PATENTS GRANTED

In the Metal Finishing Field

Printed copies of patents are furnished by the Patent and Trademark Office for $3.00 each.
Address orders to: Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Electroplated Solder Terminal

U.S. Patent 5,303,286. Apr. 2, 1996
H.A. Nye, III et al., assignors to IBM Corp., Armonk, NY

A method of fabricating an improved solder terminal on a substrate containing at least an electrically conducting member and further having a plurality of electrical contact regions separated by an insulator, comprising depositing an adhesive metallic layer overlying the insulator and in contact with the electrical contact regions, selected from a group consisting essentially of TiW and TiN; depositing a CrCu alloy layer over and in contact with the adhesive metallic layer; said adhesive metallic layer is characterized by being selectively etchable; depositing a solder bondable metallic layer over and in contact with the CrCu layer; forming solder selectively over the solder bondable layer in selected locations; etching using the solder as a mask and stopping on the adhesion layer; and etching the metallic adhesion layer using a process selective to solder, CrCu alloy layer, solder bonding layer, and electrically conducting member in the substrate.

Electrostatic Spraying Device

U.S. Patent 5,503,335. Apr. 2, 1996
T.J. Noakes and M.L. Green, assignors to Imperial Chemical Industries PLC, London

An electrostatic spraying device comprising a spraying nozzle in the form of an elongate wicking element, one end of which forms the nozzle tip; a reservoir containing liquid to be supplied to the nozzle tip; and means for applying high voltage to the liquid at the nozzle tip to cause the liquid to be drawn into ligamentary form and thereafter break up into electrostatically charged droplets.

Masking Apparatus

U.S. Patent 5,503,675. Apr. 2, 1996
J. Zejda, assignor to Leybold AG, Hanau, Germany

An apparatus for masking a substrate in a vacuum chamber, the substrate comprising a disk having a central hole.

Process for Cleaning Metal

U.S. Patent 5,503,682. Apr. 2, 1996
T. Mueller-Kirschbaum et al., assignors to Henkel KG, Duesseldorf, Germany

A process for degreasing and cleaning metal surfaces using a surfactant-containing water-based cleaning liquid in baths or by spray cleaning comprising measuring the dynamic surface tension of a standardized cleaning liquid of known concentration using a bubble tensiometer operated with constant gas streams to establish a standard dynamic surface tension value; contacting the metal surfaces with a cleaning liquid; measuring the dynamic surface tension of the cleaning liquid using a bubble tensiometer operated with constant gas streams; comparing measurements to determine an amount of unused surfactant; and regenerating the cleaning liquid.

Method of Etching Aluminum Foil

U.S. Patent 5,503,718. Apr. 2, 1996
K. Kakizakai, assignor to Nihon Chikudenki KK, Tokyo

A method of etching an aluminum foil for electrolytic capacitors, comprising electrolytically etching an aluminum foil that has a high cubic texture in an electrolyte containing a chloride to form pits, in which electrolytic etching step the current density is decreased continuously from a maximum value, and enlarging the pits formed in the above step by etching.

Plating Apparatus

U.S. Patent 5,503,726. Apr. 2, 1996
K. Hamada et al., assignors to Murata Mfg. Co. Ltd., Nagaokakyo, Japan

A plating apparatus comprising a plating solution container for storing a plating solution; and a cathode, arranged for dipping into the plating solution, being so formed as to receive objects thereon, said cathode being formed by a mesh member or a porous plate, the plating apparatus further comprising vibration means being coupled to the cathode for applying vibration for horizontally reciprocating the cathode; and a stopper being so provided as to collide with a movable part of the vibration means or cathode during the reciprocation stroke for the movable part of the vibration means or cathode.

Soluble Anode for Electroplating

U.S. Patent 5,503,727. Apr. 2, 1996
P. Jean et al., assignors to Comptoir Lyon-Alemand-Louyot, Paris

A soluble anode used for electroplating a coating metal onto moving sheet metal, comprising an anode body consisting of the coating metal, which extends along a longitudinal direction, an anode head and means for temporary attachment of the anode head to the anode body to render the anode head reusable with another anode body, the temporary attachment means ensuring electrical contact between the body and the anode head, wherein the temporary attachment means includes an intermediate metal plate, fixed permanently on the anode head and extending parallel to the anode body and having end and edges spaced apart from the anode head that are connected to the body by a weld connection, said edges of the plate being spaced apart from the anode body to facilitate detachment of the weld connection between the plate and the anode body.

Method for Anodic Oxidation

U.S. Patent 5,503,730. Apr. 2, 1996
N. Osano et al., assignors to Canon KK, Tokyo

A method of forming an anodic oxidation film on a plurality of workpieces in apparatus comprising switch means for switching current to flow to each workpiece, detection means for detecting a current flowing to each workpiece, first control means for controlling the current flowing to each workpiece, second control means for controlling the switch means and the first control means, and a power source.

Process for Phosphating Galvanized Steel

U.S. Patent 5,503,733. Apr. 2, 1996
H-D. Speckmann et al., assignors to Henkel KG, Duesseldorf, Germany

A process for phosphating galvanized steel surfaces by immersion or spray/immersion treatment with acidic aqueous solutions wherein the acidic aqueous solutions comprise Zn^{2+} cations in quantities of 0.1 to 5 g/L, PO_4^{3-} anions in quantities of 5 to 50 g/L, NO^{3-} anions in quantities of 0.1

to 50 g/L, Mn^{2+} cations in quantities of 0.1 to 5 g/L and Cu^{2+} cations in quantities of 0.001 to 1 g/L; the acidic aqueous solutions have a pH value of 1.5 to 4.5 and a temperature of 10 to 80°C and are used for a treatment time of 1 to 300 sec; and the galvanized steel surfaces are cathodically treated during phosphating with a direct current having a density of 0.01 to 100 mA/cm^2.

Device for Electrostatic Spraying

U.S. Patent 5,503,880. Apr. 2, 1996
G. Matschke, assignor to Sames S.A., Meylan, France

A method for electrostatically spraying charged coating material onto an object from a device having a controllable voltage source and an electrode connected to receive a voltage from the voltage source and disposed to impart an electrostatic charge to the coating material as the coating material is being sprayed and to create an electrostatic field between the spraying device and the object, wherein the controllable voltage source comprises a generator for producing an output voltage and a controllable circuit connected between the generator and electrode and including two on-off switches electrically connected with one another.

Two-Coat Finish

U.S. Patent 5,503,939. Apr. 2, 1996
H.P. Rink et al., assignors to BASF Lacke + Farben AG, Muenster-Hiltrup, Germany

A process for the production of a two-coat finish on a substrate surface, comprising applying a pigmented aqueous basecoat containing a water-dilutable emulsion polymer as binder to the substrate surface; forming a polymer film from the basecoat; applying a transparent topcoat to the basecoat thus obtained; and then baking the basecoat and topcoat together.

Paint Composition

U.S. Patent 5,504,045. Apr. 2, 1996
H.B. Emlemdi et al., assignors to The O. Hommel Co., Carnegie, Pa.

A paint composition comprising from 50 to 100% by weight of a first flux composition containing no lead or lithium and from 5 to 15 mol % of SiO_2, 8 to 18 mol % of alkali oxide, and an amount of zinc oxide and boron oxide such that the ratio of the mol % ZnO/mol % B_2O_3 is 0.8 to 1.3, a minor portion of at least one pigment; and a minor portion of a compatible liquid medium.

Coating Composition

U.S. Patent 5,504,178. Apr. 2, 1996
M.W. Shaffer et al., assignors to Bayer Corp., Pittsburgh

A one-component coating composition containing oxime- or lactam-blocked polyisocyanates, which have improved resistance to yellowing.

Airless Spray Unit

U.S. Patent 5,505,381. Apr. 9, 1996
A.J. Torntore, assignor to Wagner Spay Tech Corp., Minneapolis

A rotatable, cleanable, flat tip holder for airless spraying.

Hose Assembly

U.S. Patent 5,505,387. Apr. 9, 1996
A. Yaworski, Stoney Creek, Ontario, Canada