- 210/903 . . Nitrogenous
- 210/904 . . . -CN containing
- 210/905 . . . Protein
- 210/906 . . Phosphorus containing
- 210/907 . . . Phosphate slimes
- 210/908 . . Organic
- 210/909 . . . Aromatic compound, e.g. pcb, phenol
- 210/91 . . . Nonbiodegradable surfacant
- 210/911 . . Cumulative poison
- 210/912 . . . Heavy metal
- 210/913 . . . . Chromium
- 210/914 . . . . Mercury
- 210/915 . . Fluorine containing
- 210/916 . . Odor, e.g. including control or abatement
- 210/917 . . Color
- 210/918 . Miscellaneous specific techniques
- 210/919 . . using combined systems by merging parallel diverse waste systems



**Apparel apparatus****223/00 Apparel apparatus**

- 223/01 . Tie hanger
- 223/02 . Holders and clamps
- 223/03 . Reversible hanger
- 223/04 . Hooks

**Package and article carriers****224/00 Package and article carriers**

- 224/901 . Carrier component having adherent surface
- 224/9012 . . Loop and hook fastener
- 224/9014 . . . On strap
- 224/9016 . . . Closure fastener
- 224/9018 . . . Connection between support and article or receiver
- 224/902 . Battery carrier
- 224/903 . Holder for timepiece not carried on wrist
- 224/904 . Tool holder carried by belt
- 224/905 . Attaching means crossing back of pack animal
- 224/906 . Container formed of folded paperboard
- 224/907 . Rigid shield or pad positioned between article and bearer
- 224/908 . Carrier for camera or other photographic equipment
- 224/909 . Binocular carrier
- 224/91 . Carrier for musical instrument
- 224/911 . Handgun holder formed of leather, fabric, or other flexible material
- 224/912 . Handgun holder formed of metal or other rigid material
- 224/913 . Carrier for rifle or shotgun
- 224/914 . Carrier for handcuffs, blackjack, club, or other equipment carried by policeman
- 224/915 . Carrier for folded umbrella
- 224/916 . Carrier for bow or arrow
- 224/917 . Ski carrier
- 224/9175 . . Vehicle attached
- 224/918 . Carrier for golf tee or marker
- 224/919 . Ball carrier
- 224/92 . Carrier for fishing bait or lure, or fish carrier other than stringer
- 224/921 . Game carrier other than stringer
- 224/922 . Fishing rod holder
- 224/923 . Carrier with sleeping compartment
- 224/924 . Vehicle attached carrier for bicycle or motorcycle
- 224/925 . Carrier for grocery bag
- 224/926 . Vehicle attached carrier for beverage container or bottle
- 224/927 . Carrier for clothes hanger
- 224/928 . Trash receptacle
- 224/929 . Article carrier for electrical device
- 224/93 . . Attached to animate bearer
- 224/931 . Carrier for ammunition
- 224/932 . Carrier for towel or handkerchief
- 224/933 . Carrier for gloves
- 224/934 . Underwater carrier
- 224/935 . Carrier for cycle lock

**Elongated-member-driving apparatus****227/00 Elongated-member-driving apparatus**

- 227/901 . Surgical clip appliers

- 227/902 . Surgical clips or staples

**Metal fusion bonding****228/00 Metal fusion bonding**

- 228/901 . Process of bonding batteries
- 228/902 . using flame
- 228/903 . Metal to nonmetal
- 228/904 . Wire bonding

**Envelopes, wrappers, and paperboard boxes****229/00 Envelopes, wrappers, and paperboard boxes**

- 229/90 . including means to facilitate handling by a mechanical apparatus during manufacturing or filling
- 229/901 . Box structure alternatively useable as a container or a lid
- 229/902 . Box for prepared or processed food
- 229/903 . . Ovenable, i.e. disclosed to be placed in an oven
- 229/904 . . Compartmented fast food holder or lap tray
- 229/9041 . . Candy
- 229/905 . . Frozen food
- 229/906 . . Baked goods
- 229/9061 . Cup lid with means for forming a drinking opening
- 229/907 . Trash box
- 229/908 . Paint tray
- 229/909 . Cigar box
- 229/91 . Bucket or pail type, i.e. liquid proof container with handle
  - 229/911 . . with closure
  - 229/912 . . . Separate element
- 229/913 . Drawer-type
- 229/914 . Basket-type with handle
- 229/915 . Stacking feature
  - 229/9151 . . Gable-top box
  - 229/916 . . Means for ventilating while stacked
  - 229/917 . . Stacking of collapsed container or blank
  - 229/918 . . Corner construction
  - 229/919 . . Reinforced wall
- 229/92 . Stress relief
  - 229/921 . with mailing indicia
  - 229/922 . with decorative feature
- 229/923 . . Gift wrapped
- 229/924 . Means to facilitate gripping a tear strip
  - 229/925 . . Finger opening, e.g. slit, aperture
  - 229/926 . . Pull tab located in a seam
- 229/927 . Means for tearing or breaking rigid or semirigid thermoplastic container
- 229/928 . Expandable envelope
- 229/929 . Vented envelope
- 229/93 . Fold detail
  - 229/931 . . Fold includes slit or aperture
- 229/932 . Ice cream cone carrier
- 229/933 . Mating container blanks
  - 229/934 . . Compartmented bottle carrier
  - 229/935 . . No waste, i.e. edge-to-edge blanks
  - 229/936 . . Three or more blanks with alternating orientations
  - 229/937 . . Plural blanks for making a single container
- 229/938 . Sandwich holder
- 229/939 . Container made of corrugated paper or corrugated paperboard
- 229/94 . Container material with specified grain direction

- 229/941 . Box having joint structure for preventing leakage
- 229/942 . Nonreusable box having means to facilitate collapsing or disassembling for disposal or for recycling of the box material, e.g. "knockdown" type

**Selective cutting, e.g. punching**

- 234/00 Selective cutting, e.g. punching**
- 234/01 . Fluid and photoelectric control

**Registers**

- 235/00 Registers**
- 235/90 . Means to affix bar code, e.g. attaching, etching, coating, printing
- 235/901 . Bar code reader specialized to read code on a highly reflective surface

**Automatic temperature and humidity regulation**

- 236/00 Automatic temperature and humidity regulation**
- 236/01 . Adjustable lever
- 236/02 . Fail safe
- 236/03 . Safety electric
- 236/04 . Safety vacuum
- 236/05 . Fusible
- 236/06 . Clamp on
- 236/07 . Coil bulb
- 236/08 . Computer
- 236/09 . Fan control
- 236/10 . Filling
- 236/11 . Expandible fluid
- 236/12 . Heat conductor
- 236/13 . Humidithermostat
- 236/14 . intermittent control
- 236/15 . Photocell
- 236/16 . Relief spring
- 236/17 . Spring rate compensator
- 236/18 . Rubber
- 236/19 . Ventilated thermostat

**Heating systems**

- 237/00 Heating systems**
- 237/01 . Inert gas

**Railways: surface track**

- 238/00 Railways: surface track**
- 238/01 . Track structure assembled by gluing

**Fluid sprinkling, spraying, and diffusing**

- 239/00 Fluid sprinkling, spraying, and diffusing**
- 239/01 . Pattern sprinkler
- 239/02 . Scarfing torches
- 239/03 . Fluid amplifier
- 239/04 . O-ring
- 239/05 . Ball agitators
- 239/06 . Lawn mower
- 239/07 . Coanda
- 239/08 . Cutter sprayer
- 239/09 . Slide fastener
- 239/10 . Carbon dioxide bulb
- 239/11 . Magnets

- 239/12 . Flexible outlets
- 239/13 . Soot blowers and tube cleaners
- 239/14 . Paint sprayers
- 239/15 . Sprinkler systems with controls
- 239/17 . Low volume
- 239/19 . Nozzle materials
- 239/21 . Air blast
- 239/22 . Safety air nozzles
- 239/23 . Screens
- 239/90 . Electromagnetically actuated fuel injector having ball and seat type valve

**Solid material comminution or disintegration**

- 241/00 Solid material comminution or disintegration**
- 241/10 . Foundry sand treatment
- 241/14 . Grinding in inert, controlled atmosphere
- 241/17 . Ice crushers
- 241/27 . Pill or tablet crushers
- 241/30 . Rubber elements in mills
- 241/31 . Rubber preparation
- 241/37 . Cryogenic cooling
- 241/38 . Solid waste disposal
- 241/60 . Furnace stokers
- 241/601 . Sand mullers
- 241/602 . Soap dispensers
- 241/603 . Animal powered mill
- 241/604 . Plural inlets for diverse solid materials
- 241/605 . Hay unbaler
- 241/606 . Medical/surgical waste comminution

**Winding, tensioning, or guiding**

- 242/00 Winding, tensioning, or guiding**
- 242/01 . Tape program control means
- 242/02 . Narrow fabric winding apparatus
- 242/03 . Coreless coils
- 242/90 . Particular apparatus material
- 242/901 . Figure eight winding
- 242/902 . Line loader for fishing reel
- 242/903 . Drum for a winch or hoist
- 242/904 . Water ski reel
- 242/905 . Winder with storage chamber, e.g. for deodorant, paper
- 242/906 . Static charger or discharger
- 242/907 . Vibration creation or dampening
- 242/908 . Fluid treatment or handling
- 242/909 . Heating or cooling
- 242/91 . Convolution tightener or loosener
- 242/911 . Cutter
- 242/912 . Indicator or alarm
- 242/913 . Safety device
- 242/914 . Special bearing or lubrication
- 242/915 . Coil gripper
- 242/916 . Hand tool
- 242/917 . Accommodating special material or article, e.g. antenna
- 242/918 . . . Web material, e.g. thermal insulation
- 242/919 . . . . Ground cover, e.g. tarp
- 242/92 . Glass strand winding

**Railway switches and signals**

- 246/00 Railway switches and signals**

- 246/01 . Radiant energy devices
- 246/02 . Thermal sensing devices

**Supports**

**248/00**

**Supports**

- 248/90 . Movable or disengageable on impact or overload
- 248/901 . Support having temperature or pressure responsive feature
- 248/902 . Eyeglasses holder
- 248/903 . Support reinforcement
- 248/904 . Indicator mount
- 248/905 . Tissue dispenser mount
- 248/906 . Electrical outlet box support
- 248/907 . Trash container support
- 248/908 . Simulation of diverse device
- 248/909 . Frangible component, e.g. having a score line or groove
- 248/91 . Weighted base
- 248/911 . Plural, selectively usable, support engaging means
- 248/912 . Plural, selectively usable, article engaging means
- 248/913 . Two axis article engaging means, e.g. x - y device
- 248/914 . Handbag holder
- 248/915 . with ornamentation
- 248/916 . Mechanical expedients, e.g. in supports
- 248/917 . Video display screen support
- 248/918 . . Ancillary device support associated with a video display screen
- 248/919 . . Adjustably orientable video screen support
- 248/92 . . . Angular and linear video display screen support adjustment
- 248/921 . . . Plural angular
- 248/922 . . . Angular
- 248/923 . . . . Tilting
- 248/924 . . Adjustable size
- 248/925 . Mountain climbing aids, e.g. pitons etc.

**Static molds**

**249/00**

**Static molds**

- 249/01 . Cake pan
- 249/02 . Paper core
- 249/03 . Swimming pool
- 249/04 . Test mold
- 249/05 . Hot top

**Radiant energy**

**250/00**

**Radiant energy**

- 250/01 . Passive intrusion detectors
- 250/02 . Radon detection
- 250/90 . Optical liquid level sensors
- 250/901 . . with gap between light guide elements, includes open light path preset
- 250/902 . . . with closed light path preset
- 250/903 . . . . with prism contacting liquid
- 250/904 . . with single light guide element to guide light in a continuous path
- 250/905 . . . with longitudinal irregularity
- 250/906 . . . . with large scale longitudinal bend
- 250/907 . . . . with portions of light guide coating or cladding removed
- 250/908 . . . . with waveguide twisted about its longitudinal axis

- 250/909 . Methods and apparatus ancillary to stimulable phosphor systems
- 250/91 . Food sample analysis using invisible radiant energy source

**Valves and valve actuation**

**251/00**

**Valves and valve actuation**

- 251/90 . Valves with o-rings
- 251/901 . Curtain type valves
- 251/902 . Springs employed as valves
- 251/903 . Needle valves
- 251/904 . Snap fit plug valves
- 251/905 . Movable coil electrical actuator, e.g. voice coil

**Compositions**

**252/00**

**Compositions**

- 252/18 . Activation-platinum
- 252/95 . Doping agent source material
- 252/951 . . for vapor transport
- 252/96 . Surface flaw detecting compositions
- 252/961 . Stress or contact indicators
- 252/962 . Temperature or thermal history
- 252/963 . Humidity or moisture indicators
- 252/964 . Leak detection
- 252/965 . Retrospective product identification, e.g. tags and tracers

**Implements or apparatus for applying pushing or pulling force**

**254/00**

**Implements or apparatus for applying pushing or pulling force**

- 254/01 . Jack bases
- 254/02 . Electric screw jacks
- 254/03 . Jack handles
- 254/04 . Object engaging heads for jacks
- 254/05 . Means for depressing foot brake when adjusting same
- 254/06 . Flexible rack and pinion
- 254/07 . Printers form trucks
- 254/08 . Screw jacks, plural section nut
- 254/09 . Vehicle-operated lift platform
- 254/10 . Tire or rim expanding or contracting devices
- 254/11 . Cable drum feed for presser
- 254/12 . Pawls
- 254/13 . Vehicle retarding drums
- 254/14 . Rope attachment
- 254/15 . Motor clamps
- 254/16 . Automobile transmission jack
- 254/90 . Cable pulling drum having wave motion responsive actuator for operating drive or rotation retarding means
- 254/901 . Antifriction means for cable pulling drum
- 254/902 . Either drum, pulley wheel element, or cable constructed from specific material
- 254/903 . Yieldable, constant engagement, friction coupling, e.g. slip clutch in drive for cable pulling drum

**Fences**

**256/00**

**Fences**

- 256/01 . Compensator, spring
- 256/02 . Adjustable or falling fence
- 256/03 . Wire clamp

- 256/04 . Board fastener
- 256/05 . Metal post
- 256/06 . Building construction guard rail

#### Active solid-state devices, e.g. transistors, solid-state diodes

- 257/00 Active solid-state devices, e.g. transistors, solid-state diodes**
- 257/90 . MOSFET type gate sidewall insulating spacer
  - 257/901 . MOSFET substrate bias
  - 257/902 . FET with metal source region
  - 257/903 . FET configuration adapted for use as static memory cell
  - 257/904 . . with passive components,, e.g. polysilicon resistors
  - 257/905 . Plural dram cells share common contact or common trench
  - 257/906 . Dram with capacitor electrodes used for accessing, e.g. bit line is capacitor plate
  - 257/907 . Folded bit line dram configuration
  - 257/908 . Dram configuration with transistors and capacitors of pairs of cells along a straight line between adjacent bit lines
  - 257/909 . Macrocell arrays, e.g. gate arrays with variable size or configuration of cells
  - 257/91 . Diode arrays, e.g. diode read-only memory array
  - 257/911 . Light sensitive array adapted to be scanned by electron beam, e.g. vidicon device
  - 257/912 . Charge transfer device using both electron and hole signal carriers
  - 257/913 . with means to absorb or localize unwanted impurities or defects from semiconductors, e.g. heavy metal gettering
  - 257/914 . Polysilicon containing oxygen, nitrogen, or carbon, e.g. sipos
  - 257/915 . with titanium nitride portion or region
  - 257/916 . Narrow band gap semiconductor material,  $\ll 1\text{eV}$
  - 257/917 . Plural dopants of same conductivity type in same region
  - 257/918 . Light emitting regenerative switching device, e.g. light emitting scr arrays, circuitry
  - 257/919 . Elements of similar construction connected in series or parallel to average out manufacturing variations in characteristics
  - 257/92 . Conductor layers on different levels connected in parallel, e.g. to reduce resistance
  - 257/921 . Radiation hardened semiconductor device
  - 257/922 . with means to prevent inspection of or tampering with an integrated circuit, e.g. "smart card", anti-tamper
  - 257/923 . with means to optimize electrical conductor current carrying capacity, e.g. particular conductor aspect ratio
  - 257/924 . with passive device, e.g. capacitor, or battery, as integral part of housing or housing element, e.g. cap
  - 257/925 . Bridge rectifier module
  - 257/926 . Elongated lead extending axially through another elongated lead
  - 257/927 . Different doping levels in different parts of PN junction to produce shaped depletion layer
  - 257/928 . with shorted PN or schottky junction other than emitter junction

- 257/929 . PN junction isolated integrated circuit with isolation walls having minimum dopant concentration at intermediate depth in epitaxial layer, e.g. diffused from both surfaces of epitaxial layer
- 257/93 . Thermoelectric, e.g. peltier effect cooling

#### Chemistry of carbon compounds

- 260/00 Chemistry of carbon compounds**
- 260/14 . Soil treatment digest, polyelectrolytes
  - 260/15 . Antistatic agents not otherwise provided for
  - 260/16 . . Antistatic agents containing a metal, silicon, boron or phosphorus
  - 260/17 . . High polymeric, resinous, antistatic agents
  - 260/18 . . . High polymeric, resinous, antistatic agents containing pentavalent nitrogen
  - 260/19 . . Non-high polymeric antistatic agents/n
  - 260/20 . . . Antistatic agent contains pentavalent nitrogen
  - 260/21 . Polymer chemically or physically modified to impart antistatic properties and methods of antistatic agent addition
  - 260/22 . Concentration
  - 260/23 . Fiber
  - 260/24 . Flameproof
  - 260/25 . Metal catalyst
  - 260/26 . Multicolor
  - 260/27 . Nomenclature
  - 260/28 . Peroxide
  - 260/30 . Properties
  - 260/31 . Ionic cross-link
  - 260/32 . Incompatible blend
  - 260/33 . Molecular sieve
  - 260/34 . Hydantoin
  - 260/35 . Crystallization
  - 260/37 . Closure
  - 260/38 . Ink
  - 260/41 . Glass flake
  - 260/42 . Melts used in preparation of non-cyclic aliphatic chloro-, bromo- and iodo-hydrocarbons
  - 260/43 . Promoting degradability of polymers
  - 260/44 . Beta branched fatty acid
  - 260/45 . Polymer dispersions
  - 260/46 . Vibration dampening composition
  - 260/47 . Poisons, foods, or pharmaceuticals
  - 260/99811 . Dental
  - 260/99812 . Ablative
  - 260/99813 . Brake, friction or anti-skid
  - 260/99814 . Ball, bat, pin or billy
  - 260/99815 . Floor covering
  - 260/99816 . Sound record
  - 260/99817 . Pearlescent
  - 260/99818 . Mold or mold coating
  - 260/99819 . Road marking or pavement compositions, non-cementitious, non bituminous
  - 260/9982 . Dipeptides, e.g. aspartame, anserine or carnosine
  - 260/99821 . . Aspartylphenylalanone esters and cyclohexylalanine esters
  - 260/99822 . . Arginine containing

#### Gas and liquid contact apparatus

- 261/00 Gas and liquid contact apparatus**
- 261/01 . Auxiliary air inlet carburetors
  - 261/02 . Airplane

- 261/03 . Air cooling
- 261/04 . Auto humidifiers
- 261/06 . Backfire
- 261/07 . Carbonators
- 261/08 . Carburetor primers
- 261/09 . Furnace gas scrubbers
- 261/10 . Steam heaters and condensers
- 261/11 . Cooling towers
- 261/12 . Carburetor venturi
- 261/13 . Desuperheaters
- 261/14 . Display stands
- 261/15 . Duct humidifiers
- 261/16 . Cream whipping
- 261/17 . Odorizers
- 261/18 . Dashpots
- 261/19 . Degassers
- 261/20 . Deicers for carburetors
- 261/21 . Drawing excess fuel from carbureting passage
- 261/22 . Faucet aerators
- 261/23 . Fuel feeding valves
- 261/24 . Fuel feeding valve retaining
- 261/25 . Fuel spread out into a film
- 261/26 . Foam
- 261/27 . Gas circulated in circuit
- 261/28 . Blood oxygenators
- 261/29 . Heaters submerged in liquid
- 261/30 . Tray heaters
- 261/31 . Heaters
- 261/32 . Heaters and condensers
- 261/33 . Heaters, spray
- 261/34 . Automatic humidity regulation
- 261/35 . Air line lubricators
- 261/36 . Carburetor manifolds
- 261/37 . Modern pumps diaphragm
- 261/38 . Needle valves
- 261/39 . Liquid feeding nozzles
- 261/40 . Oil filter for fuel entering nozzles or float chamber
- 261/41 . Pad retaining means in humidifiers and air conditioners
- 261/42 . Ozonizers
- 261/43 . Air coolers
- 261/44 . Overflow trough
- 261/45 . Processes carburetors
- 261/46 . Residue prevention in humidifiers and air conditioners
- 261/47 . Swing diffusers
- 261/48 . Sonic vibrators
- 261/49 . Suction operated feed valve
- 261/50 . Surge prevention in carburetors
- 261/51 . Carburetors with supercharging blowers
- 261/52 . Carburetor with valves
- 261/53 . Valve actuation
- 261/54 . Venturi scrubbers
- 261/55 . Reatomizers
- 261/56 . Variable venturi
- 261/57 . Interchangeable choke tube
- 261/58 . Choke tube having plurality of leaves
- 261/59 . Choke tube leaves flexible
- 261/60 . Duplex barrels
- 261/61 . Longitudinally reciprocating choke tube along air passage

- 261/62 . Longitudinally reciprocating choke tube having movable parts
- 261/63 . Longitudinally reciprocating choke tube, throttle-operated
- 261/64 . Longitudinally reciprocating choke tube, suction-operated
- 261/65 . Vaporizers
- 261/66 . Water injection to prevent detonation
- 261/67 . Carburetors with vented bowl
- 261/68 . Diaphragm-controlled inlet valve
- 261/69 . Fluid amplifiers in carburetors
- 261/70 . Sewage aerators; diffusers
- 261/71 . Sewage aerators; rotating
- 261/72 . Packing elements
- 261/73 . Carburetor primers; ticklers
- 261/74 . Valve actuation; electrical
- 261/75 . Flowing liquid aspirates gas
- 261/76 . Steam
- 261/77 . Plume abatement
- 261/78 . Sonic flow
- 261/79 . Cooling ponds
- 261/80 . Electrical treatment
- 261/81 . Percolation control
- 261/82 . Upper end injectors
- 261/83 . Fuel vapor generation
- 261/84 . Tamperproof
- 261/85 . Droplet catchers
- 261/86 . Cooling tower ice prevention
- 261/87 . Cooling tower power generators
- 261/88 . Aroma dispensers
- 261/89 . . Electrically heated aroma dispensers

#### **Plastic and nonmetallic article shaping or treating: processes**

- 264/00 Plastic and nonmetallic article shaping or treating: processes**
- 264/01 . Methods of blow-molding cellular containers
- 264/02 . Molding cellular aldehyde resins
- 264/03 . Molding cellular pvc-isocyanate resins
- 264/04 . Molding and forming bendable and flexible product from rigid preform
- 264/05 . Use of one or more blowing agents together
- 264/06 . Molding microballoons and binder
- 264/07 . Binding and molding cellular particles
- 264/08 . Fibrillating cellular materials
- 264/09 . Pre-expansion of foamed polystyrene
- 264/10 . Foamed polystyrene mold filling
- 264/11 . Molding styropor using steam probes-batch
- 264/12 . Molding styropor using steam probes continuous
- 264/13 . Cell size and distribution control while molding a foam
- 264/14 . forming integral skin on a foamed product
- 264/15 . Aging of foamed resin products
- 264/16 . Molding foamed polypropylen articles
- 264/17 . Molding a foam containing a filler
- 264/18 . Cross-linking a thermoplastic linear foam during molding
- 264/19 . Inorganic fiber
- 264/20 . Tar bonded
- 264/25 . Metallic oxide
- 264/26 . Composite fibers made of two or more materials
- 264/27 . Process of spinning viscose where viscose has high degree of polymerization

- 264/28 . Stretching filaments in gas or steam
- 264/29 . Mixed resin filaments
- 264/30 . Use of anatomy in making a mold or using said mold
- 264/31 . Processes of making tile and tile-like surfaces
- 264/32 . Processes in molding using asbestos or asphalt
- 264/33 . Blow-molding articles of nonuniform thickness
- 264/34 . Processes and molds for making buttons
- 264/35 . Use of CaO with refractories
- 264/36 . Processes of making metal-ceramics
- 264/37 . Processes and molds for making capsules
- 264/38 . Making film or tubes from casein
- 264/39 . Treatment of clay before and after molding
- 264/40 . Processes of coiling plastics
- 264/41 . Processes of molding collapsible tubes
- 264/42 . Processes of molding involving cross linking
- 264/43 . Processes of curing clay and concrete materials
- 264/44 . using destructible molds or cores in molding processes
- 264/45 . Molding using an electrical force
- 264/46 . Molding using an electrical heat
- 264/47 . Processes of splitting film, webs or sheets
- 264/48 . Processes of making filters
- 264/49 . Processes of using fly ash
- 264/50 . Use of fluid pressure in molding
- 264/51 . Use of fluidized bed in molding
- 264/52 . Processes of making corrugated tubes for gas mask
- 264/53 . Processes of using glass filter in molding process
- 264/54 . Processes in making insulators
- 264/55 . Processes for making jewelry
- 264/56 . Processes of molding lactams
- 264/57 . Processes of forming layered products
- 264/58 . Processes of forming magnets
- 264/59 . Processes in which a partial cure is involved
- 264/60 . Processes of molding plastisols
- 264/61 . Processes of molding polyamide
- 264/62 . Processes of molding porous films
- 264/63 . Processes of molding porous blocks
- 264/64 . Processes of using preform in molding
- 264/65 . Processes of preheating prior to molding
- 264/66 . Processes of reshaping and reforming
- 264/67 . forming ring-like structure
- 264/68 . Roll
- 264/70 . Processes for forming screens or perforating articles
- 264/71 . Processes of shaping by shrinking
- 264/72 . Processes of molding by spraying
- 264/73 . Processes of stretching
- 264/74 . Processes of repairing tires
- 264/75 . Processes of uniting two or more fibers
- 264/76 . Processes of uniting two or more parts
- 264/77 . Processes of molding urethanes
- 264/78 . Processes of molding using vacuum
- 264/79 . Processes of molding articles of vinylidene chloride
- 264/80 . Processes of waterproofing
- 264/81 . Plastic net
- 264/82 . Embossing by foaming
- 264/83 . Injection molding of polyolefin-type foam
- 264/84 . Conversion of foamed resinous buns into foamed billets having geo metrical crosssections
- 264/90 . Direct application of fluid pressure differential to shape, reshape, i.e. distort, or sustain an article or preform and heat-setting, i.e. crystallizing of stretched or molecularly oriented portion thereof
- 264/901 . . Heat-setting of stretched or molecularly oriented article formed from planar preform, e.g. sheet, film
- 264/902 . . Production of continuous length
- 264/903 . . Heat-setting and simultaneous differential heating of stretched or molecularly oriented section of article or preform
- 264/904 . . Maintaining article in fixed shape during heat-setting
- 264/905 . . having plural, distinct differential fluid pressure shaping steps
- 264/906 . . . And heat-shrinking outside of mold including subsequent re-expanding of shrunken article using differential fluid pressure
- 264/907 . Direct application of fluid pressure differential to shape, reshape, i.e. distort, or sustain an article or preform and crystallizing of nonstretched or molecularly unoriented portion thereof
- 264/908 . . Crystallizing of neck portion of hollow article or hollow preform
- 264/909 . Direct application of fluid pressure differential to stretch an article or preform and heat shrinking of stretched article or preform
- 264/91 . Sintering to produce translucent inorganic article
- 264/911 . Recycling consumer used articles or products
- 264/912 . . From toroidal shapes, e.g. resilient tires
- 264/913 . . From fiber or filament, or fiber or filament containing article or product, e.g. textile, cloth fabric, carpet, fiberboard
- 264/914 . . . From cellulose containing articles, e.g. paper
- 264/915 . . From inorganic material containing articles or products, e.g. hydro-set, cement, plaster, wire, cable
- 264/916 . . From porous material containing articles, e.g. sponge, foam
- 264/917 . . by blow molding material recycled from consumer used article or product
- 264/918 . . From hollow- or container-type articles, e.g. tubes, bottles, cups
- 264/919 . . . From pipe or tube, e.g. hose
- 264/92 . . by extruding material recycled from consumer used article or product
- 264/921 . . by injection molding material recycled from consumer used article or product

**Metallurgical apparatus****266/00****Metallurgical apparatus**

- 266/01 . Repair or restoration of apparatus
- 266/90 . Metal melting furnaces, e.g. cupola type
- 266/901 . Scrap metal preheating or melting
- 266/902 . Blowpipes specialized to transversely cut or notch blooms, billets or bars
- 266/903 . Safety shields
- 266/904 . Blowpipe cutting heads
- 266/905 . Refractory metal-extracting means

**Spring devices****267/00****Spring devices**

- 267/01 . Constant height

- 267/02 . Constant height, self-pumping
- 267/03 . Spring buckle

**Work holders**

- 269/00 Work holders**
- 269/90 . Supporting structure having work holder receiving apertures or projections
- 269/901 . Collapsible or foldable work holder supporting structure
- 269/902 . Work holder member with v-shaped notch or groove
- 269/903 . Work holder for electrical circuit assemblages or wiring systems
- 269/904 . Work holder for positioning elements of building in installed location
- 269/905 . Work holder for doors and door frames
- 269/906 . Work holder for skis
- 269/907 . Work holder for fishing flies
- 269/908 . Work holder for cathode-ray tubes
- 269/909 . Work holder for specific work
- 269/91 . Work holder for prefabricated roof truss or wall frame

**Sheet feeding or delivering**

- 271/00 Sheet feeding or delivering**
- 271/90 . Stripper
- 271/901 . Magnetic operation
- 271/902 . Reverse direction of sheet movement
- 271/903 . Traveling wicket for stack on edge

**Amusement devices: games**

- 273/00 Amusement devices: games**
- 273/01 . Carbonate
- 273/02 . Styrene
- 273/03 . Epoxy
- 273/04 . Ethylene
- 273/05 . Vinyl
- 273/06 . Nylon
- 273/07 . Glass fiber
- 273/08 . Urethane
- 273/09 . Ester
- 273/10 . Butadiene
- 273/11 . Acetal
- 273/12 . Propylene
- 273/13 . Artificial grass
- 273/14 . Transparent
- 273/15 . Cork
- 273/16 . Acrylic
- 273/17 . Head mounted
- 273/18 . Shoe mounted
- 273/19 . Waist mounted
- 273/20 . Weighted balls
- 273/21 . Reel
- 273/22 . Ionomer
- 273/23 . High modulus filaments
- 273/24 . Luminescent, phosphorescent
- 273/25 . Suction cups involved
- 273/26 . Point counters and score indicators
- 273/27 . Blind and color blind
- 273/29 . Silicone
- 273/30 . Hooked pile fabric fastener

- 273/31 . Undulated surface

**Seal for a joint or juncture**

- 277/00 Seal for a joint or juncture**
- 277/902 . Seal for sterling engine
- 277/903 . Seal for rotating kiln or drum
- 277/904 . Viscous seal
- 277/905 . T-Shaped or I-shaped ring member including seal on a side
- 277/906 . Seal for article of indefinite length, e.g. strip, sheet
- 277/907 . Passageway in rod or shaft
- 277/908 . Seal for use in rotating and reciprocating arrangement
- 277/909 . Similar sealing structures for mounting on piston and about rod
- 277/91 . O-ring seal
- 277/911 . Seal combined with nominal motion transmitting device
- 277/912 . . Spline connection
- 277/913 . Seal for fluid pressure below atmospheric, e.g. vacuum
- 277/914 . Backup seal for failure of primary seal
- 277/915 . Seal including compression set feature
- 277/916 . Seal including vibration dampening feature
- 277/917 . Seal including frangible feature
- 277/918 . Seal combined with filter or fluid separator
- 277/919 . Seal including electrical feature
- 277/92 . Seal including electromagnetic shielding feature
- 277/921 . Closure or weather strip seal
- 277/922 . Bonding or joining for manufacture of seal
- 277/923 . . Shrink-fitting for the assembly of seal
- 277/924 . Deformation, material removal, or molding for manufacture of seal
- 277/925 . Snap fit feature for mounting or assembly of seal
- 277/926 . Seal including fluid pressure equalizing or balancing feature
- 277/927 . Seal including fluid pressure differential feature
- 277/928 . Seal including pressure relief or vent feature
- 277/929 . Seal feature where change in operation or condition induces additional leakage control
- 277/93 . Seal including heating or cooling feature
- 277/931 . Seal including temperature responsive feature
- 277/932 . . Bi-metallic
- 277/933 . . Chemical reaction or physical change of state
- 277/934 . Seal swells when wet
- 277/935 . Seal made of a particular material
- 277/936 . . Composite
- 277/937 . . . Glass particles or filament
- 277/938 . . . Carbon or graphite particle or filament
- 277/939 . . Containing metal
- 277/94 . . . Alloy
- 277/941 . . . Aluminum or copper
- 277/942 . . . Silver or gold
- 277/943 . . Ceramic or glass
- 277/944 . . Elastomer or plastic
- 277/945 . . . Containing fluorine
- 277/946 . . . . PTFE

**Chucks or sockets**

- 279/00 Chucks or sockets**
- 279/90 . Adapted for automatic tool changer

- 279/901 . Chuck or chuck jaw changing means
- 279/902 . Keyless type socket
- 279/903 . Needle roller type socket
- 279/904 . Quick change socket
- 279/905 . . with ball detent
- 279/906 . Self grasping socket
- 279/907 . Washer type jaw or actuator

**Land vehicles**

- 280/00 Land vehicles**
- 280/01 . Load responsive, leveling of vehicle
- 280/02 . Wheel supports for outboard motors
- 280/03 . Wheeled shopping bag
- 280/04 . Grocery store cart
- 280/05 . Motorized golf carts
- 280/06 . Wheeled golf club carriers
- 280/07 . Air bag rollers
- 280/08 . Separable body or container-type semitrailers
- 280/09 . Occupant-steered trailers
- 280/10 . Stair climbing chairs
- 280/11 . Walking attendant steered trailers
- 280/12 . Clamp-type ski bindings having plural diverse axes or clamps
- 280/13 . Ski binding controlled by skier position or by remote control
- 280/14 . Tractor-trailer backing connections
- 280/90 . Runner vehicle attachments
- 280/901 . Adaptation of nonspecialized vehicles to semitrailer tractors

**Books, strips, and leaves**

- 281/00 Books, strips, and leaves**
- 281/01 . Magnet

**Printed matter**

- 283/00 Printed matter**
- 283/90 . Medical record
- 283/901 . Concealed data
- 283/902 . Anti-photocopy
- 283/903 . Lottery ticket
- 283/904 . Credit card

**Pipe joints or couplings**

- 285/00 Pipe joints or couplings**
- 285/90 . Balanced pressure
- 285/901 . Cap closures
- 285/902 . Canted ring
- 285/903 . Corrugated
- 285/904 . Cryogenic
- 285/905 . Different coefficients of expansion
- 285/906 . Equivalents
- 285/907 . Electrical fixtures
- 285/908 . Extrusion holes
- 285/909 . Fluorocarbons and memory plastics
- 285/91 . Gaskets
- 285/911 . Glass
- 285/912 . Gear
- 285/913 . Interdigitating
- 285/914 . Irreversible
- 285/915 . Mastic

- 285/916 . Molecular change
- 285/917 . Metallic seals
- 285/918 . O-ring
- 285/919 . Resinous
- 285/92 . Remotely controlled
- 285/921 . Snap-fit
- 285/922 . Safety and quick release for drill pipes
- 285/923 . Specific material
- 285/924 . Vented
- 285/925 . Swells when wet

**Closure fasteners**

- 292/00 Closure fasteners**
- 292/01 . Automobile fender shield fasteners
- 292/02 . Auxiliary knob slip covers, guards
- 292/03 . Automobile multiple door latches
- 292/04 . Automatic release latches
- 292/05 . Automobile top latches
- 292/06 . Automobile window wing fasteners
- 292/07 . Disc cam; also swinging windows, locking and operating means
- 292/08 . Buffer handles
- 292/09 . Hinge plate fasteners secured to upper sash
- 292/10 . Cupped disc fasteners
- 292/11 . Cover fasteners
- 292/12 . Closure operators
- 292/13 . Cow proof latches
- 292/14 . Hood latches
- 292/15 . Door, checks, floor
- 292/16 . Flexible bolts
- 292/17 . Hinge edge latches
- 292/18 . Gang locks
- 292/19 . Combined door holder and buffer
- 292/20 . Window fasteners
- 292/21 . Individually latched double doors
- 292/22 . Inertia operated
- 292/23 . Vehicle door latches
- 292/24 . Dogging mechanism from inside operating means
- 292/25 . Remote control
- 292/26 . Automatic undogging or reconnecting
- 292/27 . Disconnectable handle
- 292/28 . Suction cup fasteners
- 292/29 . End gate fasteners
- 292/30 . Latch and handle
- 292/31 . Lever operator, flush
- 292/32 . Freight car door fasteners
- 292/33 . Metallic casement window fasteners
- 292/34 . Non-refillable container cover fasteners
- 292/35 . Storm sash fasteners
- 292/36 . Overhead door latches
- 292/37 . Push button operators
- 292/38 . Plastic latch parts
- 292/39 . Dovetail door aligner
- 292/40 . Combined dovetail and keeper
- 292/41 . Door latch separation prevention
- 292/42 . Trunk latches
- 292/43 . Rear deck lid latches
- 292/44 . Extensible bolts
- 292/45 . Slot closure
- 292/46 . Sliding door fasteners
- 292/47 . Sash fasteners

- 292/48 . Traveling bag frame and camera cover fasteners
- 292/49 . Toggle catches
- 292/50 . Handbag or purse clasps
- 292/51 . Bolt guides
- 292/52 . Rollbacks
- 292/53 . Mounting and attachment
- 292/54 . Attachments and adjuncts
- 292/55 . Bolt and keeper aligners
- 292/56 . Silencers
- 292/57 . Anti-friction provisions
- 292/58 . Lubrication
- 292/59 . insulation, heat and electrical
- 292/60 . Adjustment provisions
- 292/61 . Spring devices
- 292/62 . Lost motion connections
- 292/63 . Finger or hand grip
- 292/64 . Assembly
- 292/65 . Emergency or safety
- 292/66 . Thermally controlled mechanism
- 292/67 . Vehicle door latches free of sash or pane
- 292/68 . Locker latches
- 292/69 . Washing machine or stove closure latch
- 292/70 . Weather strip and sash fastener combined
- 292/71 . Refrigerator latches
- 292/72 . Starters
- 292/73 . Anti-rattlers

**Vehicle fenders**

- 293/00 Vehicle fenders**
- 293/01 . Pusher attachment for tractors
- 293/06 . Magnetic fender securing devices

**Handling: hand and hoist-line implements**

- 294/00 Handling: hand and hoist-line implements**
- 294/901 . Plate lifting clamp
- 294/902 . Gripping element
- 294/903 . Battery carrier
- 294/904 . Vehicle carrier
- 294/905 . Wireless remote control device
- 294/906 . Atomic fuel handler
- 294/907 . Sensor controlled device

**Land vehicles: bodies and tops**

- 296/00 Land vehicles: bodies and tops**
- 296/90 . Material
- 296/90101 . . Plastic

**Chairs and seats**

- 297/00 Chairs and seats**
- 297/01 . Foam
- 297/02 . Molded
- 297/03 . Pneumatic
- 297/04 . Wheelchair
- 297/05 . Fireproof
- 297/06 . Hook and loop type fastener
- 297/07 . Rocker/recliner
- 297/08 . Inflatable bellows
- 297/10 . Occupant-arising assist
- 297/11 . Baby bouncer

- 297/90 . Chair for suntanning in the prone, i.e. facedown position

**Fluid-pressure and analogous brake systems**

- 303/00 Fluid-pressure and analogous brake systems**
- 303/01 . Pressure comparison
- 303/02 . Brake control by pressure comparison
- 303/03 . . Electrical pressure sensor
- 303/04 . . . Pressure signal used in electrical speed controlled braking circuit
- 303/05 . Acceleration peak detection
- 303/06 . Axle differential control
- 303/07 . Small tire digest
- 303/08 . Antichatter
- 303/09 . Plural processors
- 303/10 . Valve block integrating pump, valves, solenoid, accumulator
- 303/11 . Accumulator
- 303/12 . Air over hydraulic brake system
- 303/90 . ABS throttle control
- 303/901 . ABS check valve detail

**Wheel substitutes for land vehicles**

- 305/00 Wheel substitutes for land vehicles**
- 305/90 . Master link

**Electrical transmission or interconnection systems**

- 307/00 Electrical transmission or interconnection systems**
- 307/01 . Data transmitted over power lines

**Electrical generator or motor structure**

- 310/00 Electrical generator or motor structure**
- 310/02 . Hysteresis rotors and motors
- 310/03 . Hall effect generators and converters
- 310/06 . Printed-circuit motors and components
- 310/80 . Piezoelectric polymers, e.g. PVDF

**Supports: cabinet structure**

- 312/00 Supports: cabinet structure**
- 312/901 . Fan-out holders for recording media
- 312/902 . Carrying case

**Electric lamp and discharge devices**

- 313/00 Electric lamp and discharge devices**
- 313/07 . Bombardment induced conductivity

**Electric lamp and discharge devices: systems**

- 315/00 Electric lamp and discharge devices: systems**
- 315/01 . Fluorescent lamp circuits with more than two principle electrodes
- 315/02 . High frequency starting operation for fluorescent lamp
- 315/03 . Circuit for ion gauges and pressure gauges
- 315/04 . Dimming circuit for fluorescent lamps
- 315/05 . Starting and operating circuit for fluorescent lamp
- 315/07 . Starting and control circuits for gas discharge lamp using transistors

**Electricity: motive power systems**

- 318/00 Electricity: motive power systems**

- 318/02 . Windshield wiper controls

**Electricity: battery or capacitor charging or discharging**

- 320/00 Electricity: battery or capacitor charging or discharging**
- 320/10 . Nonbattery load controls charging
- 320/11 . Prioritized supply of power or power supply compensation
- 320/12 . Precharging analysis, e.g. determining presence of battery
- 320/13 . Fault detection
- 320/14 . Battery acts as buffer
- 320/15 . Polarity control
- 320/16 . Removal of memory effect in batteries
- 320/17 . Sensing of "gassing" voltage
- 320/18 . Indicator or display
- 320/19 . . Charger status, e.g. voltmeter
- 320/20 . . Polarity
- 320/21 . . State of charge of battery
- 320/22 . Line impedance, e.g. resistor
- 320/23 . . Capacitor
- 320/24 . . Inductor
- 320/25 . Optical coupler
- 320/26 . Button or hearing aid type
- 320/27 . Transformerless
- 320/28 . Regulating transformer, e.g. high leakage, ferro-resonant
- 320/29 . Transformer having plural secondaries
- 320/30 . Plural transformers
- 320/31 . Plural rectifier systems
- 320/32 . Voltage divider having diverse elements other than merely plural resistors
- 320/33 . Aircraft or spacecraft application
- 320/34 . Robot, hybrid, recreational or emergency vehicle
- 320/35 . Home power station
- 320/36 . Distribution system, e.g. railroad lighting

**Electricity: single generator systems**

- 322/00 Electricity: single generator systems**
- 322/02 . Generator field current-responsive systems
- 322/05 . Hall effects elements
- 322/06 . Ripple sensitive

**Electricity: power supply or regulation systems**

- 323/00 Electricity: power supply or regulation systems**
- 323/901 . Starting circuits
- 323/902 . Optical coupling to semiconductor
- 323/903 . Precipitators
- 323/904 . Touch systems
- 323/905 . Lamp dimmer structure
- 323/906 . Solar cell systems
- 323/907 . Temperature compensation of semiconductor
- 323/908 . Inrush current limiters
- 323/909 . Remote sensing
- 323/91 . Two of three phases regulated
- 323/911 . Medical electronics

**Electricity: measuring and testing**

- 324/00 Electricity: measuring and testing**
- 324/80 . Divining rods

**Oscillators**

- 331/00 Oscillators**
- 331/02 . Phase locked loop having lock indicating or detecting means
- 331/03 . Logic gate active element oscillator

**Inductor devices**

- 336/00 Inductor devices**
- 336/01 . Superconductive
- 336/02 . Separable

**Electrical resistors**

- 338/00 Electrical resistors**
- 338/01 . Worm gear drive

**Communications: radio wave antennas**

- 343/00 Communications: radio wave antennas**
- 343/01 . with vibration damper or wind catcher
- 343/02 . Satellite-mounted antenna

**Computer graphics processing and selective visual display systems**

- 345/00 Computer graphics processing and selective visual display systems**
- 345/901 . Electronic book with display
- 345/902 . Menu display
- 345/903 . Modular display
- 345/904 . Display with fail/safe testing feature
- 345/905 . Display device with housing structure
- 345/947 . Font character edge processing
- 345/948 . Alteration of stored fonts to maintain feature consistency throughout scaled font
- 345/949 . Animation processing method
- 345/95 . . Sprite processing
- 345/951 . . . Key frame processing
- 345/952 . . Simulation
- 345/953 . . Geometric processing
- 345/954 . . . Quaternions
- 345/955 . . Morphing
- 345/956 . . Language driven animation
- 345/957 . . . Actor
- 345/958 . . Collision avoidance
- 345/959 . . Object path adherence
- 345/96 . . Iterative display of preconfigured images

**Incremental printing of symbolic information**

- 347/00 Incremental printing of symbolic information**
- 347/90 . Data processing for electrostatic recording

**Television**

- 348/00 Television**
- 348/901 . High speed television system
- 348/902 . Photochromic
- 348/903 . including side panel information in single channel
- 348/904 . Separation or joining of side and center panels
- 348/905 . Reproduction of a color field or frame
- 348/908 . Convertible circuits, e.g. y/c separation or noise reduction
- 348/909 . Noise responsive signal processing
- 348/91 . Flicker reduction

- 348/911 . Line doubler adapted for reproducing program originally from film, e.g. 24 frame per second
- 348/912 . Differential amplitude consideration, e.g. amplitude vs. frequency
- 348/913 . Letterbox, e.g. display 16:9 aspect ratio image on 4:3 screen
- 348/914 . Delay for equalization

**Optics: image projectors****353/00 Optics: image projectors**

- 353/01 . Slides stacked with surface to surface contact
- 353/02 . Film strip
- 353/03 . Transparent
- 353/04 . Opaque
- 353/05 . Transparency holder accessories
- 353/06 . Head accessories

**Facsimile and static presentation processing****358/00 Facsimile and static presentation processing**

- 358/9011 . Fiber optics
- 358/906 . Hand-held camera with recorder in a single unit
- 358/907 . Track skippers, i.e. "groove skippers"
- 358/908 . Pause control, i.e. "commercial killers"
- 358/9091 . Electronic still camera or scene reproducer

**Optical: systems and elements****359/00 Optical: systems and elements**

- 359/90 . Methods
- 359/901 . Acoustic holography
- 359/902 . Holographic interferometer
- 359/903 . with magnet
- 359/904 . Micromirror

**Dynamic magnetic information storage or retrieval****360/00 Dynamic magnetic information storage or retrieval**

- 360/90 . Disk drive packaging
- 360/901 . . Access time
- 360/902 . . Storage density, e.g. bpi, tpi
- 360/903 . . Physical parameter, e.g. form factor
- 360/904 . . . Weight

**Illumination****362/00 Illumination**

- 362/80 . Light emitting diode
- 362/801 . Bedroom lighting, e.g. modular combinations
- 362/802 . Position or condition responsive switch
- 362/803 . Photo safe lamp
- 362/804 . Surgical or dental spotlight
- 362/805 . Horticultural
- 362/806 . Ornamental or decorative
- 362/807 . . Star
- 362/808 . . Figure
- 362/809 . . . Terrestrial globe
- 362/81 . . Imitation candle
- 362/811 . . Psychedelic lighting
- 362/812 . Signs

**Agitating****366/00 Agitating**

- 366/01 . Micromixers: continuous laminar flow with laminar boundary mixing in the linear direction parallel to the fluid propagation with or without conduit geometry influences from the pathway
- 366/02 . Micromixers: segmented laminar flow with boundary mixing orthogonal to the direction of fluid propagation with or without geometry influences from the pathway
- 366/03 . Micromixers: variable geometry from the pathway influences mixing/agitation of non-laminar fluid flow
- 366/04 . Micromixers: with application of energy to influence mixing/agitation, e.g. magnetic, electrical, e-m radiation, particulate radiation, or ultrasound
- 366/60 . Bodine vibrator
- 366/601 . Motor control
- 366/602 . Amalgam mixer, e.g. dental filling
- 366/603 . Animal food mixer
- 366/604 . Lather maker
- 366/605 . Paint mixer
- 366/606 . Tractor-mounted mortar mixing chamber
- 366/607 . Chain-type stirrer
- 366/608 . Stirrer in mixing chamber side wall

**Communications, electrical: acoustic wave systems and devices****367/00****Communications, electrical: acoustic wave systems and devices**

- 367/90 . Sonar time varied gain control systems
- 367/901 . Noise or unwanted signal reduction in nonseismic receiving system
- 367/902 . Speed of sound compensation
- 367/903 . Transmit-receive circuitry
- 367/904 . Doppler compensation systems
- 367/905 . Side lobe reduction or shading
- 367/906 . Airborne shock-wave detection
- 367/907 . Coordinate determination
- 367/908 . Material level detection, e.g. liquid level
- 367/909 . Collision avoidance
- 367/91 . Portable sonar devices
- 367/911 . Particular well-logging apparatus
- 367/912 . . Particular transducer

**Multiplex communications****370/00****Multiplex communications**

- 370/901 . Wide area network
- 370/902 . . Packet switching
- 370/903 . . . Osi compliant network
- 370/904 . . . . Integrated Services Digital Network, ISDN
- 370/905 . . . . Asynchronous transfer mode, ASN
- 370/906 . . . . Fiber data distribution interface, FDDI
- 370/907 . . . . Synchronous optical network, SONET
- 370/908 . Local area network
- 370/909 . . Token ring
- 370/91 . . Carrier sense multiple access, e.g. ethernet, 10base-t
- 370/911 . . Bridge, e.g. brouter, bus extender
- 370/912 . Packet communications
- 370/913 . . Wireless or radio
- 370/914 . Rate converter
- 370/915 . Time division cellular radio systems
- 370/916 . Multiplexer/demultiplexer

**Coherent light generators****372/00 Coherent light generators**

- 372/70 . Optical delay
- 372/701 . Nozzle
- 372/702 . Isotope
- 372/703 . Optical isolater
- 372/704 . Summary reference
- 372/705 . Neat thing

**Induced nuclear reactions: processes, systems, and elements****376/00 Induced nuclear reactions: processes, systems, and elements**

- 376/90 . Particular material or material shapes for fission reactors
  - 376/901 . . Fuel
  - 376/902 . . . with external lubricating or absorbing material
  - 376/903 . . . Shapes
    - 376/904 . . Moderator, reflector, or coolant materials
    - 376/905 . . . Organic
    - 376/906 . . . Metal
    - 376/907 . . . Dissociative coolants
  - 376/908 . Reactor geometry, or part thereof, defined in terms of numerical values
    - 376/909 . Mobile reactors
    - 376/91 . Rotating reactors
    - 376/911 . Plural reactor systems
    - 376/912 . Nuclear reactor systems situated in the ocean
    - 376/913 . Antimatter devices and methods
    - 376/914 . Nuclear explosives
    - 376/915 . Fusion reactor fuels
    - 376/916 . Methods of making fusion fuel targets
    - 376/917 . Utilizing different fuels or fuels in different forms, in different reactor regions in relation to amounts of heat produced in said regions
    - 376/918 . Entire reactor core of single integral structure

**X-ray or gamma ray systems or devices****378/00 X-ray or gamma ray systems or devices**

- 378/901 . Computer tomography program or processor

**Telephonic communications****379/00 Telephonic communications**

- 379/90 . Internet, e.g. Internet phone, webphone, internet-based telephony
  - 379/901 . Virtual networks or virtual private networks
  - 379/902 . Auto-switch for an incoming voice data, or fax telephone call, e.g. comp/fax/tel
  - 379/903 . Password
  - 379/904 . Auto-calling
  - 379/905 . Fax mail
  - 379/906 . Touchtone message transmission
  - 379/907 . Speech recognition via telephone system or component
    - 379/908 . Multimedia
    - 379/909 . Alternatives
    - 379/91 . Bar code or optical character reader with telephone
    - 379/911 . Distinctive ringing
    - 379/912 . Geographically adaptive
    - 379/913 . Person locator or person-specific
    - 379/914 . Programmable telephone component
    - 379/915 . . Soft key

- 379/916 . Touch screen associated with telephone set
- 379/917 . Voice menus

**Flexible bags****383/00 Flexible bags**

- 383/901 . Hot water or ice bag
  - 383/902 . having nonbag use
  - 383/903 . Stress relief
  - 383/904 . Filling tube
  - 383/905 . Dead fold, ductile, closure element
  - 383/906 . Dispensing feature
  - 383/907 . Peculiar, particular shape
  - 383/908 . Material having specified grain direction or molecular orientation

**Bearings****384/00 Bearings**

- 384/90 . Cooling or heating
  - 384/901 . . Floating bushing
  - 384/902 . . Porous member
  - 384/903 . . Retaining ring
  - 384/904 . . Propeller shaft outer bearing
  - 384/905 . . Temperature compensation
    - 384/9051 . . Cup-shaped bearing
    - 384/906 . . Antirotation key
    - 384/907 . . Bearing material or solid lubricant
    - 384/9071 . . Jewel, glass, ceramic or carbon
    - 384/908 . . Nylon or polytetrafluorethylene
    - 384/909 . . Plastic
      - 384/91 . . Powders
        - 384/911 . . including fiber
        - 384/912 . . Metallic
          - 384/913 . . Metallic compounds

**Optical waveguides****385/00 Optical waveguides**

- 385/90 . Solar collector or transmitter
  - 385/901 . Illuminating or display apparatus
  - 385/902 . Nonbundle fiberscope devices

**Electricity: motor control systems****388/00 Electricity: motor control systems**

- 388/90 . Specific system operational feature
  - 388/901 . . Sample and hold
  - 388/902 . . Compensation
    - 388/903 . . Protective, e.g. voltage or current limit
    - 388/904 . . Stored velocity profile
    - 388/905 . . Armature and field windings connected in series, i.e. series motor
      - 388/906 . . Proportional-integral system
      - 388/907 . . Specific control circuit element or device
        - 388/9072 . . Bridge circuit
        - 388/9075 . . Computer or microprocessor
        - 388/908 . . Frequency to voltage converter
        - 388/909 . . Monitoring means
          - 388/91 . . Operational/differential amplifier
            - 388/911 . . Phase locked loop
            - 388/912 . . Pulse or frequency counter
            - 388/913 . . Saturable reactor, space discharge device, or magnetic amplifier

- 388/914 . . . Thyatron or ignitron
- 388/915 . . Sawtooth or ramp waveform generator
- 388/916 . . Threshold circuit
- 388/917 . . Thyristor or scr
- 388/918 . . . Trigger by unijunction transistor
- 388/919 . . . Triggered by resistor or capacitor
- 388/92 . . . Chopper
- 388/921 . . Timer or time delay means
- 388/922 . . Tuned or resonant circuit
- 388/923 . Specific feedback condition or device
- 388/924 . . Centrifugal device, e.g. governor
- 388/925 . . . including contacts which open and close motor circuit
- 388/926 . . . Which controls a vacuum tube or solid-state device in motor circuit
- 388/927 . . . Which varies resistance of motor circuit
- 388/928 . . . Which controls position of commutator brushes
- 388/9281 . . Counter or back emf, CEMF
- 388/929 . . Fluid/granular material flow rate, pressure, or level
- 388/93 . . Load or torque
- 388/931 . . . Electric generator or magnet as auxiliary load
- 388/932 . . . with reverse torque, e.g. braking
- 388/933 . . Radiant energy responsive device
- 388/934 . . Thermal condition
- 388/935 . Specific application:
- 388/936 . . Food preparation equipment
- 388/937 . . Hand tool

### Typewriting machines

- 400/00** **Typewriting machines**
- 400/90 . Chemical-symbol character
- 400/901 . Continuously rotating type-head
- 400/902 . Stepping-motor drive for web feed
- 400/903 . Stepping-motor drive for carriage feed
- 400/904 . Subscript or superscript character

### Coating implements with material supply

- 401/00** **Coating implements with material supply**
- 401/01 . Readily detachable lipstick cartridges
- 401/02 . Remote recording of writing
- 401/03 . Point shape

### Binder device releasably engaging aperture or notch of sheet

- 402/00** **Binder device releasably engaging aperture or notch of sheet**
- 402/50 . Binder with tab or fastener for securing sheet
- 402/501 . Sheet retainer continuous with periphery of sheet notch
- 402/502 . Container with sheet retainer
- 402/503 . Binder device, sheet or depository including magnetic material

### Joints and connections

- 403/00** **Joints and connections**
- 403/01 . Magnetic
- 403/02 . Metal treatment
- 403/03 . Load-responsive release
- 403/04 . Quick release
- 403/05 . Carbon electrode
- 403/06 . Reciprocable ball detent

- 403/07 . Split ring stop or abutment
- 403/08 . Radially acting cam or eccentric
- 403/09 . Adjustable clamp
- 403/10 . Readily disengageable panel joints
- 403/11 . Furniture type having a snap fit
- 403/12 . Furniture type having a rotatable fastener or fastening element that tightens connection
- 403/13 . Furniture type
- 403/14 . Resilient cinch, locking-catch or retainer type
- 403/15 . Splice plates for co-linear members

### Cutting by use of rotating axially moving tool

- 408/00** **Cutting by use of rotating axially moving tool**
- 408/01 . Bowling ball drill
- 408/70 . Cutting by use of ultrasonic energy
- 408/701 . Cutting by use of radiant energy, e.g. laser, maser
- 408/702 . Cutting by use of pneumatic drive means
- 408/703 . Trepanning
- 408/704 . Drilling small holes
- 408/705 . Drilling deep holes
- 408/706 . Drilling brake lining
- 408/707 . Drilling opening for bearing in connecting rod or piston
- 408/708 . Drilling opening for bearing in engine block
- 408/709 . Reboring piston receiving cylinder
- 408/71 . Safety device
- 408/711 . Adapter for broken tool
- 408/712 . Drill press adapted to use portable hand drill
- 408/713 . Tool having detachable cutting edge
- 408/714 . Resilient tool or tool-support

### Gear cutting, milling, or planing

- 409/00** **Gear cutting, milling, or planing**
- 409/9001 . Machine button or locator
- 409/9002 . Machine tool carriage clamp
- 409/901 . Stereotype printing plate
- 409/902 . Tire mold
- 409/903 . Work holder
- 409/904 . with hydrostatic bearing

### Expanded, threaded, driven, headed, tool-deformed, or locked-threaded fastener

- 411/00** **Expanded, threaded, driven, headed, tool-deformed, or locked-threaded fastener**
- 411/01 . Thread forming, reforming, or cleaning
- 411/02 . Temperature modification
- 411/03 . Utilizing fluid pressure
- 411/90 . Fastener or fastener element composed of plural different materials
- 411/901 . . Core and exterior of different materials
- 411/902 . . . Metal core
- 411/903 . . . . Resinous exterior
- 411/904 . Fastener or fastener element composed of nonmetallic material
- 411/905 . . Paper or wood
- 411/906 . . Leather or fabric
- 411/907 . . Elastomeric
- 411/908 . . Resinous material
- 411/909 . Fastener or fastener element composed of thermo-responsive memory material
- 411/91 . Antitamper means

- 411/911 . . One-way drive
- 411/912 . Antisplitting fastener
- 411/913 . Self-expanding anchor
- 411/914 . Coated bolt
- 411/915 . Bolt having packing joint
- 411/916 . Bolt having tension feature
- 411/917 . Nut having tension feature
- 411/918 . Threadless nut
- 411/919 . Screw having driving contacts
- 411/92 . Staple
- 411/921 . Multiple-pronged nail, spike or tack
- 411/922 . Nail, spike or tack having locking device
- 411/923 . Nail, spike or tack having specific head structure
- 411/924 . Coupled nut and bolt
- 411/9241 . . Deformed
- 411/925 . . Top stop
- 411/926 . . Positive lock
- 411/927 . . . Side
- 411/928 . . . Thread gripper
- 411/929 . . Thread lock
- 411/9291 . . . Coil spring
- 411/9292 . . . Distorted washer
- 411/93 . . . Flowing metal or settable material
- 411/931 . . . Superposed nuts
- 411/932 . . . . Oppositely threaded
- 411/933 . . . . . Key or pawl locked
- 411/934 . . . . . Side locked
- 411/935 . . . Cam or cone grip
- 411/9351 . . . . Cam
- 411/936 . . . Canted nut
- 411/937 . . . Distorted nut
- 411/9371 . . . . Predistorted thread pitch or diameter
- 411/9372 . . . . Post-distorted thread pitch or diameter
- 411/938 . . . Distorted thread
- 411/939 . . . Longitudinal key
- 411/94 . . . Radial key or gib
- 411/941 . . . Side clutch
- 411/9411 . . . . Spring
- 411/9412 . . . . Roller
- 411/9413 . . . . Ball
- 411/942 . . . Tangential key
- 411/943 . . Flexible washer
- 411/944 . . Flexible key
- 411/945 . . Cross key
- 411/946 . . . Spring-seated
- 411/947 . . Elastic-gripping action
- 411/948 . . Longitudinal key
- 411/949 . . Ratchet and bolt-carried pawl
- 411/95 . . Ratchet and nut-carried pawl
- 411/951 . . . Flexible
- 411/952 . . . Pivoted
- 411/953 . . Washer-carried pawl
- 411/954 . . Wedged slotted bolt
- 411/955 . Locked bolthead or nut
- 411/956 . . Automatic base clutch
- 411/957 . . . Biting tooth
- 411/958 . . . . Coiled washer
- 411/959 . . . . Bolt- or nut-carried
- 411/96 . . . Friction
- 411/961 . . . Pawl and ratchet
- 411/962 . . . . Bolthead or nut-carried pawl
- 411/963 . . . . Yielding interlocking washer
- 411/964 . . . Detent
- 411/965 . . with retainer
- 411/966 . . . Multiple, i.e. gang type
- 411/967 . . . Deformable bolthead or nut
- 411/968 . . . Deformable base member
- 411/969 . . . Deformable retainer
- 411/97 . . . Resilient retainer
- 411/971 . . . And side lock
- 411/972 . . Distorted
- 411/973 . . Gravity bolthead, nut or washer
- 411/974 . . Side lock
- 411/975 . . . Rotatable washer
- 411/976 . . . . Bent tongue-locked
- 411/977 . . . . Pawl-locked
- 411/978 . . . Pawl and ratchet
- 411/979 . . . Resilient
- 411/98 . . . . Automatic
- 411/981 . . . . . Coiled washer
- 411/982 . . . . . Spring-tongued washer plate
- 411/983 . . . Inelastic tongue
- 411/984 . . . Longitudinal
- 411/985 . . . . Bolthead- or nut-held
- 411/986 . . . . . Reversed bolthead or nut
- 411/987 . . . . . Side pin
- 411/988 . . . . . Spike-held locking plate
- 411/989 . . . . . Swinging
- 411/99 . . . . Washer tongue-held
- 411/991 . . . Transversely sliding
- 411/992 . . . . Key, plate, or bar
- 411/993 . . . . . Bolthead- or nut-held
- 411/994 . . . . . Sliding washer
- 411/995 . . . Transversely swinging
- 411/996 . . Transverse base-locking key
- 411/997 . . Longitudinal fastener
- 411/998 . with positive bolt lock
- 411/999 . with retainer, e.g. tether

**Bookbinding: process and apparatus**

- 412/00 Bookbinding: process and apparatus**
- 412/90 . Activating previously applied adhesive
- 412/901 . Pressure sensitive adhesive
- 412/902 . Heating and pressing

**Material or article handling**

- 414/00 Material or article handling**
- 414/10 . Associated with forming or dispersing groups of intersupporting articles, e.g. stacking patterns
- 414/101 . . with article-supporting fluid cushion
- 414/102 . . including support for group
- 414/103 . . . Vertically shiftable
- 414/104 . . . . Shifted by change in weight thereon
- 414/105 . . . . Shifted by article responsive means
- 414/106 . . including means for supplying pallet or separator to group
- 414/107 . . . Recirculates emptied pallet or separator
- 414/108 . . including means for collecting emptied pallet or separator
- 414/109 . . Manual step utilized
- 414/11 . . Bricks
- 414/111 . . Audio or video cassettes

- 414/112 . . Group formed or dispensed by reversible apparatus
- 414/113 . . Nonconforming article diverted
- 414/114 . . Adjust to handle articles or groups of different sizes
- 414/115 . . including article counter
- 414/116 . . including control for pattern of group
- 414/117 . . with means to apply adhesive to article
- 414/118 . . having Geneva drive for apparatus
- 414/119 . . with article flap deflector
- 414/12 . . including means pressing against top or end of group
- 414/121 . Perforated article handling
- 414/122 . Remote control handlers
- 414/123 . Hollow cylinder handlers
- 414/124 . Roll handlers
- 414/125 . Combined or convertible implements
- 414/126 . Handlers with spring devices
- 414/127 . Handling vehicles with overhead guard for operator
- 414/128 . Handler-type toys
- 414/129 . Shaft mucking machines
- 414/13 . Handlers utilizing parallel links
- 414/131 . Transmission-line guide for a shifttable handler
- 414/132 . Vehicle-carried storage member, e.g. portable silo and means for erecting member from attitude during transport to position of intended use
- 414/133 . Handling device on tractor unit
- 414/134 . Handicapped person handling
- 414/135 . Associated with semiconductor wafer handling
- 414/136 . . including wafer orienting means
- 414/137 . . including means for charging or discharging wafer cassette
- 414/138 . . . Wafers positioned vertically within cassette
- 414/139 . . including wafer charging or discharging means for vacuum chamber
- 414/14 . . Wafer cassette transporting
- 414/141 . . includes means for gripping wafer

#### Rotary kinetic fluid motors or pumps

- 415/00 Rotary kinetic fluid motors or pumps**
- 415/90 . Rotary blood pump
- 415/901 . Drilled well-type pump
- 415/902 . Rotary pump turbine publications
- 415/903 . Well bit drive turbine
- 415/904 . Tool drive turbine, e.g. dental drill
- 415/905 . Natural fluid current motor
- 415/906 . . having specific features for water current
- 415/907 . . Vertical runner axis
- 415/908 . . Axial flow runner
- 415/909 . Air stack or shaft having natural fluid current motor
- 415/91 . Reversible between pump and motor use
- 415/911 . Pump having reversible runner rotation and separate outlets for opposing directions of rotation
- 415/912 . Interchangeable parts to vary pumping capacity or size of pump
- 415/913 . Inlet and outlet with concentric portions
- 415/914 . Device to control boundary layer
- 415/915 . Pump or portion thereof by casting or molding
- 415/916 . Perpetual motion devices

#### Fluid reaction surfaces, i.e. impellers

- 416/00 Fluid reaction surfaces, i.e. impellers**
- 416/01 . Stalker
- 416/02 . Formulas of curves
- 416/03 . Sheet metal
- 416/04 . Fluid current motor and generator
- 416/05 . Variable camber or chord length
- 416/06 . Supports for natural fluid current motors
- 416/07 . Inlet and outlet
- 416/08 . Stack or chimney with fluid motor
- 416/09 . Savonius
- 416/50 . Vibration damping features
- 416/501 . Fly brush type impeller

#### Pumps

- 417/00 Pumps**
- 417/01 . Materials digest
- 417/90 . Slurry pumps, e.g. concrete
- 417/901 . Cryogenic pumps
- 417/902 . Hermetically sealed motor pump unit
- 417/903 . Treadle operated
- 417/904 . Well pump driven by fluid motor mounted above ground

#### Rotary expansible chamber devices

- 418/00 Rotary expansible chamber devices**
- 418/01 . Non-working fluid separation

#### Alloys or metallic compositions

- 420/00 Alloys or metallic compositions**
- 420/90 . Hydrogen storage
- 420/901 . Superconductive
- 420/902 . Superplastic
- 420/903 . Semiconductive

#### Chemical apparatus and process disinfecting, deodorizing, preserving, or sterilizing

- 422/00 Chemical apparatus and process disinfecting, deodorizing, preserving, or sterilizing**
- 422/90 . Decreasing pollution or environmental impact
- 422/901 . Polymer dissolver
- 422/902 . Sodium chloride and potassium chloride dissolver
- 422/903 . Radioactive material apparatus
- 422/904 . Nitrogen fixation means
- 422/905 . Miscellaneous liquid sterilization means
- 422/906 . Plasma or ion generation means
- 422/907 . Corona or glow discharge means

#### Chemistry of inorganic compounds

- 423/00 Chemistry of inorganic compounds**
- 423/01 . Waste acid containing iron
- 423/02 . . Sulfuric acid
- 423/03 . Papermaking liquor
- 423/04 . Manganese marine modules
- 423/05 . Automatic, including computer, control
- 423/06 . Temperature control
- 423/07 . Isotope separation
- 423/08 . Corrosion or deposition inhibiting
- 423/09 . Reaction techniques
- 423/10 . . Plasma energized

- 423/11 . . High pressure
- 423/12 . . Molten media
- 423/13 . . Catalyst contact
- 423/14 . . Ion exchange; chelation or liquid/liquid ion extraction
- 423/15 . . Comminution
- 423/16 . . Fluidization
- 423/17 . . Microbiological reactions
- 423/18 . Treating trash or garbage
- 423/19 . Geothermal steam purification
- 423/21 . Faujasite, e.g. X, Y, CZS-3, ECR-4, Z-14HS, VHP-R
- 423/22 . MFI, e.g. ZSM-5, silicalite, LZ-241
- 423/23 . Ferrierite, e.g. SR-D ZSM-33
- 423/24 . LTA, e.g. A, alpha, ZK-4, ZK-21, ZK-22
- 423/25 . Mordenite, e.g. NA-D, pttilolite, zeolon
- 423/26 . Mazzite, e.g. ZSM-4, omega
- 423/27 . Beta, e.g. NU-2
- 423/28 . LTL, e.g. BA-G, L, AG-1, AG-2, AG-4, BA-6
- 423/29 . MEL, e.g. ZSM-11
- 423/30 . Alpo and sapo
- 423/31 . Rho, e.g. ECR-10, LZ-214
- 423/32 . Sodalite, e.g. HS, ultramarine
- 423/33 . MTW, e.g. ZSM-12, NU-13, CZH-5, TPZ-3
- 423/34 . Pentasils other than MFI and MEL, e.g. AZ-1, TZ-01, TZ-02, TRS, ZBM-10
- 423/35 . TON, e.g. Theta-1, ISI-1, KZ-2, ZSM-22, NU-10
- 423/36 . MTT, e.g. ZSM-23, ISI-1, KZ-1, EU-1, EU-4, EU-13
- 423/37 . LEV, e.g. levynik, ZMT-45, ZK-20, NU-3, LZ-132, LZ-133
- 423/38 . Offretite, e.g. TMA offrete
- 423/39 . Fullerene, e.g. c60, c70 derivative and related process
- 423/40 . Fullerene composition
- 424/804 . involving IgG3, IgG4, IgA, or IgY
- 424/805 . involving IgE or IgD
- 424/806 . involving IgM
- 424/807 . . Monoclonal
- 424/808 . . . Human
- 424/809 . involving immunoglobulin or antibody fragment, e.g. fab', fv, fc, heavy chain or light chain
- 424/81 . involving autoimmunity, allergy, immediate hypersensitivity, delayed hypersensitivity, immunosuppression, immunotolerance, or anergy
- 424/811 . involving sex selection or contraception
- 424/812 . Liposome comprising an antibody, antibody fragment, antigen, or other specific or nonspecific immunoeffector
- 424/813 . Viral vaccine for bovine species, e.g. cattle
- 424/814 . Viral vaccine for ovine species, e.g. sheep
- 424/815 . Viral vaccine for porcine species, e.g. swine
- 424/816 . Viral vaccine for avian species, e.g. poultry or other birds
- 424/817 . Viral vaccine for fish
- 424/818 . Viral vaccine for canidae or mustelidae, e.g. dogs, foxes, minks
- 424/819 . Viral vaccine for feline species, e.g. cats
- 424/82 . Viral vaccine for equine species, e.g. horses
- 424/821 . involving temperature-sensitive mutant virus
- 424/822 . involving tk- virus
- 424/823 . Bacterial vaccine for bovine species, e.g. cattle
- 424/824 . Bacterial vaccine for ovine species, e.g. sheep
- 424/825 . Bacterial vaccine for porcine species, e.g. swine
- 424/826 . Bacterial vaccine for avian species, e.g. poultry or other birds
- 424/827 . Bacterial vaccine for fish
- 424/828 . Bacterial vaccine for canidae or mustelidae, e.g. dogs, foxes, minks
- 424/829 . Bacterial vaccine for equine species, e.g. horses
- 424/83 . involving temperature-sensitive mutant bacterium
- 424/831 . involving capsular polysaccharide of bacterium, e.g. polyribosyl ribitol phosphate
- 424/832 . involving bacterial toxin that has modified amino acid sequence
- 424/90 . In vivo diagnostic or in vivo test agent which contains an additional ingredient to reduce the toxicity or side effects of the active ingredient

#### **Drug, bio-affecting and body treating compositions**

- 424/00 Drug, bio-affecting and body treating compositions**
- 424/01 . Aerosol hair preparation
- 424/02 . Resin hair settings
- 424/03 . Hair bleach
- 424/04 . Dandruff
- 424/05 . Stick
- 424/06 . Chelate
- 424/07 . Microporous membranes
- 424/08 . Systemic pesticides
- 424/09 . Fish posts
- 424/10 . Insect repellent
- 424/11 . Termite treating
- 424/12 . Fertilization attaching inhibition
- 424/13 . Burn treatment
- 424/14 . Topical contraceptives and spermacides
- 424/15 . Suppositories
- 424/16 . Dendrimers and dendritic polymers
- 424/80 . Antibody or fragment thereof whose amino acid sequence is disclosed in whole or in part
- 424/801 . involving antibody or fragment thereof produced by recombinant dna technology
- 424/802 . Antibody or antigen-binding fragment thereof that binds gram-positive bacteria
- 424/803 . Antibody or antigen-binding fragment thereof that binds gram-negative bacteria

#### **Plastic article or earthenware shaping or treating: apparatus**

- 425/00 Plastic article or earthenware shaping or treating: apparatus**
- 425/001 . Accumulator
- 425/002 . Air support
- 425/003 . Appendage
- 425/004 . Back pressure
- 425/005 . Cammed
- 425/007 . Coil
- 425/009 . Cooling and color
- 425/01 . Core positioning
- 425/011 . Dental injection
- 425/012 . Destructible mold and core
- 425/013 . Electric heat
- 425/014 . Expansible and collapsible
- 425/015 . Explosive
- 425/016 . Extrude and mold
- 425/017 . Filament stretching apparatus

- 425/019 . Flexible fluid pressure
- 425/02 . Fluidized bed
- 425/021 . Frictional drive
- 425/022 . Friction heat
- 425/023 . Glazing
- 425/024 . Gora
- 425/025 . Gutter
- 425/026 . High pressure
- 425/027 . Hot water bottle
- 425/028 . Impact
- 425/029 . Jigs and dies
- 425/03 . Laminated mold
- 425/032 . Lipstick
- 425/033 . Magnet
- 425/034 . Morin
- 425/035 . Opposed plunger
- 425/036 . Patching
- 425/037 . Perforate
- 425/038 . Pre-form
- 425/039 . Pre-heat
- 425/04 . Pulling wheel
- 425/041 . Reshape
- 425/042 . Ring
- 425/043 . Rocket fuel core
- 425/044 . Rubber mold
- 425/045 . Safety
- 425/046 . Scrap
- 425/047 . Seal ring
- 425/048 . Sheet clamping
- 425/049 . Spinnerette mixer
- 425/05 . Spray
- 425/051 . Sprue removal
- 425/053 . Stretch
- 425/054 . Through travel mold
- 425/055 . Polytetrafluoroethylene, i.e. PTFE
- 425/056 . Telephone
- 425/057 . Toy molding
- 425/058 . Undercut
- 425/059 . United parts
- 425/06 . Vacuum
- 425/061 . Venetian blind
- 425/101 . Aggregate and pellet
- 425/102 . Air ejection
- 425/105 . Brace
- 425/106 . Chamber
- 425/107 . Connection
- 425/108 . Conveyor
- 425/109 . Frangible connections
- 425/11 . Heated mold
- 425/111 . Hollow block
- 425/112 . Inflatable form
- 425/113 . Inner roll
- 425/115 . Lubricator
- 425/116 . Mold cleaning
- 425/117 . Pallet
- 425/118 . Pallet feeder
- 425/119 . Perforated or porous
- 425/12 . Pottery appendage
- 425/121 . Projection
- 425/122 . Reinforcing and aggregate
- 425/123 . Repress
- 425/124 . Rubber matrix
- 425/125 . Sand mold
- 425/126 . Silo mold
- 425/127 . Spring
- 425/128 . Swinging top press
- 425/129 . Wedge
- 425/13 . Wire reinforce
- 425/131 . Yielding plunger
- 425/132 . Portable
- 425/20 . Molding plants
- 425/201 . . Diverse stations
- 425/202 . . Earthenwave type
- 425/203 . . Control for blow molding apparatus
- 425/217 . Spinnerette forming conjugate, composite or hollow filaments
- 425/218 . Pipe machine: socket forming apparatus
- 425/219 . with stick inserting means for edible product
- 425/221 . Injection mold closing and locking clamp, wedge or retention means
- 425/223 . Injection mold closing means utilizing variable closing pressure
- 425/224 . Injection mold nozzle valve
- 425/225 . . Automatic control
- 425/226 . . Actuated by contact with mold
- 425/227 . Injection nozzle; positioned flush with mold or cavity
- 425/228 . Injection plunger or ram: transfer molding type
- 425/229 . Injection mold runner valve
- 425/23 . Hay wafering or pelletizing means
- 425/235 . Calendar
- 425/236 . Attenuating
- 425/237 . Varying density foam
- 425/238 . Boat hull mold
- 425/239 . Modular mold
- 425/24 . Pre-fab mold
- 425/241 . Wall panel mold
- 425/242 . Pipe joint seal mold
- 425/243 . Extrusion or injection molding
- 425/244 . Die and matrix
- 425/245 . Heat
- 425/246 . Mold heating
- 425/247 . Multipart injection molds
- 425/248 . Uniting
- 425/249 . Character
- 425/801 . Button
- 425/802 . Cable tube or rod splicing
- 425/803 . Candle or crayon
- 425/804 . Capsule making
- 425/805 . Comb or brush
- 425/806 . Flash removal
- 425/807 . Lace tipping
- 425/808 . Lens mold
- 425/809 . Seal, bottle caps only
- 425/81 . Sound record
- 425/811 . Stencil
- 425/812 . Venting
- 425/813 . Water bottle
- 425/814 . Zipper
- 425/815 . Chemically inert or reactive atmosphere
- 425/816 . Gas mask
- 425/817 . Means molding pore formable material
- 425/8175 . . Continuous

425/818 . Belt

**Food or edible material: processes, compositions, and products****426/00 Food or edible material: processes, compositions, and products**

- 426/80 . Geriatric
- 426/801 . Pediatric
- 426/802 . Simulated animal flesh
- 426/803 . Simulated fruit or vegetable
- 426/804 . Low calorie, low sodium or hypoallergic
- 426/805 . Pet food for dog, cat, bird, or fish
- 426/806 . Salt or mineral substitute
- 426/807 . Poultry or ruminant feed
- 426/808 . Starch base snack product
- 426/809 . including harvesting or planting or other numerous miscellaneous processing steps
- 426/81 . Energy rations, e.g. emergency rations, survival rations
- 426/811 . Utilizing surface parting, antistick or release agent

**Coating processes****427/00 Coating processes**

- 427/10 . Chemical vapor infiltration, i.e. CVI
- 427/101 . Liquid Source Chemical Deposition, i.e. LSCVD or Aerosol Chemical Vapor Deposition, i.e. ACVD
- 427/102 . Fullerene type base or coating
- 427/103 . Diamond-like carbon coating, i.e. DLC
- 427/104 . . Utilizing low energy electromagnetic radiation, e.g. microwave, radio wave, IR, UV, visible, actinic laser
- 427/105 . . Utilizing ion plating or ion implantation
- 427/106 . . Utilizing plasma, e.g. corona, glow discharge, cold plasma

**Stock material or miscellaneous articles****428/00 Stock material or miscellaneous articles**

- 428/90 . Magnetic feature
- 428/901 . Printed circuit
- 428/902 . High modulus filament or fiber
- 428/903 . Microfiber, less than 100 micron diameter
- 428/9033 . Recycled materials
- 428/904 . Artificial leather
- 428/9044 . Wall and shelf covering
- 428/905 . Odor releasing material
- 428/906 . Roll or coil
- 428/9066 . Embroidery
- 428/907 . Resistant against plant or animal attack
- 428/9077 . Layer or article rendered light-transmissive by pressure, e.g. blushed
- 428/908 . Impression retention layer, e.g. print matrix, sound record
- 428/9088 . Wear-resistant layer
- 428/909 . Resilient layer, e.g. printer's blanket
- 428/91 . Product with molecular orientation
- 428/911 . Penetration resistant layer
- 428/912 . Puncture healing layer
- 428/9122 . Mirror
- 428/913 . Material designed to be responsive to temperature, light, moisture
- 428/9133 . Decorative article for viewing from one side only, e.g. plaque

- 428/914 . Transfer or decalcomania
- 428/915 . . Fraud or tamper detecting
- 428/916 . Fraud or tamper detecting
- 428/917 . Electroluminescent
- 428/918 . Material abnormally transparent
- 428/919 . Camouflaged article
- 428/92 . Fire or heat protection feature
- 428/921 . . Fire or flameproofing
- 428/922 . Static electricity metal bleed-off metallic stock
- 428/923 . . Physical dimension
- 428/924 . . . Composite
- 428/925 . . . . Relative dimension specified
- 428/926 . . . . Thickness of individual layer specified
- 428/9265 . . Special properties
- 428/927 . . . Decorative informative
- 428/928 . . . Magnetic property
- 428/929 . . . Electrical contact feature
- 428/93 . . . Electric superconducting
- 428/931 . . . Components of differing electric conductivity
- 428/932 . . . Abrasive or cutting feature
- 428/933 . . . Sacrificial component
- 428/9335 . . Product by special process
- 428/934 . . . Electrical process
- 428/935 . . . . Electroplating
- 428/936 . . . Chemical deposition, e.g. electroless plating
- 428/937 . . . Sprayed metal
- 428/938 . . . Vapor deposition or gas diffusion
- 428/939 . . . Molten or fused coating
- 428/94 . . . Pressure bonding, e.g. explosive
- 428/941 . . . Solid state alloying, e.g. diffusion, to disappearance of an original layer

**Chemistry: electrical current producing apparatus, product, and process****429/00 Chemistry: electrical current producing apparatus, product, and process**

- 429/90 . Fuel cell including means for power conditioning, e.g. Conversion to ac
- 429/901 . Fuel cell including means for utilization of heat for unrelated application, e.g. heating a building

**Radiation imagery chemistry: process, composition, or product thereof****430/00 Radiation imagery chemistry: process, composition, or product thereof**

- 430/001 . Electric or magnetic imagery, e.g., xerography, electrography, magnetography, etc. Process, composition, or product
- 430/10 . . Donor-acceptor complex photoconductor
- 430/101 . . Photoconductive powder
- 430/102 . . Electrically charging radiation-conductive surface
- 430/103 . . Radiation sensitive composition or product containing specified antioxidant
- 430/104 . . One component toner
- 430/105 . . Polymer in developer
- 430/1053 . Imaging affecting physical property or radiation sensitive material, or producing nonplanar or printing surface - process, composition, or product: radiation sensitive composition or product or process of making binder containing
- 430/1055 . . Radiation sensitive composition or product or process of making

- 430/106 . . . Binder containing
- 430/107 . . . . Polyamide or polyurethane
- 430/108 . . . . Polyolefin or halogen containing
- 430/109 . . . . Polyester
- 430/11 . . . . Vinyl alcohol polymer or derivative
- 430/111 . . . . Polymer of unsaturated acid or ester
- 430/112 . . . . Cellulosic
- 430/113 . . . . with plasticizer
- 430/114 . . . Initiator containing
- 430/115 . . . . Cationic or anionic
- 430/116 . . . . Redox or dye sensitizer
- 430/117 . . . . Free radical
- 430/118 . . . . with inhibitor or stabilizer
- 430/119 . . . . . Hydroxyl or carbonyl group containing as sole functional groups
- 430/12 . . . . Nitrogen compound containing
- 430/121 . . . . . Nitrogen in heterocyclic ring
- 430/122 . . . . Sulfur compound containing
- 430/123 . . . . . Sulfur in heterocyclic ring
- 430/124 . . . . Carbonyl compound containing
- 430/125 . . . . . Carbonyl in heterocyclic compound
- 430/126 . . . . Halogen compound containing
- 430/127 . . . Spectral sensitizer containing
- 430/128 . . . Radiation-activated cross-linking agent containing
- 430/129 . Aerial films or processes specifically adapted for aerial radiation imagery
- 430/13 . Antibrone agent or process
- 430/131 . Anticurl layer
- 430/132 . Anti-ultraviolet fading
- 430/133 . Binder-free emulsion
- 430/134 . Brightener containing
- 430/135 . Cine film
- 430/136 . Coating process making radiation sensitive element
- 430/137 . Cobalt complex containing
- 430/138 . Corona discharge process
- 430/139 . Defect coating
- 430/14 . Dimensionally stable material
- 430/141 . Direct positive material
- 430/142 . Dye mordant
- 430/143 . Electron beam
- 430/144 . Hydrogen peroxide treatment
- 430/145 . Infrared
- 430/146 . Laser beam
- 430/147 . Lenticular
- 430/148 . Light sensitive titanium compound containing
- 430/149 . Lippmann
- 430/15 . Lithographic emulsion
- 430/151 . Matting or other surface reflectivity altering material
- 430/152 . Making camera copy, e.g. mechanical negative
- 430/153 . Multiple image producing on single receiver
- 430/154 . Neutron beam
- 430/155 . Nonresinous additive to promote interlayer adhesion in element
- 430/156 . Precursor compound
- 430/157 . . interlayer correction coupler, ICC
- 430/158 . . Development inhibitor releaser, DIR
- 430/159 . . Development dye releaser, DDR
- 430/16 . . Blocked developers
- 430/161 . . Blocked restrainers
- 430/162 . Protective or antiabrasion layer
- 430/163 . Radiation-chromic compound
- 430/164 . Rapid access processing
- 430/165 . Thermal imaging composition
- 430/166 . Toner containing
- 430/167 . X-ray
- 430/168 . . X-ray exposure process
- Heating**
- 432/00 Heating**
- 432/50 . Tobacco barns
- Chemistry: molecular biology and microbiology**
- 435/00 Chemistry: molecular biology and microbiology**
- 435/80 . Elimination or reduction of contamination by undersired ferments, e.g. aseptic cultivation
- 435/801 . Anerobic cultivation
- 435/802 . Logarithmic growth phase
- 435/803 . Physical recovery methods, e.g. chromatography, grinding
- 435/804 . Single cell protein
- 435/805 . Test papers
- 435/806 . Fertility tests
- 435/807 . Gas detection apparatus
- 435/808 . Optical sensing apparatus
- 435/809 . Incubators or racks or holders for culture plates or containers
- 435/81 . Packaged device or kit
- 435/811 . Interferon
- 435/812 . Foam control
- 435/813 . Continuous fermentation
- 435/814 . Enzyme separation or purification
- 435/815 . . by sorption
- 435/816 . . by solubility
- 435/817 . Enzyme or microbe electrode
- 435/818 . Aeration or oxygen transfer technique
- 435/819 . Fermentation vessels in series
- 435/82 . Subcellular parts of microorganisms
- 435/821 . Microorganisms used in the destruction of hazardous or toxic waste
- 435/8215 . Microorganisms
- 435/822 . . using bacteria or actinomycetales
- 435/823 . . . Acetobacter
- 435/824 . . . Achromobacter
- 435/825 . . . Actinomadura
- 435/826 . . . Actinomyces
- 435/827 . . . Actinoplanes
- 435/828 . . . Aerobacter
- 435/829 . . . Alcaligenes
- 435/83 . . . Arthrobacter
- 435/831 . . . Azotobacter
- 435/832 . . . Bacillus
- 435/833 . . . . Bacillus brevis
- 435/834 . . . . Bacillus cereus
- 435/835 . . . . Bacillus circulans
- 435/836 . . . . Bacillus licheniformis
- 435/837 . . . . Bacillus megaterium
- 435/838 . . . . Bacillus polymyxa
- 435/839 . . . . Bacillus subtilis
- 435/84 . . . Brevibacterium
- 435/841 . . . Chainia
- 435/842 . . . Clostridium

435/843	. . . Corynebacterium	435/904	. . . . Streptomyces rimosus
435/844	. . . . Corynebacterium diphtheriae	435/905	. . . . Streptomyces sparogenes
435/845	. . . . Corynebacterium poinsettiae	435/906	. . . . Streptomyces venezuelae
435/846	. . . . Corynebacterium pyogenes	435/907	. . . Streptosporangium
435/847	. . . Erwinia	435/908	. . . Streptovorticillium
435/848	. . . Escherichia	435/909	. . . Vibrio
435/849	. . . . Escherichia coli	435/91	. . . Xanthomonas
435/85	. . . Flavobacterium	435/911	. . using fungi
435/851	. . . Haemophilus	435/912	. . . Absidia
435/852	. . . Klebsiella	435/913	. . . Aspergillus
435/853	. . . Lactobacillus	435/914	. . . . Aspergillus awamori
435/854	. . . . Lactobacillus acidophilus	435/915	. . . . Aspergillus flavus
435/855	. . . . Lactobacillus brevis	435/916	. . . . Aspergillus fumigatus
435/856	. . . . Lactobacillus casei	435/917	. . . . Aspergillus niger
435/857	. . . . Lactobacillus plantarum	435/918	. . . . Aspergillus oryzae
435/858	. . . Methylomonas	435/919	. . . . Aspergillus ustus
435/859	. . . Micrococcus	435/92	. . . . Aspergillus wentii
435/86	. . . . Micrococcus flavus	435/921	. . . Candida
435/861	. . . . Micrococcus glutamicus	435/922	. . . . Candida albicans
435/862	. . . . Micrococcus lysodeikticus	435/923	. . . . Candida lipolytica
435/863	. . . Mycobacterium	435/924	. . . . Candida tropicalis
435/864	. . . . Mycobacterium avium	435/925	. . . Cephalosporium
435/865	. . . . Mycobacterium fortuitum	435/926	. . . . Cephalosporium acremonium
435/866	. . . . Mycobacterium smegmatis	435/927	. . . . Cephalosporium caerulens
435/867	. . . Micromonospora	435/928	. . . . Cephalosporium crocinigenium
435/868	. . . . Micromonospora chalcea	435/929	. . . Fusarium
435/869	. . . . Micromonospora purpurea	435/93	. . . Hansenula
435/87	. . . Mycoplasma	435/931	. . . Mucor
435/871	. . . Neisseria	435/932	. . . Paecilomyces
435/872	. . . Nocardia	435/933	. . . Penicillium
435/873	. . . Proteus	435/934	. . . . Penicillium brevi
435/874	. . . Pseudomonas	435/935	. . . . Penicillium chrysogenum
435/875	. . . . Pseudomonas aeruginosa	435/936	. . . . Penicillium notatum
435/876	. . . . Pseudomonas fluorescens	435/937	. . . . Penicillium patulum
435/877	. . . . Pseudomonas putida	435/938	. . . Pichia
435/878	. . . Rhizobium	435/939	. . . Rhizopus
435/879	. . . Salmonella	435/94	. . . Saccharomyces
435/88	. . . Serratia	435/941	. . . . Saccharomyces carlsbergensis
435/881	. . . . Serratia marcescens	435/942	. . . . Saccharomyces cerevisiae
435/882	. . . Staphylococcus	435/943	. . . . Saccharomyces lactis
435/883	. . . . Staphylococcus aureus	435/944	. . . Torulopsis
435/884	. . . . Staphylococcus epidermidis	435/945	. . . Trichoderma
435/885	. . . Streptococcus	435/946	. . using algae
435/886	. . . Streptomyces	435/947	. . using protozoa
435/887	. . . . Streptomyces albus	435/948	. . using viruses or cell lines
435/888	. . . . Streptomyces antibioticus	435/961	. including a step of forming, releasing, or exposing the antigen or forming the hapten-immunogenic carrier complex or the antigen <i>per se</i>
435/889	. . . . Streptomyces aureofaciens	435/962	. Prevention or removal of interfering materials or reactants or other treatment to enhance results, e.g. determining or preventing nonspecific binding
435/89	. . . . Streptomyces aureus	435/963	. Methods of stopping an enzyme reaction or stabilizing the test materials
435/891	. . . . Streptomyces bikiniensis	435/964	. including enzyme-ligand conjugate production, e.g. reducing rate of nonproductive linkage
435/892	. . . . Streptomyces candidus	435/965	. involving idiotype or anti-idiotype antibody
435/893	. . . . Streptomyces chartreusis	435/966	. involving an enzyme system with high turnover rate or complement magnified assay, e.g. multi-enzyme systems
435/894	. . . . Streptomyces diastatochromogenes	435/967	. Standards, controls, materials, e.g. validation studies, buffer systems
435/895	. . . . Streptomyces filipinensis		
435/896	. . . . Streptomyces fradiae		
435/897	. . . . Streptomyces griseus		
435/898	. . . . Streptomyces hygrosopicus		
435/899	. . . . Streptomyces lavendulae		
435/90	. . . . Streptomyces lincolnensis		
435/901	. . . . Streptomyces noursei		
435/902	. . . . Streptomyces olivaceus		
435/903	. . . . Streptomyces platensis		

- 435/968 . High energy substrates, e.g. fluorescent, chemiluminescent, radioactive
- 435/969 . Multiple layering of reactants
- 435/97 . Test strip or test slide
- 435/971 . Capture of complex after antigen-antibody reaction
- 435/972 . Modified antibody, e.g. hybrid, bifunctional
- 435/973 . Simultaneous determination of more than one analyte
- 435/974 . Aids related test
- 435/975 . Kit

**Chemistry: analytical and immunological testing****436/00 Chemistry: analytical and immunological testing**

- 436/80 . Fluorescent dyes, e.g. rhodamine
- 436/801 . Electron dense compounds, e.g. ferritin
- 436/802 . Protein-bacteriophage conjugates
- 436/803 . Stable free radicals, e.g. spin immunoassay
- 436/804 . Radioisotope, e.g. radioimmunoassay
- 436/805 . Optical property
- 436/806 . Electrical property or magnetic property
- 436/807 . Apparatus included in process claim, e.g. physical support structures
  - 436/808 . . Automated or kit
  - 436/809 . . Multifield plates or multicontainer arrays
  - 436/81 . . Tube, bottle, or dipstick
  - 436/811 . Test for named disease, body condition or organ function
    - 436/812 . . Infectious mononucleosis
    - 436/813 . . Cancer
    - 436/814 . . Pregnancy
    - 436/815 . Test for named compound or class of compounds
      - 436/816 . . Alkaloids, amphetamines, and barbiturates
      - 436/817 . . Steroids or hormones
        - 436/818 . . . Human chorionic gonadotropin
    - 436/819 . Multifunctional antigen or antibody
    - 436/82 . Hepatitis associated antigens and antibodies
      - 436/821 . involving complement factors or complement systems
    - 436/822 . Identified hapten
    - 436/823 . Immunogenic carrier or carrier *per se*
    - 436/824 . Immunological separation techniques
    - 436/825 . Pretreatment for removal of interfering factors from sample
      - 436/826 . Additives, e.g. buffers, diluents, preservatives
    - 436/827 . Lectins
    - 436/828 . Protein A
    - 436/829 . Liposomes, e.g. encapsulation
  - 436/90 . Breath testing
  - 436/901 . Drugs of abuse, e.g. narcotics, amphetamine
  - 436/902 . Dosimeter
  - 436/903 . Diazo reactions
  - 436/904 . Oxidation - reduction indicators
  - 436/905 . Photochemical activation of reactions
  - 436/906 . Fertility tests
  - 436/907 . Fetal lung maturity
  - 436/908 . Gravimetric analysis
  - 436/909 . Nephelometry
  - 436/91 . Iron-binding capacity of blood

- 438/90 . Bulk effect device making
- 438/901 . Capacitive junction
- 438/902 . Capping layer
- 438/903 . Catalyst aided deposition
- 438/904 . Charge carrier lifetime control
- 438/905 . Cleaning of reaction chamber
- 438/906 . Cleaning of wafer as interim step
- 438/907 . Continuous processing
  - 438/908 . . Utilizing cluster apparatus
- 438/909 . Controlled atmosphere
  - 438/91 . Controlling charging state at semiconductor-insulator interface
- 438/911 . Differential oxidation and etching
- 438/912 . Displacing pn junction
- 438/913 . Diverse treatments performed in unitary chamber
- 438/914 . Doping
  - 438/915 . . Amphoteric doping
  - 438/916 . . Autodoping control or utilization
  - 438/917 . . Deep level dopants, e.g. gold, chromium, iron or nickel
    - 438/918 . . Special or nonstandard dopant
    - 438/919 . . Compensation doping
  - 438/92 . . Controlling diffusion profile by oxidation
  - 438/921 . . Nonselective diffusion
  - 438/922 . . Diffusion along grain boundaries
  - 438/923 . . Diffusion through a layer
    - 438/924 . . To facilitate selective etching
    - 438/925 . . Fluid growth doping control, e.g. delta doping
  - 438/926 . Dummy metallization
  - 438/927 . Electromigration resistant metallization
  - 438/928 . Front and rear surface processing
  - 438/929 . Eutectic semiconductor
    - 438/93 . Ternary or quaternary semiconductor comprised of elements from three different groups, e.g. I-III-V
  - 438/931 . Silicon carbide semiconductor
  - 438/932 . Boron nitride semiconductor
  - 438/933 . Germanium or silicon or Ge-Si on III-V
  - 438/934 . Sheet resistance, i.e. dopant parameters
  - 438/935 . Gas flow control
  - 438/936 . Graded energy gap
  - 438/937 . Hillock prevention
  - 438/938 . Lattice strain control or utilization
  - 438/939 . Langmuir-blodgett film utilization
  - 438/94 . Laser ablative material removal
  - 438/941 . Loading effect mitigation
  - 438/942 . Masking
    - 438/943 . . Movable
    - 438/944 . . Shadow
      - 438/945 . . Special, e.g. metal
      - 438/946 . . Step and repeat
      - 438/947 . . Subphotolithographic processing
      - 438/948 . . Radiation resist
        - 438/949 . . . Energy beam treating radiation resist on semiconductor
          - 438/95 . . . . Multilayer mask including nonradiation sensitive layer
          - 438/951 . . . . Lift-off
          - 438/952 . . . . Utilizing antireflective layer
  - 438/953 . Making radiation resistant device
  - 438/954 . Making oxide-nitride-oxide device
  - 438/955 . Melt-back
  - 438/956 . Making multiple wavelength emissive device

**Semiconductor device manufacturing: process****438/00 Semiconductor device manufacturing: process**

- 438/957 . Making metal-insulator-metal device
- 438/958 . Passivation layer
- 438/959 . Mechanical polishing of wafer
- 438/96 . Porous semiconductor
- 438/961 . Ion beam source and generation
- 438/962 . Quantum dots and lines
- 438/963 . Removing process residues from vertical substrate surfaces
- 438/964 . Roughened surface
- 438/965 . Shaped junction formation
- 438/966 . Selective oxidation of ion-amorphousized layer
- 438/967 . Semiconductor on specified insulator
- 438/968 . Semiconductor-metal-semiconductor
- 438/969 . Simultaneous formation of monocrystalline and polycrystalline regions
- 438/97 . Specified etch stop material
- 438/971 . Stoichiometric control of host substrate composition
- 438/972 . Stored charge erasure
- 438/973 . Substrate orientation
- 438/974 . Substrate surface preparation
- 438/975 . Substrate or mask aligning feature
- 438/976 . Temporary protective layer
- 438/977 . Thinning or removal of substrate
- 438/978 . forming tapered edges on substrate or adjacent layers
- 438/979 . Tunnel diodes
- 438/98 . Utilizing process equivalents or options
- 438/981 . Utilizing varying dielectric thickness
- 438/982 . Varying orientation of devices in array
- 438/983 . Zener diodes
- 439/922 . Telephone switchboard protector
- 439/923 . Separation or disconnection aid
- 439/9241 . Contacts arranged for sequential connection
- 439/9242 . . with contact preventer to require joining in a given sequence
- 439/925 . Floor mounted, e.g. under carpet
- 439/926 . within machine casing or motor housing, connector within casing wall
- 439/927 . Conductive gasket
- 439/928 . Modular electrically interengaging parts, e.g. stove with replaceable heating elements formed on coupling parts
- 439/9281 . . Plug-in carrier or adapter for removable component, e.g. "hard drive" for computer
- 439/929 . Connecting base plate or shelf type holder
- 439/93 . Coupling part wherein contact is comprised of a wire or brush
- 439/931 . Conductive coating
- 439/932 . Heat shrink material
- 439/933 . Special insulation
- 439/934 . . High voltage barrier, e.g. surface arcing or corona preventing insulator
- 439/935 . . Glass or ceramic contact pin holder
- 439/936 . . Potting material or coating, e.g. grease, insulative coating, sealant or, adhesive
- 439/937 . . Plural insulators in strip form
- 439/9381 . Cathodic protection of structure, e.g. ship hull
- 439/939 . with grounding to metal mounting panel
- 439/94 . including provision for mechanical lifting or manipulation, e.g. for vacuum lifting
- 439/941 . Crosstalk suppression
- 439/942 . Comblike retainer for conductor
- 439/943 . including provision for pressing contact into pcb hole
- 439/944 . Coaxial connector having circuit-interrupting provision effected by mating or having "dead" contact activated after mating
- 439/945 . Adapter for pcb or cartridge
- 439/946 . Memory card cartridge
- 439/947 . PCB mounted connector with ground terminal
- 439/948 . Contact or connector with insertion depth limiter
- 439/949 . Junction box with busbar for plug-socket type interconnection with receptacle
- 439/95 . Electrical connector adapted to transmit electricity to mating connector without physical contact, e.g. by induction, magnetism, or electrostatic field
- 439/951 . PCB having detailed leading edge
- 439/952 . Jumper for use with specific apparatus
- 439/953 . with latch rod to be retainingly received by opening of mating connector
- 439/954 . Special orientation of electrical connector
- 439/955 . including electronic identifier or coding means
- 439/956 . with means to allow selection of diverse voltage or polarity
- 439/957 . Auxiliary contact part for circuit adaptation

### Electrical connectors

- 439/00 Electrical connectors**
- 439/901 . Connector hood or shell
- 439/902 . . Angularly disposed contact and conductor
- 439/903 . . Special latch for insert
- 439/904 . . Multipart shell
- 439/905 . . . Axially joined sections
- 439/906 . . . Longitudinally divided
- 439/907 . Contact having three contact surfaces, including diverse surface
- 439/908 . Contact having two contact surfaces for electrical connection on opposite sides of insulative body
- 439/909 . Medical use or attached to human body
- 439/91 . Observation aide, e.g. transparent material, window in housing
- 439/911 . Safety, e.g. electrical disconnection required before opening housing
- 439/912 . with testing means
- 439/913 . Condition determining device, e.g. oxygen sensor, accelerometer, ionizer chamber, thermocouple
- 439/914 . for flashbulb or camera, including flash cube
- 439/915 . Auxiliary device for existing plug
- 439/916 . Antenna
- 439/917 . Alarm circuit, e.g. window affixed foil
- 439/918 . Multilamp vehicle panel
- 439/919 . for treatment by electrical current, e.g. magnet or battery charger, heater or welder
- 439/92 . for interconnecting rigid pipelike bodies, e.g. wave guides
- 439/921 . Transformer bushing type or high voltage underground connector
- 439/941 . Crosstalk suppression
- 439/942 . Comblike retainer for conductor
- 439/943 . including provision for pressing contact into pcb hole
- 439/944 . Coaxial connector having circuit-interrupting provision effected by mating or having "dead" contact activated after mating
- 439/945 . Adapter for pcb or cartridge
- 439/946 . Memory card cartridge
- 439/947 . PCB mounted connector with ground terminal
- 439/948 . Contact or connector with insertion depth limiter
- 439/949 . Junction box with busbar for plug-socket type interconnection with receptacle
- 439/95 . Electrical connector adapted to transmit electricity to mating connector without physical contact, e.g. by induction, magnetism, or electrostatic field
- 439/951 . PCB having detailed leading edge
- 439/952 . Jumper for use with specific apparatus
- 439/953 . with latch rod to be retainingly received by opening of mating connector
- 439/954 . Special orientation of electrical connector
- 439/955 . including electronic identifier or coding means
- 439/956 . with means to allow selection of diverse voltage or polarity
- 439/957 . Auxiliary contact part for circuit adaptation

### Amusement devices: toys

- 446/00 Amusement devices: toys**
- 446/901 . Detachably adhesive

### Abrading

- 451/00 Abrading**

- 451/90 . Gear abrader
- 451/901 . Super finish
- 451/902 . Brake abrading
- 451/903 . Egg cleaning
- 451/904 . Flexible abrasive storage reel
- 451/905 . Metal lap
- 451/906 . Machine element or unit
- 451/907 . Strip feeding
- 451/908 . Electrical abrading
- 451/909 . Wire polishing
- 451/91 . Ultrasonic
- 451/911 . Tool mounting point
- 451/912 . Shoe abrading
- 451/913 . Contour abrading
- 451/914 . Supporting, positioning, or feeding work
- 451/915 . Abrading wheel speed control
- 451/916 . Abrading of brush bristle
- 451/917 . Abrading of scalloped cutting edge, e.g. bread knife sharpening
- 451/918 . Adjustable work support, e.g. by sine bar
- 451/919 . Wankel
- 451/92 . Tire "rounding"
- 451/921 . Pad for lens shaping tool

**Ventilation**

- 454/00 Ventilation**
- 454/90 . Ventilator using solar power
  - 454/901 . Fog dispeller
  - 454/902 . Air raid shelter ventilation
  - 454/903 . Flexible ducts used for carrying air
  - 454/904 . Magnetic means to hold a damper closed
  - 454/905 . Black out means
  - 454/906 . Noise inhibiting means
  - 454/907 . Seat
  - 454/908 . having rotary retarder
  - 454/909 . Radon prevention

**Crop threshing or separating**

- 460/00 Crop threshing or separating**
- 460/901 . Material distributor
  - 460/902 . Grain cleaner
  - 460/903 . Grain saver
  - 460/904 . Potato digger
  - 460/905 . Straw or chaff stacker

**Books, strips, and leaves for manifolding**

- 462/00 Books, strips, and leaves for manifolding**
- 462/90 . Adhesive
  - 462/901 . . Pressure sensitive
  - 462/902 . Camouflage or nontransfer
  - 462/903 . Security

**Rotary shafts, gudgeons, housings, and flexible couplings for rotary shafts**

- 464/00 Rotary shafts, gudgeons, housings, and flexible couplings for rotary shafts**
- 464/90 . Electrically insulative member
  - 464/901 . Rapid attachment or release
  - 464/902 . Particular material
  - 464/903 . . Nonmetal

- 464/904 . Homokinetic coupling
- 464/905 . . Torque transmitted via radially extending pin
- 464/906 . . Torque transmitted via radially spaced balls

**Threaded, headed fastener, or washer making: process and apparatus**

- 470/00 Threaded, headed fastener, or washer making: process and apparatus**
- 470/90 . Floating workholder
  - 470/901 . Pipe or rod workholder
  - 470/902 . Workholder index
  - 470/903 . Yieldable spindle
  - 470/904 . Turret
  - 470/905 . Wire coil insert
  - 470/906 . Nylon plug lock
  - 470/907 . Clinch nut feeder

**Endless belt power transmission systems or components**

- 474/00 Endless belt power transmission systems or components**
- 474/90 . Phase variator
  - 474/901 . Pulley or guide roll for track of endless track vehicle
  - 474/902 . Particular connection between rim and hub
  - 474/903 . Particular connection between hub and shaft

**Planetary gear transmission systems or components**

- 475/00 Planetary gear transmission systems or components**
- 475/90 . Brake for input or output shaft
  - 475/901 . Particular material
  - 475/902 . . Nonmetallic
  - 475/903 . Stacked planetary gearing
  - 475/904 . Particular mathematical equation

**Friction gear transmission systems or components**

- 476/00 Friction gear transmission systems or components**
- 476/90 . Overload release

**Interrelated power delivery controls, including engine control**

- 477/00 Interrelated power delivery controls, including engine control**
- 477/90 . Control signal is vehicle weight
  - 477/901 . Control signal is slope
  - 477/902 . Control signal is engine parameter other than manifold pressure or fuel control
  - 477/903 . Control signal is steering
  - 477/904 . Control signal is acceleration
  - 477/905 . . Acceleration of throttle signal
  - 477/906 . Means detecting or ameliorating the effects of malfunction or potential malfunction
  - 477/907 . . Redundant
  - 477/908 . In series transmission

**Exercise devices**

- 482/00 Exercise devices**
- 482/90 . Ergometer with feedback to load or with feedback comparison
  - 482/901 . having computer circuitry
  - 482/902 . . Employing specific graphic or video display
  - 482/903 . Utilizing electromagnetic force resistance

- 482/904 . Removably attached to wheelchair, home furnishing, or home structure
- 482/905 . Arm wrestling
- 482/906 . Utilizing opponent supplied resistance
- 482/907 . Stretching
- 482/908 . Adjustable
- 482/909 . Mechanical indicator
- 482/91 . Portable exercise device with carrying handle, case, or cabinet

**Tool changing**

- 483/00 Tool changing**
- 483/90 . Gripping portion engages tool simultaneous with tool rotating in spindle
- 483/901 . Robot end effectors
- 483/902 . Tool grippers

**Manufacturing container or tube from paper; or other manufacturing from a sheet or web**

- 493/00 Manufacturing container or tube from paper; or other manufacturing from a sheet or web**
- 493/901 . Rigid container
- 493/902 . . Dished
- 493/903 . . Insulated thermally
- 493/904 . . Cushioned
- 493/905 . . having window
- 493/906 . . having multilayer wall
- 493/907 . . . Lined
- 493/908 . . . Covered
- 493/909 . . having handle or suspension means
- 493/91 . . Cigarette container
- 493/911 . . . Flip-top
- 493/912 . . having internal partition
- 493/913 . . . Egg container
- 493/914 . . Eyeglass container
- 493/915 . . Match container
- 493/916 . Pliable container
- 493/917 . . Envelope
- 493/918 . . . Expandable
- 493/919 . . . having window
- 493/92 . . . having plural compartments
- 493/921 . . . having integrally formed insert
- 493/922 . . . having liner
- 493/923 . . . with opening means, e.g. tear strip, valve
- 493/924 . . Requiring external support during filling
- 493/925 . . having mesh or window opening
- 493/926 . . having handle or suspension means
- 493/927 . . Reclosable
- 493/928 . . . with draw string
- 493/929 . . . with valve
- 493/93 . . having tear strip
- 493/931 . . having plural compartments
- 493/932 . . having plural openings
- 493/933 . . having multilayer wall
- 493/934 . . Parallelepiped or tetrahedron shape
- 493/935 . . Covering bag, e.g. garment protector
- 493/936 . . Square bottom
- 493/937 . Textile
- 493/938 . . Apparel
- 493/939 . Apparel support
- 493/94 . Bellows

- 493/941 . Filter
- 493/942 . Cleaning implement, e.g. brush, dust mop
- 493/943 . Candy stick
- 493/944 . Aperture card or display device with window
- 493/945 . Coin holder
- 493/946 . Phonograph record jacket
- 493/947 . File folder
- 493/948 . Igniting fuse
- 493/949 . Electrical insulation
- 493/95 . Lamp shade
- 493/951 . Seedling container
- 493/952 . Photo corner mount
- 493/953 . Stencil or outline guide
- 493/954 . Spool
- 493/955 . Decoration article
- 493/956 . . having appearance of living plant, e.g. christmas tree
- 493/957 . . Festoon
- 493/958 . . Garland
- 493/959 . Toy or amusement article
- 493/96 . Toilet article
- 493/961 . Tag, marker, or label
- 493/962 . Closure, e.g. tie string, valve
- 493/963 . Opener, e.g. tear strip
- 493/964 . Pallet
- 493/965 . . Flat or "boat", e.g. for candy, crackers
- 493/966 . Honeycomb structure
- 493/967 . Dunnage, wadding, stuffing, or filling excelsior
- 493/968 . Structural shape

**Imperforate bowl: centrifugal separators**

- 494/00 Imperforate bowl: centrifugal separators**
- 494/90 . involving mixture containing one or more gases
- 494/901 . involving mixture containing oil
- 494/902 . involving the use of mercury

**Compositions: ceramic**

- 501/00 Compositions: ceramic**
- 501/90 . Optical glass, e.g. silent on refractive index and/or ABBE number
- 501/901 . . having R.I. at least 1.8
- 501/902 . . having ABBE number at least 70
- 501/903 . . having refractive index less than 1.8 and ABBE number less than 70
- 501/904 . . Infrared transmitting or absorbing
- 501/905 . . Ultraviolet transmitting or absorbing
- 501/906 . . Thorium oxide containing

**Catalyst, solid sorbent, or support therefor: product or process of making**

- 502/00 Catalyst, solid sorbent, or support therefor: product or process of making**
- 502/50 . Stabilized
- 502/501 . . for multi-regenerability
- 502/502 . . Crystallinity
- 502/503 . . Crush strength
- 502/504 . . Abrasion resistance
- 502/506 . Method of making inorganic composition utilizing organic compound, except formic, acetic, or oxalic acid or salt thereof

502/507	. . Synthetic resin, natural resin, polysaccharide, or polypeptide	505/701	. . Coated or thin film device, i.e. active or passive
502/508	. . Sulfur containing organic compound	505/702	. . . Josephson junction present
502/509	. . Nitrogen containing organic compound	505/703	. . . Microelectronic device with superconducting conduction line
502/51	. . . Also containing hydroxyl bonded to carbon, e.g. carboxylic acid	505/704	. . Wire, fiber, or cable
502/511	. . . Two or more nitrogen atoms bonded to different carbon atoms	505/705	. . . Magnetic coil
502/512	. . Carboxylic acid or salt thereof other than formic, acetic, or oxalic acid	505/706	. . Contact pads or leads bonded to superconductor
502/513	. . Alcohol, phenol, or ether or metallate thereof	505/725	. Process of making or treating high tc, above 30 k, superconducting shaped material, article, or device
502/514	. Process applicable either to preparing or to regenerating or to rehabilitating catalyst or sorbent	505/726	. . Measuring or testing of superconducting property
502/515	. Specific contaminant removal	505/727	. . using magnetic field
502/516	. . Metal contaminant removal	505/728	. . Etching
502/517	. . Sulfur or sulfur compound removal	505/729	. . Growing single crystal, e.g. epitaxy, bulk
502/518	. . Carbonaceous contaminant	505/73	. . Vacuum treating or coating
502/519	. Reagent grade, e.g. ultra pure	505/731	. . . Sputter coating
502/52	. Suppressed side reactions	505/732	. . . Evaporative coating with superconducting material
502/521	. Metal contaminant passivation	505/733	. . Rapid solidification, e.g. quenching, gas-atomizing, melt-spinning, roller-quenching
502/522	. Radiant or wave energy activated	505/734	. . From organometallic precursors, e.g. acetylacetonates
502/523	. Miscellaneous specific techniques of general applicability	505/735	. . . by sol-gel process
502/524	. Spinel	505/736	. . From free metal precursors
502/525	. Perovskite	505/737	. . From inorganic salt precursors, e.g. nitrates
502/526	. Sorbent for fluid storage, other than an alloy for hydrogen storage	505/738	. . . by precipitating
502/52711	. Monolith of peculiar structure or physical form, with specified heat exchange capability	505/739	. . Molding, coating, shaping, or casting of superconducting material
502/52712	. Plural layers on a support, each layer having a distinct function	505/74	. . . To form wire or fiber
502/52713	. . More than two overlapping layers	505/741	. . . Coating or casting onto a substrate, e.g. screen printing, tape casting
502/52714	. Specified support particles of peculiar structure or physical form, e.g. whiskers, fiber pieces	505/742	. . Annealing
502/52715	. . Layered deposition on support particle, i.e. on a carrier particle	505/775	. High tc, above 30 k, superconducting material
502/52716	. . Specified shape of support particle, e.g. hollow-carrier particle	505/776	. . Containing transition metal oxide with rare earth or alkaline earth
502/52717	. . Specified cross-section shape or area of elongated support particles, e.g. tape, with area of cross section stated	505/777	. . . Lanthanum, e.g. La <sub>2</sub> CuO <sub>4</sub>
502/52718	. Monolith with specified gas flow patterns, e.g. turbulent flow monolith	505/778	. . . . Alkaline earth, i.e. Ca, Sr, Ba, Ra
502/52719	. Monolith with specified shape or dimension of cell opening, e.g. honeycomb, rings	505/779	. . . Other rare earth, i.e. Sc, Y, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu and alkaline earth, i.e. Ca, Sr, Ba, Ra
502/5272	. . Cell opening shape and dimensions are determined by the intersection of the warp and the warp of a woven structure, e.g. of a fabric or gauze	505/78	. . . . Yttrium and barium-, e.g. YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub>
502/52721	. . Cell openings are quadrilateral or triangular, e.g. pie shaped	505/781	. . . . Noble metal, i.e. Ag, Au, Os, Ir, Pt, Ru, Rh, Pd or chromium, manganese, iron, cobalt or nickel
502/52722	. . Cell openings are spiral or corrugated	505/782	. . . Bismuth-, e.g. BiCaSrCuO
502/52723	. Specified external or internal shape or configuration of catalyst reactor or of sorbent converter	505/783	. . . Thallium-, e.g. Tl <sub>2</sub> CaBaCu <sub>3</sub> O <sub>8</sub>
502/52724	. Peculiar structure or physical form, e.g. foam, sponge, foil, sack, bag, fiber in a matrix, monolith, microstructure, microcracking, or microaggregates	505/784	. . Bismuth-, e.g. BaKBiO
		505/785	. . Composition containing superconducting material and diverse nonsuperconducting material
		505/786	. Manufacturing system or apparatus for making high temperature, i.e. tc greater than 30 k superconductor product, device, article or stock, i.e. which system or apparatus does not itself contain a superconducting component
		505/80	. Material <u>per se</u> process of making same
		505/801	. . Composition
		505/802	. . . Organic
		505/803	. . . Magnetic
		505/804	. . . Amorphous alloy
		505/805	. . . Alloy or metallic
		505/806	. . . . Niobium base, Nb
		505/807	. . . Powder
		505/808	. . . Liquid crystal
		505/809	. . . Ceramic
<b>Superconductor technology: apparatus, material, process</b>			
<b>505/00</b>	<b>Superconductor technology: apparatus, material, process</b>		
505/70	. High TC, above 30 k, superconducting device, article, or structured stock		

- 505/81 . . Compound
- 505/811 . . . Organic
- 505/812 . . Stock
- 505/813 . . . Wire, tape, or film
- 505/814 . . . Treated metal
- 505/815 . . Process of making per se
- 505/816 . . . Sputtering, including coating, forming, or etching
- 505/817 . . . . forming josephson element
- 505/818 . . . . Coating
- 505/819 . . . . Vapor deposition
- 505/82 . . . . And etching
- 505/821 . . . . Wire
- 505/822 . . . Shaping
- 505/823 . . . Powder metallurgy
- 505/824 . . . Battery, thermo or photo-electric
- 505/825 . Apparatus per se, device per se, or process of making or operating same
- 505/826 . . Coating
- 505/827 . . Code converter
- 505/828 . . Modulator, demodulator, or detector
- 505/829 . . Electrical computer or data processing system
- 505/83 . . Electrical pulse counter, pulse divider, or shift register
- 505/831 . . Static information storage system or device
- 505/832 . . . Josephson junction type
- 505/833 . . . Thin film type
- 505/834 . . . . Plural, e.g. memory matrix
- 505/835 . . . . . Content addressed, i.e. associative memory type
- 505/836 . . . . . Location addressed, i.e. word organized memory type
- 505/837 . . . . . Random access, i.e. bit organized memory type
- 505/838 . . . Plural, e.g. memory matrix
- 505/839 . . . . Content addressed, i.e. associative memory type
- 505/84 . . . . Location addressed, i.e. word organized memory type
- 505/841 . . . . Random access, i.e. bit organized memory type
- 505/842 . . Measuring and testing
- 505/843 . . . Electrical
- 505/844 . . . . Nuclear magnetic resonance, NMR, system or device
- 505/845 . . . . Magnetometer
- 505/846 . . . . . using superconductive quantum interference device, i.e. squid
- 505/847 . . . Thermal
- 505/848 . . Radiant energy application
- 505/849 . . . Infrared responsive electric signaling
- 505/85 . . Protective circuit
- 505/851 . . Control circuit for electromagnetic device
- 505/852 . . Electric motor control
- 505/853 . . Oscillator
- 505/854 . . . with solid-state active element
- 505/855 . . Amplifier
- 505/856 . . Electrical transmission or interconnection system
- 505/857 . . . Nonlinear solid-state device system or circuit
- 505/858 . . . . Digital logic
- 505/859 . . . . . Function of and, or, nand, nor or not
- 505/86 . . . . Gating, i.e. switching circuit
- 505/861 . . . . . with josephson junction
- 505/862 . . . . . with thin film device
- 505/863 . . . . Stable state circuit for signal shaping, converting, or generating
- 505/864 . . . . . with josephson junction
- 505/865 . . . . with josephson junction
- 505/866 . . Wave transmission line, network, waveguide, or microwave storage device
- 505/867 . . Electric power conversion system
- 505/868 . . . Current conversion
- 505/869 . . Power supply, regulation, or energy storage system
- 505/87 . . . including transformer or inductor
- 505/871 . . Magnetic lens
- 505/872 . . Magnetic field shield
- 505/873 . . Active solid-state device
- 505/874 . . . with josephson junction, e.g. squid
- 505/875 . . . Combined with housing and cryogenic fluid cooling
- 505/876 . . Electrical generator or motor structure
- 505/877 . . . Rotary dynamoelectric type
- 505/878 . . . . with cooling
- 505/879 . . Magnet or electromagnet
- 505/88 . . Inductor
- 505/881 . . Resistance device responsive to magnetic field
- 505/882 . . Circuit maker or breaker
- 505/883 . . Housing and mounting assembly with plural diverse electrical components
- 505/884 . . Conductor
- 505/885 . . . Cooling, or feeding, circulating, or distributing fluid; in superconductive apparatus
- 505/886 . . . . Cable
- 505/887 . . . Conductor structure
- 505/888 . . Refrigeration
- 505/889 . . . Utilizing rare earth material
- 505/89 . . . Heat pipe device
- 505/891 . . . Magnetic or electrical effect cooling
- 505/892 . . . Magnetic device cooling
- 505/893 . . . . Spectrometer
- 505/894 . . . Cyclic cryogenic system, e.g. sterling, gifford-mcmahon
- 505/895 . . . . with regenerative heat exchanger
- 505/896 . . . Special refrigerant compound
- 505/897 . . . Cryogenic media transfer
- 505/898 . . . Cryogenic envelope
- 505/899 . . . Method of cooling
- 505/90 . . Heat exchange
- 505/901 . . . Heat pipe
- 505/902 . . Railway, e.g. rapid transit
- 505/903 . . . Suspension, e.g. magnetic, electrodynamic
- 505/904 . . . . Guidance means, i.e. in addition to the track
- 505/905 . . . . Motor structure
- 505/906 . . . . Switching device, i.e. electrical not railway stock diverting
- 505/907 . . . . Support structure
- 505/908 . . . . Method of operation
- 505/909 . . Power plant
- 505/91 . . Pump
- 505/911 . . Fluid reaction surface, i.e. impeller
- 505/912 . . Metal founding
- 505/913 . . . Casting process
- 505/914 . . . . using magnetic or electric field

- 505/915 . . . . Making composite product
- 505/916 . . . . Continuous casting
- 505/917 . . Mechanically manufacturing superconductor
- 505/918 . . . with metallurgical heat treating
- 505/919 . . . . Reactive formation of superconducting intermetallic compound
- 505/92 . . . . . Utilizing diffusion barrier
- 505/921 . . . . . Metal working prior to treating
- 505/922 . . . Making josephson junction device
- 505/923 . . . Making device having semiconductor component, e.g. integrated circuit
- 505/924 . . . Making superconductive magnet or coil
- 505/925 . . . Making superconductive joint
- 505/926 . . . Mechanically joining superconductive members
- 505/927 . . . Metallurgically bonding superconductive members
- 505/928 . . . Metal deforming
- 505/929 . . . . by extruding
- 505/93 . . . . by drawing
- 505/931 . . Classifying, separating, and assorting solids using magnetism
- 505/932 . . . Separating diverse particulates
- 505/933 . . . . in liquid slurry

#### **Earth boring, well treating, and oil field chemistry**

##### **507/00 Earth boring, well treating, and oil field chemistry**

- 507/901 . Organically modified inorganic solid
- 507/902 . Controlled release agent
- 507/903 . Crosslinked resin or polymer
- 507/904 . Process of making fluids or additives therefor
- 507/905 . Nontoxic composition
- 507/906 . Solid inorganic additive in defined physical form
- 507/907 . Indicating means, e.g. dye, fluorescing agent
- 507/91 . Earth boring fluid devoid of discrete aqueous phase
- 507/92 . Biocidal
- 507/921 . Specified breaker component for emulsion or gel
- 507/922 . Fracture fluid
- 507/923 . . Fracture acidizing
- 507/924 . . with specified propping feature
- 507/925 . Completion or workover fluid
- 507/926 . Packer fluid
- 507/927 . Well cleaning fluid
- 507/928 . . Spacing slug or preflush fluid
- 507/929 . . Cleaning organic contaminant
- 507/93 . . . Organic contaminant is asphaltic
- 507/931 . . . Organic contaminant is paraffinic
- 507/932 . . Cleaning sulfur deposits
- 507/933 . Acidizing or formation destroying
- 507/934 . . with inhibitor
- 507/935 . Enhanced oil recovery
- 507/936 . . Flooding the formation
- 507/937 . . . with emulsion
- 507/938 . . . . with microemulsion
- 507/939 . Corrosion inhibitor
- 507/94 . Freeing stuck object from wellbore

#### **Colloid systems and wetting agents; subcombinations thereof; processes of**

##### **516/00 Colloid systems and wetting agents; subcombinations thereof; processes of**

- 516/01 . Wetting, emulsifying, dispersing, or stabilizing agents
- 516/02 . . Organic and inorganic agents containing, except water
- 516/03 . . Organic sulfoxy compound containing
- 516/04 . . . Protein or carboxylic compound containing
- 516/05 . . . Organic amine, amide, or n-base containing
- 516/06 . . Protein or carboxylic compound containing
- 516/07 . . Organic amine, amide, or n-base containing
- 516/90 . Liquid crystal material of, or for, colloid system, e.g. g phase
- 516/901 . Substantially pure carbon, e.g. graphite, lamp black, carbon black, fullerenes
- 516/902 . Gelled emulsion
- 516/903 . Two or more gellants
- 516/904 . Fermentation foam breaking or inhibiting
- 516/905 . Agent composition per se for colloid system making or stabilizing, e.g. foaming, emulsifying, dispersing, or gelling
- 516/906 . . The agent contains organic compound containing silicon
- 516/907 . . The agent contains organic compound containing phosphorus, e.g. lecithin
- 516/908 . . . The compound contains repeating -OCnH2n-, i.e. repeating unsubstituted oxyalkylene
- 516/909 . . The agent contains organic compound containing sulfoxy\*
- 516/91 . . . The compound contains nitrogen, except if present solely as NH4+
- 516/911 . . . . The compound contains -S[O2]NHH where substitution may be made for the hydrogen
- 516/912 . . . . The compound contains -C[=O]NHH where substitution may be made for the hydrogen
- 516/913 . . . The compound contains -C[=O]OH or salt thereof
- 516/914 . . The agent contains organic compound containing nitrogen, except if present solely as NH4+
- 516/915 . . . The compound contains -C[=O]NHH where substitution may be made for the hydrogen
- 516/916 . . . The compound contains repeating -OCnH2n-, i.e. repeating unsubstituted oxyalkylene
- 516/917 . . The agent contains organic compound containing oxygen
- 516/918 . . . The compound contains carboxylic acid ester group
- 516/919 . . . The compound contains -C[=O]OH or salt thereof
- 516/92 . . . The compound contains repeating unsubstituted oxyalkylene
- 516/921 . Colloid systems having specified high purity, e.g. ultra-pure silica
- 516/922 . Colloid systems having specified particle size, range, or distribution, e.g. bimodal particle distribution
- 516/923 . . Emulsion
- 516/924 . Significant dispersive or manipulative operation or step in making or stabilizing colloid system
- 516/925 . . Phase inversion
- 516/926 . . Phase change, e.g. melting
- 516/927 . . in situ formation of a colloid system making or stabilizing agent which chemical reaction
- 516/928 . . Mixing combined with non-mixing operation or step, successively or simultaneously, e.g. heating, cooling, ph change, ageing, milling

- 516/929 . . Specified combination of agitation steps, e.g. mixing to make subcombination composition followed by homogenization
- 516/93 . . . Low shear followed by high shear
- 516/931 . . . High shear followed by low shear

- 522/914 . . Wavelength of 200 nanometers or less
- 522/915 . . involving inert gas, steam, nitrogen gas, or carbon dioxide

**Synthetic resins or natural rubbers -- part of the class 520 series**

- 521/00 Synthetic resins or natural rubbers -- part of the class 520 series**
- 521/901 . Cellular polymer containing a carbodiimide structure
  - 521/902 . Cellular polymer containing an isocyanurate structure
  - 521/903 . Cellular polymer having reduced smoke or gas generation
  - 521/904 . Polyurethane cellular product having high resiliency or cold cure property
  - 521/905 . Hydrophilic or hydrophobic cellular product
  - 521/906 . Polyurethane cellular product containing unreacted flame-retardant material
  - 521/907 . Nonurethane flameproofed cellular product
  - 521/908 . Nucleating agent for cellular product
  - 521/909 . Blowing-agent moderator, e.g. kickers
  - 521/91 . Plural blowing agents for producing nonpolyurethane cellular products
  - 521/911 . Surfactant for other than polyurethane cellular product
  - 521/912 . Separated reactive materials utilized in preparing cellular product
  - 521/913 . Cell forming in absence of external heat
  - 521/914 . Polyurethane cellular product formed from a polyol which has been derived from at least two 1,2 epoxides as reactants
  - 521/915 . Utilizing electrical or wave energy during cell forming process
  - 521/916 . Cellular product having enhanced degradability
  - 521/917 . Specialized mixing apparatus utilized in cell forming process
  - 521/918 . Physical aftertreatment of a cellular product
  - 521/919 . Sintered product
  - 521/92 . Cellular product containing a dye or pigment
  - 521/921 . Preparing a nonpolyurethane cellular particle from a nonparticulate material

**Synthetic resins or natural rubbers -- part of the class 520 series**

- 522/00 Synthetic resins or natural rubbers -- part of the class 520 series**
- 522/901 . Dark storage stabilizer
  - 522/902 . Air inhibition
  - 522/903 . Removal of residual monomer
  - 522/904 . Monomer or polymer contains initiating group
  - 522/905 . . Benzophenone group
  - 522/906 . Preparing shrinkable material
  - 522/907 . involving precursor of an ultraviolet absorber, e.g. monobenzoate
  - 522/908 . Dental utility
  - 522/909 . Solventless ink
  - 522/91 . Treatment through an external filter or mask, nonphotographic process
  - 522/911 . Specified treatment involving megard or less
  - 522/912 . . Polymer derived from ethylenic monomers only
  - 522/913 . Numerically specified distinct wavelength

**Synthetic resins or natural rubbers -- part of the class 520 series**

- 524/00 Synthetic resins or natural rubbers -- part of the class 520 series**
- 524/90 . Antigen-antibody
  - 524/901 . Electrodepositable compositions
  - 524/902 . . Electrostatic spray
  - 524/903 . Aerosol compositions
  - 524/904 . Powder coating compositions
  - 524/905 . Etch masking compositions
  - 524/906 . Multipackage compositions
  - 524/907 . Additive of specified shape other than fiber, particle, or powder
  - 524/908 . Composition having specified shape, e.g. rod, stick, or ball, and other than sheet, film, or fiber
  - 524/909 . Reverse osmosis membrane compositions, e.g. desalinization
  - 524/91 . Antistatic compositions
  - 524/911 . . Composition to apply to a substrate to be destaticized
  - 524/912 . . Contains metal, boron, phosphorus, or silicon
  - 524/913 . . Contains nitrogen nonreactant material
  - 524/914 . Floor covering compositions
  - 524/915 . Carpet backing adhesives
  - 524/916 . Hydrogel compositions
  - 524/917 . Oil spill recovery compositions
  - 524/918 . Wood patching composition
  - 524/919 . Metal patching composition, e.g. body solder
  - 524/92 . Coilable pipe compositions
  - 524/921 . Elastic memory or heat shrinkable compositions
  - 524/922 . Flocculating, clarifying, or fining compositions
  - 524/923 . Treating or preparing a nonaqueous dispersion or emulsion of a solid polymer or specified intermediate condensation product
  - 524/924 . Treating or preparing a nonaqueous solution of a solid polymer or specified intermediate condensation product
  - 524/925 . Natural rubber compositions having nonreactive materials, i.e. NRM, other than: carbon, silicon dioxide, glass titanium dioxide, water, hydrocarbon or halo hydrocarbon
  - 524/926 . . with water as NRM, exemplified
  - 524/929 . . Natural rubber broadly disclosed, nonclaimed

**Synthetic resins or natural rubbers -- part of the class 520 series**

- 525/00 Synthetic resins or natural rubbers -- part of the class 520 series**
- 525/901 . Radial block
  - 525/902 . Core-shell
  - 525/903 . Interpenetrating network
  - 525/904 . Activation of preformed polymer in absence or monomer, for subsequent polymerization thereon, e.g. trapped radicals
  - 525/905 . Polyphenylene oxide
  - 525/906 . Polysulfone
  - 525/907 . Polycarbodiimide
  - 525/908 . Polymer containing a hydantoin group
  - 525/909 . Polymer having a heterocyclic ring with at least three different elements within the ring

- |         |  |         |   |
|---------|--|---------|---|
| 525/91  | . Polymer from ethylenic monomers only, having terminal unsaturation   | 526/901 | . Monomer polymerized in vapor state in presence of transition metal containing catalyst  |
| 525/911 | . Polymer from ethylenic monomers only, having terminal functional group other than unsaturation   | 526/902 | . Monomer polymerized in bulk in presence of transition metal containing catalyst   |
| 525/912 | . Polymer from nonethylenic monomers only, having pendant unsaturated group  | 526/903 | . Monomer polymerized in presence of transition metal containing catalyst and hydrocarbon additive affecting polymer properties of catalyst activity      |
| 525/913 | . Polymer from monomers only having pendant glycidyl group   | 526/904 | . Monomer polymerized in presence of transition metal containing catalyst at least part of which is supported on a polymer, e.g. prepolymerized catalysts |
| 525/914 | . Polymer from conjugated diene hydrocarbon or halohydrocarbons having more than 50 per cent 1,2-microstructure  | 526/905 | . Polymerization in presence of transition metal containing catalyst in presence of hydrogen  |
| 525/915 | . Polymer from monoethylenic cyclic hydrocarbon  | 526/906 | . Comminution of transition metal containing catalyst   |
| 525/916 | . Polymer from ethylenic monomers only, having cationic group  | 526/907 | . Specified means of reacting components of transition metal catalyst   |
| 525/917 | . Polymer from at least one nonethylenic monomer having cationic group   | 526/908 | . Containing catalyst of specified particle size  |
| 525/918 | . Polymer prepared by cationic polymerization  | 526/909 | . Polymerization characterized by particle size of product  |
| 525/919 | . Ionomer resins, carboxylate salt-containing copolymers   | 526/91  | . Suspending agents   |
| 525/92  | . Polyurethane having terminal ethylenic unsaturation  | 526/911 | . Emulsifying agents  |
| 525/921 | . Polyester having terminal ethylenic unsaturation other than polyesterurethanes   | 526/912 | . Reaction medium purification  |
| 525/922 | . Polyepoxide polymer having been reacted to yield terminal ethylenic unsaturation   | 526/913 | . Vapor phase polymerization in absence of transition metal containing catalyst   |
| 525/923 | . Aminoplast having terminal ethylenic unsaturation  | 526/914 | . Polymer degradation   |
| 525/924 | . Phenoplast having terminal ethylenic unsaturation  | 526/915 | . Redox catalyst  |
| 525/925 | . Polymer from at least one nonethylenic monomer having terminal ethylenic unsaturation other than polyurethanes, polyesters, polyepoxides, aminoplasts, and phenoplasts | 526/916 | . Interpolymer from at least three ethylenically unsaturated monoolefinic hydrocarbon monomers  |
| 525/926 | . Polyamide containing a plurality of oxyalkylene groups   | 526/917 | . Manipulative processes involving a sulfur-containing treating agent   |
| 525/927 | . Polyamide admixed with oxyalkylene-containing polymer  | 526/918 | . Polymerization reactors for addition polymer preparation  |
| 525/928 | . Polyimide or polyamide-acid formed by condensation of a polyamine with a polycarboxylic acid having at least three carboxyl groups or derivatives thereof              | 526/919 | . Catalyst injection technique in addition polymerization processes   |
| 525/929 | . Polyimide formed by addition of polyamine to an unsaturated bis-imide  | 526/92  | . Apparatus for use in addition polymerization processes  |
| 525/93  | . Reaction product of a polyhydric phenol and epichlorohydrin or diepoxide, having a molecular weight of over 5,000, e.g. phenoxy resins                                 | 526/921 | . Time cycle used in addition polymerization process control  |
| 525/931 | . Blend of stated incompatibility  | 526/922 | . Polymerization process of ethylenic monomers using manipulative technique   |
| 525/932 | . Blend of matched optical properties  | 526/923 | . Ethylenic monomers containing at least one salt group   |
| 525/933 | . Blend of limited gas permeability  | 526/93  | . Water swellable or hydrophilic  |
| 525/934 | . Powdered coating composition   | 526/931 | . Pressure sensitive adhesive   |
| 525/935 | . Matrix admixed with synthetic fiber  | 526/932 | . Thickener or dispersant for aqueous system  |
| 525/936 | . Encapsulated chemical agent  | 526/933 | . Detergent property or lubricant additive  |
| 525/937 | . Utility as body contact e.g. implant, contact lens or I.U.D.   | 526/934 | . Electrodeposit, e.g. electrophoretic, xerographic   |
| 525/938 | . Polymer degradation  | 526/935 | . Hot melt adhesive   |
| 525/939 | . Multipackage system  | 526/936 | . Physiological use, e.g. pharmaceutical, veterinary, dental  |
| 525/94  | . Hydrogenation of a polymer   | 526/937 | . Optical clarity   |
| 525/941 | . Polymer mixture containing block copolymer is mixed or reacted with chemical treating agent  | 526/938 | . Rubbery property  |
| 525/942 | . Polymer derived from nitrile, conjugated diene and aromatic co-monomers  | 526/939 | . Moisture proof or hydrophobic   |
|         |  | 526/94  | . High softening temperature, e.g. exposure to boiling water, boilable  |
|         |  | 526/941 | . having the transition metal bonded directly to carbon   |
|         |  | 526/942 | . Polymerization in the presence of a liquid co2 diluent  |
|         |  | 526/943 | . Polymerization with metallocene catalysts   |

**Synthetic resins or natural rubbers -- part of the class 520 series**

**526/00 Synthetic resins or natural rubbers -- part of the class 520 series**

**Synthetic resins or natural rubbers -- part of the class 520 series**

- 528/00 Synthetic resins or natural rubbers -- part of the class 520 series**
- 528/901 . Room temperature curable silicon-containing polymer
  - 528/902 . Particulate material prepared from an isocyanate
  - 528/903 . Polymerizing or processing an isocyanate under substantially anhydrous conditions
  - 528/904 . Isocyanate polymer having stated hydrophilic or hydrophobic property
  - 528/905 . Polymer prepared from isocyanate reactant has adhesive property
  - 528/906 . Fiber or elastomer prepared from an isocyanate reactant
  - 528/92 . Polymers useful for replacing hard animal tissues, e.g. dentures, bones
  - 528/93 . Guayule rubber
  - 528/931 . Physical treatment of natural rubber or natural rubber containing material or chemical treatment of non-rubber portion thereof, e.g. extraction of rubber from milk weed
  - 528/932 . . Protein removal or conversion
  - 528/933 . . Resin removal or conversion
  - 528/934 . . Latex
  - 528/935 . . . Preserving or stabilizing
  - 528/936 . . . Coagulating
  - 528/937 . . . Concentrating, e.g. creaming

**Chemistry: natural resins or derivatives; peptides or proteins; lignins or reaction products thereof**

- 530/00 Chemistry: natural resins or derivatives; peptides or proteins; lignins or reaction products thereof**
- 530/80 . Antihypertensive peptides
  - 530/801 . Peptide sweeteners
  - 530/802 . Chromogenic or luminescent peptides
  - 530/806 . Antigenic peptides or proteins
  - 530/807 . Hapten conjugated with peptide or protein
  - 530/808 . Materials and products related to genetic engineering or hybrid or fused cell technology, e.g. hybridoma, monoclonal products
  - 530/809 . . Fused cells, e.g. hybridoma
  - 530/81 . Carrier - bound or immobilized peptides or proteins and the preparation thereof, e.g. biological cell or cell fragment as carrier
  - 530/811 . . Peptides or proteins is immobilized on, or in, an inorganic carrier
  - 530/812 . . Peptides or proteins is immobilized on, or in, an organic carrier
  - 530/813 . . . Carrier is a saccharide
  - 530/814 . . . . Cellulose or derivatives thereof
  - 530/815 . . . Carrier is a synthetic polymer
  - 530/816 . . . . Attached to the carrier via a bridging agent
  - 530/817 . . . . Entrapped within the carrier, e.g. gel, hollow fibre
  - 530/82 . Proteins from microorganisms
  - 530/821 . . Separation of nucleic acid
  - 530/822 . . Protozoa
  - 530/823 . . Lower fungi, e.g. mold
  - 530/824 . . . Yeasts
  - 530/825 . . Bacteria
  - 530/826 . . Viruses
  - 530/827 . Proteins from mammals or birds

- 530/828 . . Cancer
- 530/829 . . Blood
- 530/83 . . . Plasma; serum
- 530/831 . . . . Cohn fractions
- 530/832 . . Milk; colostrum
- 530/833 . . Whey; cheese
- 530/834 . . Urine; urinary system
- 530/835 . . . Kidney
- 530/836 . . Mucus; mucous glands; bursa; arthral fluid; spinal fluid
- 530/837 . . Lymph; lymph-glands; thymus
- 530/838 . . Marrow; spleen
- 530/839 . . Nerves; brain
- 530/84 . . Bones; tendons; teeth; cartilage
- 530/841 . . Muscles; heart
- 530/842 . . Skin; hair; nails; sebaceous glands; cerumen
- 530/843 . . Digestive system
- 530/844 . . . Stomach; intestine
- 530/845 . . . Pancreas
- 530/846 . . . Liver
- 530/847 . . . Bile
- 530/848 . . Lungs
- 530/849 . . Eyes; vessels; umbilical cord
- 530/85 . . Reproductive organs or embryos
- 530/851 . . . Placenta; amniotic fluid
- 530/852 . . . Sperm
- 530/853 . . . . Ovary; eggs; embryos
- 530/854 . . Glands
- 530/855 . Proteins from animals other than mammals or birds
- 530/856 . . Snakes; venom
- 530/857 . . Fish; fish eggs; shell fish; crustacea
- 530/858 . . insects; venom
- 530/859 . Waste, waste material, refuse or sludge, e.g. effluents, fecal matter
- 530/86 . Renin inhibitors
- 530/861 . involving IgG3, IgG4, IgA, or IgY
- 530/862 . involving IgE or IgD
- 530/863 . involving IgM
- 530/864 . . Monoclonal
- 530/865 . . . Human
- 530/866 . involving immunoglobulin or antibody fragment, e.g. fab', fab, fv, fc, heavy chain or light chain
- 530/867 . involving immunoglobulin or antibody produced via recombinant dna technology
- 530/868 . involving autoimmunity, allergy, immediate hypersensitivity, delayed hypersensitivity, immunosuppression, or immunotolerance

**Organic compounds -- part of the class 532-570 series**

- 534/00 Organic compounds -- part of the class 532-570 series**
- 534/01 . Mixtures of azo compounds
  - 534/02 . Azo compounds containing chains of eight or more carbon atoms not provided for elsewhere in this class
  - 534/03 . Polymeric azo compounds or azo compounds containing polymeric moieties
  - 534/04 . Azo compounds which are lakes
  - 534/05 . Azo compounds having utility other than as dyes
  - 534/06 . Azo compounds containing -N[O]-N=, -N=S, or -SO<sub>2</sub>N<sub>3</sub> groups

- 534/07 . Automatic and/or continuous temperature control in the preparation of azo compounds
- 534/08 . Elimination of groups during the preparation of azo compounds
- 534/09 . Azo compounds containing ternary sulfonium groups
- 534/10 . Azo compounds containing formaldehyde reaction product as the coupling component

- 585/953 . . Pulsed, sonic, or plasma process
- 585/954 . . Exploiting mass-action phenomenon
- 585/955 . . Specified mixing procedure
- 585/956 . . Condition-responsive control and related procedures in alicyclic synthesis and purification

**Chemistry of hydrocarbon compounds**

- 585/00 Chemistry of hydrocarbon compounds**
- 585/8995 . Catalyst and recycle considerations
  - 585/90 . . Rehabilitation of H acceptor
  - 585/901 . . with recycle, rehabilitation, or preservation of solvent, diluent, or mass action agent
  - 585/902 . . . Recycle of solvent and catalyst
  - 585/903 . . with hydrocarbon recycle to control synthesis reaction, e.g. by cooling, quenching
  - 585/904 . . Catalyst rehabilitation by reversion from different compound
  - 585/905 . . by-product conversion to feed
  - 585/906 . . Catalyst preservation or manufacture, e.g. activation before use
  - 585/909 . Heat considerations
  - 585/91 . . Exploiting or conserving heat of quenching, reaction, or regeneration
  - 585/911 . . introducing, maintaining, or removing heat by atypical procedure
  - 585/912 . . . Molten material
  - 585/913 . . . Electric
  - 585/914 . . . Phase change, e.g. evaporation
  - 585/919 . Apparatus considerations
  - 585/92 . . using apparatus of recited composition
  - 585/921 . . using recited apparatus structure
  - 585/922 . . . Reactor fluid manipulating device
  - 585/923 . . . . At reactor inlet
  - 585/924 . . . Reactor shape or disposition
  - 585/925 . . . . Dimension or proportion
  - 585/926 . . . . Plurality or verticality
  - 585/929 . Special chemical considerations
  - 585/93 . . Process including synthesis of nonhydrocarbon intermediate
  - 585/931 . . . Metal-, Si-, B-, or P-containing, e.g. Grignard
  - 585/932 . . . Carboxyl-containing, e.g. acid
  - 585/933 . . . N-containing
  - 585/934 . . . Chalcogen-containing
  - 585/935 . . . Halogen-containing
  - 585/94 . . Opening of hydrocarbon ring
  - 585/941 . . Isotope exchange process
  - 585/942 . . Production of carbonium ion or hydrocarbon free-radical
  - 585/943 . . Synthesis from methane or inorganic carbon source, e.g. coal
  - 585/944 . . Radiation-resistant composition
  - 585/945 . . Product is drying oil
  - 585/946 . . Product is waxy polymer
  - 585/947 . . Terpene manufacture or recovery
  - 585/949 . Miscellaneous considerations
  - 585/95 . . Prevention or removal of corrosion or solid deposits
  - 585/951 . . Reaction start-up procedure
  - 585/952 . . Reaction stopping or retarding

**Hazardous or toxic waste destruction or containment**

- 588/00 Hazardous or toxic waste destruction or containment**
- 588/90 . Apparatus
  - 588/901 . Compositions

**Surgery**

- 600/00 Surgery**
- 600/92 . Method of making endoscopes
  - 600/921 . Manipulating image characteristics

**Surgery: kinesitherapy**

- 601/00 Surgery: kinesitherapy**
- 601/01 . with thermal application
  - 601/02 . . with fluid supply
  - 601/03 . with electrical application
  - 601/04 . with magnetic application
  - 601/05 . with light application
  - 601/06 . Artificial respiration conforming to shape of torso
  - 601/07 . . Inflatable
  - 601/08 . Artificial respiration with computer control
  - 601/09 . . including biological sensors
  - 601/10 . Artificial respiration combined with non-artificial respiration therapy
  - 601/11 . Artificial respiration using vibration frequency
  - 601/12 . Vibrator with computer control
  - 601/13 . . including biological sensor
  - 601/14 . Vibrator applied to specific external body area
  - 601/15 . . Head, face, neck, scalp
  - 601/16 . . Genital area
  - 601/17 . . Foot
  - 601/18 . Device with applicator having specific movement controlled by computer
  - 601/19 . . including biological sensor
  - 601/20 . Flexible membrane caused to be moved
  - 601/21 . Kinesitherapy with computer control
  - 601/22 . . Applicator having computer motion control
  - 601/23 . . including biological sensors

**Surgery: splint, brace, or bandage**

- 602/00 Surgery: splint, brace, or bandage**
- 602/90 . Method of making bandage structure
  - 602/901 . Tubular bandage applicators
  - 602/902 . Antisnoring or mouth closing devices
  - 602/903 . Surgical tape
  - 602/904 . Film-forming bandage material

**Surgery**

- 604/00 Surgery**
- 604/90 . Telltale showing entry of blood into body inserted conduit
  - 604/901 . Injection device with thermometer
  - 604/902 . Suction wands
  - 604/903 . Medical container with material agitation means

- 604/904 . Tampons
- 604/905 . Aseptic connectors or couplings, e.g. frangible, piercable
- 604/906 . Artificial insemination

**Surgery**

- 606/00 Surgery**
- 606/90 . Lumbar stabilizer
- 606/901 . Thoracic stabilizer
- 606/902 . Cortical plate specifically adapted for a particular bone
- 606/903 . . Cranial and facial plate
- 606/904 . . . Jaw plate
- 606/905 . . Rib or sternum plate
- 606/906 . . Small bone plate
- 606/907 . Composed of particular material or coated
- 606/908 . . Bioabsorbable material
- 606/909 . . Bone
- 606/91 . . Polymer
- 606/911 . . Memory material
- 606/912 . . Radiolucent material
- 606/913 . . Monolithic
- 606/914 . Toolkit for installing or removing spinal positioner or stabilizer
- 606/915 . Toolkit for installing or removing cortical plate
- 606/916 . Tool for installing or removing orthopedic fastener

**Surgery: light, thermal, and electrical application**

- 607/00 Surgery: light, thermal, and electrical application**
- 607/90 . Substance abuse therapy
- 607/901 . Cancer detection
- 607/902 . Fetal monitoring other than heart rate

**Prosthesis, i.e. artificial body members, parts thereof, or aids and accessories therefor**

- 623/00 Prosthesis, i.e. artificial body members, parts thereof, or aids and accessories therefor**
- 623/90 . Stent for heart valve
- 623/901 . Method of manufacturing prosthetic device
- 623/902 . Method of implanting
- 623/903 . . Blood vessel
- 623/904 . . Heart
- 623/905 . . Eye
- 623/906 . . . Corneal
- 623/907 . . . Method of manipulating parts of intraocular lens structure for implantation
- 623/908 . . Bone
- 623/909 . Method or apparatus for assembling prosthetic
- 623/91 . . Heart
- 623/911 . . Bone
- 623/912 . Method or apparatus for measuring or testing prosthetic
- 623/913 . . Heart
- 623/914 . . Bone
- 623/915 . Method or apparatus for preparing biological material
- 623/916 . . Blood vessel
- 623/917 . . . Collagen
- 623/918 . . Heart
- 623/919 . . Bone

- 623/92 . Method or apparatus for preparing or treating prosthetic
- 623/921 . . Blood vessel
- 623/922 . . Heart
- 623/923 . . Bone
- 623/924 . Material characteristic
- 623/925 . . Natural
- 623/926 . . Synthetic

**Data processing: generic control systems or specific applications**

- 700/00 Data processing: generic control systems or specific applications**
- 700/90 . Special robot structural element

**Data processing: financial, business practice, management, or cost/price determination**

- 705/00 Data processing: financial, business practice, management, or cost/price determination**
- 705/901 . Digital rights management
- 705/902 . . Licensing digital content
- 705/903 . . . Adding plural layer of rights or limitations by other than the original producer
- 705/904 . . Usage protection of distributed files
- 705/905 . . . Hardware usage protection
- 705/906 . . . Requiring a supplemental attachment or input, e.g. Dongle, to open
- 705/907 . . . . Specific computer id, e.g. serial number, configuration
- 705/908 . . . Software or content usage protection
- 705/909 . . . Usage charge determination
- 705/91 . . . . including third party for collecting or distributing payment, e.g. Clearing house
- 705/911 . . Copy protection or prevention
- 705/912 . . . having origin or program id

**Data processing: artificial intelligence**

- 706/00 Data processing: artificial intelligence**
- 706/90 . Fuzzy logic
- 706/902 . Application using ai with detail of the ai system
- 706/903 . . Control
- 706/904 . . . Manufacturing or machine, e.g. agricultural machinery, machine tool
- 706/905 . . . Vehicle or aerospace
- 706/906 . . . Process plant
- 706/907 . . . . Power plant
- 706/908 . . . Electronic or computer, internal or network, circuit
- 706/909 . . . Communication
- 706/91 . . . Elevator
- 706/911 . . Nonmedical diagnostics
- 706/912 . . . Manufacturing or machine, e.g. agricultural machinery, machine tool
- 706/913 . . . Vehicle or aerospace
- 706/914 . . . Process plant
- 706/915 . . . . Power plant
- 706/916 . . . Electronic or computer, internal or network, circuit
- 706/917 . . . Communication
- 706/918 . . . Elevator
- 706/919 . . Designing, planning, programming, CAD, CASE
- 706/92 . . . Simulation

- 706/921 . . . Layout, e.g. circuit, construction
- 706/922 . . . Computer program preparation
- 706/923 . . . Construction
- 706/924 . . Medical
- 706/925 . . Business
- 706/926 . . . Time management
- 706/927 . . Education or instruction
- 706/928 . . Earth science
- 706/929 . . . Geological, e.g. seismology
- 706/93 . . . Environment
- 706/931 . . . . Weather
- 706/932 . . Mathematics, science, or engineering
- 706/933 . . Law, law enforcement, or government
- 706/934 . . Information retrieval or Information management

### **Data processing: database and file management or data structures**

#### **707/00 Data processing: database and file management or data structures**

- 707/912 . Applications of a database
- 707/913 . . Multimedia
- 707/914 . . . Video
- 707/915 . . . Image
- 707/916 . . . Audio
- 707/917 . . Text
- 707/918 . . Location
- 707/919 . . . Geographic
- 707/92 . . . . Navigation
- 707/921 . . . Spatial
- 707/922 . . Communications
- 707/923 . . Intellectual property
- 707/924 . . . Patent procedure
- 707/925 . . . . Drafting an application
- 707/926 . . . . Drafting drawing or figures
- 707/927 . . . . Validation
- 707/928 . . . . Electronic submission
- 707/929 . . . . Docketing
- 707/93 . . . intellectual property analysis
- 707/931 . . . . Patent comparison
- 707/932 . . . . . Infringement detection
- 707/933 . . . . Citation analysis
- 707/934 . . . . . Analyzing patent activity
- 707/935 . . . . . Company or stock valuation
- 707/936 . . . for use in research and development
- 707/937 . . . intellectual property searching
- 707/938 . . . intellectual property markets
- 707/939 . . . Idea solicitation
- 707/94 . . Infrastructure
- 707/941 . . Human sciences
- 707/942 . . Legal/academic
- 707/943 . . News
- 707/944 . . Business related
- 707/945 . . . Contract negotiation
- 707/946 . . . Real estate
- 707/947 . . . Human resources
- 707/948 . . . Product or catalog
- 707/949 . . . Inventory
- 707/95 . . Financial
- 707/951 . . Calendar or scheduling
- 707/952 . . Malicious software
- 707/953 . . Organization of data

- 707/954 . . Relational
- 707/955 . . Object-oriented
- 707/956 . . Hierarchical
- 707/957 . . Multidimensional
- 707/958 . . Data cubes
- 707/959 . . Network
- 707/96 . . Object-relational
- 707/961 . . Associative
- 707/962 . . Entity-attribute-value
- 707/963 . . Hybrid
- 707/964 . Database arrangement
- 707/965 . . Standalone
- 707/966 . . Distributed
- 707/967 . . . Peer-to-peer
- 707/968 . . . . Partitioning
- 707/969 . . . . . Horizontal partitioning
- 707/97 . . . . . Vertical partitioning
- 707/971 . . . Federated
- 707/972 . . . . Partitioning
- 707/973 . . . . . Horizontal partitioning
- 707/974 . . . . . Vertical partitioning
- 707/975 . . Portable database architecture
- 707/99931 . Database or file accessing
- 707/99932 . . Access augmentation or optimizing
- 707/99933 . . Query processing, i.e. searching
- 707/99934 . . . Query formulation, input preparation, or translation
- 707/99935 . . . Query augmenting and refining, e.g. inexact access
- 707/99936 . . . Pattern matching access
- 707/99937 . . Sorting
- 707/99938 . . Concurrency, e.g. lock management in shared database
- 707/99939 . . Privileged access
- 707/9994 . . Distributed or remote access
- 707/99941 . Database schema or data structure
- 707/99942 . . Manipulating data structure, e.g. compression, compaction, compilation
- 707/99943 . . Generating database or data structure, e.g. via user interface
- 707/99944 . . Object-oriented database structure
- 707/99945 . . . Object-oriented database structure processing
- 707/99946 . . . Object-oriented database structure network
- 707/99947 . . . Object-oriented database structure reference
- 707/99948 . . Application of database or data structure, e.g. distributed, multimedia, or image
- 707/99951 . File or database maintenance
- 707/99952 . . Coherency, e.g. same view to multiple users
- 707/99953 . . . Recoverability
- 707/99954 . . . Version management
- 707/99955 . . . Archiving or backup
- 707/99956 . . File allocation
- 707/99957 . . . Garbage collection

### **Data processing: presentation processing of document, operator interface processing, and screen saver display processing**

- 715/00 Data processing: presentation processing of document, operator interface processing, and screen saver display processing**
- 715/961 . Operator interface with visual structure or function dictated by intended use
- 715/962 . . Operator interface for marketing or sales

- 715/963 . . Calendar or scheduling
- 715/964 . . CAD or CAM, e.g. interactive design tools
- 715/965 . . for process control and configuration
- 715/966 . . . Computer process, e.g. operation of computer
- 715/967 . . . . Visual or iconic programming
- 715/968 . . . . interface for database querying and retrieval
- 715/969 . . . Network layout and operation interface
- 715/97 . . . Instrumentation and component modelling, e.g. interactive control panel
- 715/9701 . . Amusement or marital aid interface
- 715/971 . Cooperative decision support systems for group of users
- 715/972 . Inserted real-time video in operator interface
- 715/973 . Scroll tool, e.g. window scroll bar
- 715/974 . Slider control as on-screen object in operator interface
- 715/975 . Pop-up dialog box for entry
- 715/976 . 3-D Icon
- 715/977 . Dynamic icon, e.g. animated or live action
- 715/978 . Audio interaction as part of an operator interface

- 901/36 . . . Actuating means
- 901/37 . . . . Fluid motor
- 901/38 . . . . Electric motor
- 901/39 . . . Jaw structure
- 901/40 . . Vacuum or mangetic
- 901/41 . . Tool
- 901/42 . . . Welding
- 901/43 . . . Spray painting or coating
- 901/44 . . inspection
- 901/45 . . Compliance
- 901/46 . Sensing device
- 901/47 . . Optical
- 901/48 . Counterbalance
- 901/49 . Protective device
- 901/50 . Miscellaneous

**Electronic funds transfer**

- 902/00 Electronic funds transfer**
- 902/01 . with electronic means providing security
- 902/02 . . Protects transmitted data, e.g. encryption or decryption
- 902/03 . . Evaluates biometrics
- 902/04 . . Means to read data stored on identifier\*
- 902/05 . . . And to verify identity of user\*
- 902/06 . . Image processor, e.g. video camera
- 902/07 . . Means to identify counterfeit money
- 902/08 . Terminal\* with means permitting deposit or withdrawal, e.g. ATM
- 902/09 . . with secure receptacle, e.g. safe, depository
- 902/10 . . . Remote from terminal
- 902/11 . . . And value discriminator
- 902/12 . . . Serving as both depository and source for, e.g. note dispensing recycling
- 902/13 . . . Dispensing, e.g. money cassette
- 902/14 . . with cash dispenser
- 902/15 . . . including currency feeder
- 902/16 . . . . Sensitive to erroneous passage of plural bills
- 902/17 . . with particular feeder or counter feature
- 902/18 . . with printer
- 902/19 . . . And page turner
- 902/20 . . with specific data input means, e.g. keyboard
- 902/21 . . with specific data output means or indicator
- 902/22 . Terminal\* registers transaction\*, e.g. point of sale terminal\*
- 902/23 . for entertainment, amusement, or gambling
- 902/24 . for use with general purpose terminal\*, e.g. home banking
- 902/25 . Specific identifier\*, e.g. bank card
- 902/26 . . including semiconductor chip, e.g. smart card
- 902/27 . . Magnetically encoded
- 902/28 . . . Designed to resist counterfeiting
- 902/29 . . Specific process of manufacture
- 902/30 . Support or enclosure, e.g. kiosk
- 902/31 . . Selectively prevents access to terminal\*
- 902/32 . . for plurality of terminals\*
- 902/33 . . for drive-in installation
- 902/34 . . Collapsible
- 902/35 . . Accommodates user, i.e. walk-in enclosure
- 902/36 . Paper supply, e.g. receipt
- 902/37 . System\*
- 902/38 . . Error or fault recovery

**Robots**

- 901/00 Robots**
- 901/01 . Mobile robot
- 901/02 . Arm motion controller
- 901/03 . . Teaching system
- 901/04 . . . Manual lead through
- 901/05 . . . Machine driven lead through
- 901/06 . . Communication with another machine
- 901/07 . . . Conveyor
- 901/08 . . . Robot
- 901/09 . . Closed loop, sensor feedback controls arm movement
- 901/10 . . . Sensor physically contacts and follows work contour
- 901/11 . . Mechanically actuated present limit
- 901/12 . . . Cam
- 901/13 . . . Limit switch
- 901/14 . Arm movement, spatial
- 901/15 . . Jointed arm
- 901/16 . . Cartesian, three degrees of freedom
- 901/17 . . Cylindrical
- 901/18 . . Spherical
- 901/19 . Drive system for arm
- 901/20 . . with provision for altering speed of driven element
- 901/21 . . Flaccid drive element
- 901/22 . . Fluid motor
- 901/23 . . Electric motor
- 901/24 . . . Stepper motor
- 901/25 . . Gearing
- 901/26 . . . including bevel gear
- 901/27 . Arm part
- 901/28 . . Joint
- 901/29 . . . Wrist
- 901/30 . End effector
- 901/31 . . Gripping jaw
- 901/32 . . . Servo-actuated
- 901/33 . . . . Tactile sensor
- 901/34 . . . . force feedback
- 901/35 . . . . Proximity

- 902/39 . . Particular communication feature
- 902/40 . . Transaction\* processing
- 902/41 . . Miscellaneous

**Hybrid electric vehicles, HEVS**

- 903/00 Hybrid electric vehicles, HEVS**
- 903/902 . Prime movers comprising electrical and internal combustion motors
- 903/903 . . having energy storing means, e.g. battery, capacitor
- 903/904 . . . Component specially adapted for hev
- 903/905 . . . . Combustion engine
- 903/906 . . . . Motor or generator
- 903/907 . . . . Electricity storage, e.g. battery, capacitor
- 903/908 . . . . Fuel cell
- 903/909 . . . . Gearing
- 903/91 . . . . . Orbital, e.g. planetary gears
- 903/911 . . . . . with two or more gear sets
- 903/912 . . . . Drive line clutch
- 903/913 . . . . . One way
- 903/914 . . . . . Actuated, e.g. engaged or disengaged by electrical, hydraulic or mechanical means
- 903/915 . . . . Specific drive or transmission adapted for hev
- 903/916 . . . . . with plurality of drive axles
- 903/917 . . . . . with transmission for changing gear ratio
- 903/918 . . . . . Continuously variable
- 903/919 . . . . . Stepped shift
- 903/93 . . . Conjoint control of different elements
- 903/944 . . . Characterized by control of fuel cell
- 903/945 . . . Characterized by control of gearing, e.g. control of transmission ratio
- 903/946 . . . Characterized by control of driveline clutch
- 903/947 . . . Characterized by control of braking, e.g. blending of regeneration, friction braking
- 903/951 . . . Assembly or relative location of components
- 903/952 . . . Housing details
- 903/96 . . . having chargeable mechanical accumulator

**Peptide or protein sequence**

- 930/00 Peptide or protein sequence**
- 930/01 . Peptide or protein sequence
- 930/02 . . Containing modified or unusual amino acid
- 930/021 . . . Containing D-amino acid
- 930/022 . . . Containing radioactive atom
- 930/023 . . . Containing halogen
- 930/024 . . . Containing sulfur
- 930/025 . . . Containing heavy metal or salt thereof
- 930/03 . . Linear peptide or protein containing a nonpeptide or abnormal peptide link
- 930/031 . . . Retro-inverted
- 930/04 . . Angiotensin; related peptides
- 930/05 . . Atrial or brain natriuretic peptide; related peptides
- 930/06 . . Calcitonin; related peptides
- 930/07 . . Corticotropin; related peptides
- 930/08 . . Endorphin or enkephalin; related peptides
- 930/09 . . Erythropoietin; related peptides
- 930/10 . . Factor VIII, AHF; related peptides
- 930/11 . . Gonadotropin; related peptides

- 930/12 . . Growth hormone, growth factor other than t-cell or b-cell growth factor, and growth hormone releasing factor; related peptides
- 930/13 . . Luteinizing hormone-releasing hormone; related peptides
- 930/14 . . Lymphokine; related peptides
- 930/141 . . . Interleukin
- 930/142 . . . Interferon
- 930/143 . . . Lymphotoxin
- 930/144 . . . Tumor necrosis factor
- 930/145 . . . Colony stimulating factor
- 930/15 . . Oxytocin or vasopressin; related peptides
- 930/16 . . Somatostatin; related peptides
- 930/17 . . Vasoactive intestinal peptides; related peptides
- 930/18 . . Thymus derived hormone or factor; related peptides
- 930/19 . . Antibiotic
- 930/20 . . Bacterial peptide or bacterial protein
- 930/21 . . Parasitic peptide or parasitic protein
- 930/22 . . Viral peptide or viral protein
- 930/221 . . . Retrovirus related, or human immunodeficiency virus related, or simian immunodeficiency virus related
- 930/222 . . . Foot and mouth disease related
- 930/223 . . . Hepatitis related
- 930/224 . . . Herpes related
- 930/23 . . Multicellular plant peptide or multicellular plant protein
- 930/24 . . Enzyme or isoenzyme
- 930/25 . . Enzyme inhibitor
- 930/26 . . Containing cys-cys disulfide bridge between nonadjacent cysteine residues
- 930/27 . . Cyclic peptide or cyclic protein
- 930/28 . . Bound to a nonpeptide drug, nonpeptide label, nonpeptide carrier, or a nonpeptide resin
- 930/29 . . Polyamino acid or polypeptide with an uninterrupted series of peptide repeating units
- 930/30 . . Signal or leader sequence
- 930/31 . . Linker sequence
- 930/32 . . Modification to prevent enzymatic degradation

**Nanotechnology**

- 977/00 Nanotechnology**
- 977/70 . Nanostructure
- 977/701 . . Integrated with dissimilar structures on a common substrate
- 977/702 . . . having biological material component
- 977/703 . . . . Cellular
- 977/704 . . . . Nucleic acids, e.g. DNA or RNA
- 977/705 . . . . Protein or peptide
- 977/706 . . . . Carbohydrate
- 977/707 . . . having different types of nanoscale structures or devices on a common substrate
- 977/708 . . . with distinct switching device
- 977/709 . . . . including molecular switching device
- 977/71 . . . . . Biological switching
- 977/711 . . . . . Nucleic acid switching
- 977/712 . . . formed from plural layers of nanosized material, e.g. stacked structures
- 977/713 . . . . including lipid layer
- 977/714 . . . . Containing protein
- 977/715 . . . On an organic substrate

- 977/716 . . . . Biological cell surface
- 977/717 . . . . Lipid substrate
- 977/718 . . . . Carbohydrate substrate
- 977/719 . . . . Nucleic acid substrate
- 977/72 . . . On an electrically conducting, semi-conducting, or semi-insulating substrate
- 977/721 . . . . On a silicon substrate
- 977/722 . . . . On a metal substrate
- 977/723 . . . On an electrically insulating substrate
- 977/724 . . Devices having flexible or movable element
- 977/725 . . . Nanomotor/nanoactuator
- 977/726 . . . . using chemical reaction/biological energy, e.g. ATP
- 977/727 . . . formed from biological material
- 977/728 . . . . Nucleic acids, e.g. DNA or RNA
- 977/729 . . . . From protein or unit thereof, e.g. enzyme or carboxyl group
- 977/73 . . . . for electrical purposes
- 977/731 . . . formed from a single atom, molecule, or cluster
- 977/732 . . . Nanocantilever
- 977/733 . . . Nanodiaphragm
- 977/734 . . Fullerenes, i.e. graphene-based structures, such as nanohorns, nanococoons, nanoscrolls or fullerene-like structures, e.g. WS<sub>2</sub> or MoS<sub>2</sub> chalcogenide nanotubes, planar C<sub>3</sub>N<sub>4</sub>, etc.
- 977/735 . . . Carbon buckyball
- 977/736 . . . . having atoms interior to the carbon cage
- 977/737 . . . . having a modified surface
- 977/738 . . . . . Modified with biological, organic, or hydrocarbon material
- 977/739 . . . . . Modified with an enzyme
- 977/74 . . . . . Modified with atoms or molecules bonded to the surface
- 977/741 . . . . . Modified with dissimilar atom or molecule substituted for carbon atoms of the buckyball, e.g. impurity doping or compositional substitution
- 977/742 . . . Carbon nanotubes, CNTs
- 977/743 . . . . having specified tube end structure, e.g. close-ended shell or open-ended tube
- 977/744 . . . . having atoms interior to the carbon cage
- 977/745 . . . . having a modified surface
- 977/746 . . . . . Modified with biological, organic, or hydrocarbon material
- 977/747 . . . . . Modified with an enzyme
- 977/748 . . . . . Modified with atoms or molecules bonded to the surface
- 977/749 . . . . . Modified with dissimilar atoms or molecules substituted for carbon atoms of the cnt, e.g. impurity doping or compositional substitution
- 977/75 . . . . Single-walled
- 977/751 . . . . . with specified chirality and/or electrical conductivity
- 977/752 . . . . Multi-walled
- 977/753 . . . with polymeric or organic binder
- 977/754 . . Dendrimer, i.e. serially branching or "tree-like" structure
- 977/755 . . Nanosheet or quantum barrier/well, i.e. layer structure having one dimension or thickness of 100 nm or less
- 977/756 . . . Lipid layer
- 977/757 . . . . Layer containing protein
- 977/758 . . . Mono-atomic layer on delta-doped sheet
- 977/759 . . . Quantum well dimensioned for intersubband transitions, e.g. for use in unipolar light emitters or quantum well infrared photodetectors
- 977/76 . . . Superlattice with graded effective bandgap, e.g. "chirp-graded" superlattice
- 977/761 . . . Superlattice with well or barrier thickness adapted for increasing the reflection, transmission, or filtering of carriers having energies above the bulk-form conduction or valence band energy level of the well or barrier, i.e. well or barrier with n-integer- $\lambda$ -carrier- $\lambda$  thickness
- 977/762 . . Nanowire or quantum wire, i.e. axially elongated structure having two dimensions of 100 nm or less
- 977/763 . . . formed along or from crystallographic terraces or ridges
- 977/764 . . . with specified packing density
- 977/765 . . . with specified cross-sectional profile, e.g. belt-shaped
- 977/766 . . . Bent wire, i.e. having nonlinear longitudinal axis
- 977/767 . . . . Mesh structure
- 977/768 . . . . Helical wire
- 977/769 . . . . . formed with nucleic acid
- 977/77 . . . . . formed with polyamide polymers
- 977/771 . . . . Nanoring
- 977/772 . . . . . formed from circular biomolecule, e.g. DNA, heme, chelators
- 977/773 . . Nanoparticle, i.e. structure having three dimensions of 100 nm or less
- 977/774 . . . Exhibiting three-dimensional carrier confinement, e.g. quantum dots
- 977/775 . . . Nanosized powder or flake, e.g. nanosized catalyst
- 977/776 . . . . Ceramic powder or flake
- 977/777 . . . . Metallic powder or flake
- 977/778 . . within specified host or matrix material, e.g. nanocomposite films
- 977/779 . . . Possessing nanosized particles, powders, flakes, or clusters other than simple atomic impurity doping
- 977/78 . . . Possessing fully enclosed nanosized voids or physical holes
- 977/781 . . . Possessing nonosized surface openings that extend partially into or completely through the host material
- 977/782 . . . Possessing nanosized physical convexity, ridge, or protrusion extending upward from the host's surface
- 977/783 . . . Organic host/matrix, e.g. lipid
- 977/784 . . . Electrically conducting, semi-conducting, or semi-insulating host material
- 977/785 . . . Electrically insulating host material
- 977/786 . . . Fluidic host/matrix containing nanomaterials
- 977/787 . . . . Viscous fluid host/matrix containing nanomaterials
- 977/788 . . Of specified organic or carbon-based composition
- 977/789 . . . in array format
- 977/79 . . . . with heterogeneous nanostructures
- 977/791 . . . . . Molecular array
- 977/792 . . . . . Nucleic acid array, e.g. human genome array

- 977/793 . . . . . Protein array
- 977/794 . . . . . Chemical library array
- 977/795 . . . Composed of biological material
- 977/796 . . . . for electrical or electronic purpose
- 977/797 . . . Lipid particle
- 977/798 . . . . having internalized material
- 977/799 . . . . . Containing biological material
- 977/80 . . . . . Nucleic acid, e.g. DNA or RNA
- 977/801 . . . . . Drug
- 977/802 . . . Virus-based particle
- 977/803 . . . . Containing biological material in its interior
- 977/804 . . . . . Containing nucleic acid
- 977/805 . . . . . Containing drug
- 977/806 . . . . with exterior chemical attachment
- 977/807 . . . . . Exterior attachment for detection
- 977/808 . . . . . Exterior attachment for targeting, e.g. drug targeting
- 977/809 . . . Organic film on silicon
- 977/81 . . Of specified metal or metal alloy composition
- 977/811 . . Of specified metal oxide composition, e.g. conducting or semiconducting compositions such as ITO, ZnOx
- 977/812 . . . Perovskites and superconducting composition, e.g.  $Ba_xSr_{1-x}TiO_3$
- 977/813 . . Of specified inorganic semiconductor composition, e.g. periodic table group IV-VI compositions
- 977/814 . . . Group IV based elements and compounds, e.g.  $CxSiyGez$ , porous silicon
- 977/815 . . . Group III-V based compounds, e.g.  $AlaGabiIncNxPyAsz$
- 977/816 . . . . III-N based compounds, e.g.  $AlxGayInzN$
- 977/817 . . . . . High-indium-content InGaN pooling or clusters
- 977/818 . . . . III-P based compounds, e.g.  $AlxGayIn2P$
- 977/819 . . . . III-As based compounds, e.g.  $AlxGayInzAs$
- 977/82 . . . . III-Sb based compounds, e.g.  $AlxGayInzSb$
- 977/821 . . . . Mixed group V compounds, e.g. III-NxPy
- 977/822 . . . . Boron-containing compounds
- 977/823 . . . . Tl-containing or Bi-containing compounds
- 977/824 . . . Group II-VI nonoxide compounds, e.g.  $CdxMnyTe$
- 977/825 . . . Heterojunction formed between semiconductor materials that differ in that they belong to different periodic table groups
- 977/826 . . . Nonstoichiometric semiconductor compounds, e.g.  $IIIxVy$ ; x does not equal y
- 977/827 . . formed from hybrid organic/inorganic semiconductor compositions
- 977/828 . . . Biological composition interconnected with inorganic material
- 977/829 . . . Organic or biological core coated with inorganic shell
- 977/83 . . . Inorganic core or cluster coated with organic or biological shell
- 977/831 . . Of specified ceramic or electrically insulating compositions
- 977/832 . . having specified property, e.g. lattice-constant, thermal expansion coefficient
- 977/833 . . . Thermal property of nanomaterial, e.g. thermally conducting/insulating or exhibiting peltier or seebeck effect
- 977/834 . . . Optical properties of nanomaterial, e.g. specified transparency, opacity, or index of refraction
- 977/835 . . . Chemical or nuclear reactivity/stability of composition or compound forming nanomaterial
- 977/836 . . . . having biological reactive capability
- 977/837 . . . Piezoelectric property of nanomaterial
- 977/838 . . . Magnetic property of nanomaterial
- 977/839 . . Mathematical algorithms, e.g. computer software, specifically adapted for modeling configurations or properties of nanostructure
- 977/84 . . Manufacture, treatment, or detection of nanostructure
- 977/841 . . Environmental containment or disposal of nanostructure material
- 977/842 . . for carbon nanotubes or fullerenes
- 977/843 . . . Gas phase catalytic growth, i.e. chemical vapor deposition
- 977/844 . . . Growth by vaporization or dissociation of carbon source using a high-energy heat source, e.g. electric arc, laser, plasma, e-beam
- 977/845 . . . Purification or separation of fullerenes or nanotubes
- 977/846 . . . internal modifications, e.g. filling, endohedral modifications
- 977/847 . . . Surface modifications, e.g. functionalization, coating
- 977/848 . . . Tube end modifications, e.g. capping, joining, splicing
- 977/849 . . with scanning probe
- 977/85 . . . Scanning probe control process
- 977/851 . . . . Particular movement or positioning of scanning tip
- 977/852 . . . for detection of specific nanostructure sample or nanostructure-related property
- 977/853 . . . . Biological sample
- 977/854 . . . . Semiconductor sample
- 977/855 . . . for manufacture of nanostructure
- 977/856 . . . . including etching/cutting
- 977/857 . . . . including coating
- 977/858 . . . . including positioning/mounting nanostructure
- 977/859 . . . . including substrate treatment
- 977/86 . . . Scanning probe structure
- 977/861 . . . . Scanning tunneling probe
- 977/862 . . . . Near-field probe
- 977/863 . . . . Atomic force probe
- 977/864 . . . . Electrostatic force probe
- 977/865 . . . . Magnetic force probe
- 977/866 . . . . Scanning capacitance probe
- 977/867 . . . . Scanning thermal probe
- 977/868 . . . . with optical means
- 977/869 . . . . . Optical microscope
- 977/87 . . . . . Optical lever arm for reflecting light
- 977/871 . . . . with environmental regulation means
- 977/872 . . . . Positioner
- 977/873 . . . . Tip holder
- 977/874 . . . . Probe tip array
- 977/875 . . . . with tip detail
- 977/876 . . . . . Nanotube tip
- 977/877 . . . . . Chemically functionalized
- 977/878 . . . . . Shape/taper

- 977/879 . . . . Material
- 977/88 . . with arrangement, process, or apparatus for testing
- 977/881 . . . Microscopy or spectroscopy, e.g. sem, tem
- 977/882 . . Assembling of separate components, e.g. by attaching
- 977/883 . . . Fluidic self-assembly, FSA
- 977/884 . . . Assembled via biorecognition entity
- 977/885 . . . . Via nucleic acid hybridization
- 977/886 . . . . Via protein recognition
- 977/887 . . Nanoimprint lithography, i.e. nanostamp
- 977/888 . . Shaping or removal of materials, e.g. etching
- 977/889 . . . by laser ablation
- 977/89 . . Deposition of materials, e.g. coating, cvd, or ald
- 977/891 . . . Vapor phase deposition
- 977/892 . . . Liquid phase deposition
- 977/893 . . . Deposition in pores, molding, with subsequent removal of mold
- 977/894 . . having step or means utilizing biological growth
- 977/895 . . having step or means utilizing chemical property
- 977/896 . . . Chemical synthesis, e.g. chemical bonding or breaking
- 977/897 . . . . Polymerization
- 977/898 . . . . Enzymatic
- 977/899 . . . . Electrolytic
- 977/90 . . having step or means utilizing mechanical or thermal property, e.g. pressure, heat
- 977/901 . . having step or means utilizing electromagnetic property, e.g. optical, x-ray, electron beam
- 977/902 . Specified use of nanostructure
- 977/903 . . for conversion, containment, or destruction of hazardous material
- 977/904 . . for medical, immunological, body treatment, or diagnosis
- 977/905 . . . Specially adapted for travel through blood circulatory system
- 977/906 . . . Drug delivery
- 977/907 . . . . Liposome
- 977/908 . . . Mechanical repair performed/surgical
- 977/909 . . . . Obstruction removal
- 977/91 . . . . Strengthening cell or tissue
- 977/911 . . . . Cancer cell destruction
- 977/912 . . . . Cancer cell repair
- 977/913 . . . . Stem cell therapy implantation
- 977/914 . . . Protein engineering
- 977/915 . . . Therapeutic or pharmaceutical composition
- 977/916 . . . . Gene therapy
- 977/917 . . . . Vaccine
- 977/918 . . . Immunological
- 977/919 . . . Dental
- 977/92 . . . Detection of biochemical
- 977/921 . . . . Of toxic chemical
- 977/922 . . . . Of explosive material
- 977/923 . . . Cell culture
- 977/924 . . . using nanostructure as support of dna analysis
- 977/925 . . . Bioelectrical
- 977/926 . . . Topical chemical, e.g. cosmetic or sunscreen
- 977/927 . . . Diagnostic contrast agent
- 977/928 . . . . X-ray agent
- 977/929 . . . . Ultrasound contrast agent
- 977/93 . . . . MRI contrast agent
- 977/931 . . . Medical device coating
- 977/932 . . for electronic or optoelectronic application
- 977/933 . . . Spintronics or quantum computing
- 977/934 . . . . Giant magnetoresistance, GMR
- 977/935 . . . . Spin dependent tunnel, SDT, junction, e.g. tunneling magnetoresistance, TMR
- 977/936 . . . in a transistor or 3-terminal device
- 977/937 . . . . Single electron transistor
- 977/938 . . . . Field effect transistors, FETS, with nanowire- or nanotube-channel region
- 977/939 . . . Electron emitter, e.g. spindt emitter tip coated with nanoparticles
- 977/94 . . . in a logic circuit
- 977/941 . . . . including dna logic element
- 977/942 . . . . including protein logic element
- 977/943 . . . Information storage or retrieval using nanostructure
- 977/944 . . . . Biochemical memory
- 977/945 . . . . . Protein memory
- 977/946 . . . . . Nucleic acid memory
- 977/947 . . . . . with scanning probe instrument
- 977/948 . . . Energy storage/generating using nanostructure, e.g. fuel cell, battery
- 977/949 . . . Radiation emitter using nanostructure
- 977/95 . . . . Electromagnetic energy
- 977/951 . . . . . Laser
- 977/952 . . . Display
- 977/953 . . . Detector using nanostructure
- 977/954 . . . . Of radiant energy
- 977/955 . . . . Of thermal property
- 977/956 . . . . Of mechanical property
- 977/957 . . . . Of chemical property or presence
- 977/958 . . . . . Of biomolecule property
- 977/959 . . . . . Of disease state
- 977/96 . . . . Of magnetic property
- 977/961 . . for textile or fabric treatment
- 977/962 . . for carrying or transporting
- 977/963 . Miscellaneous