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P. J. F. BATENBURG ET AL

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ELECTROPLATING DEVICE

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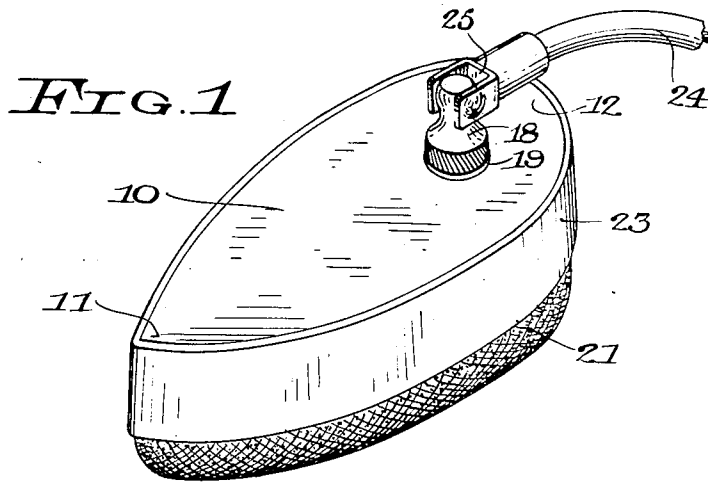


**FIG. 2**

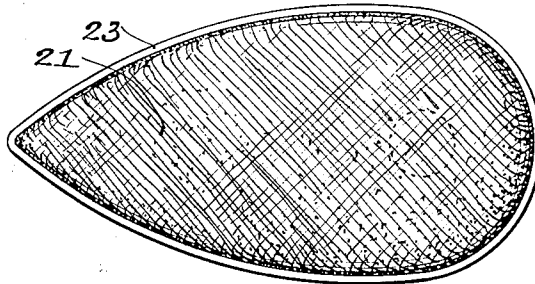
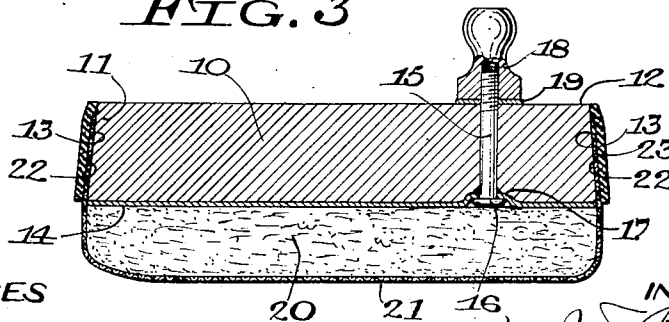


**FIG. 3**



WITNESSES

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## UNITED STATES PATENT OFFICE

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## ELECTROPLATING DEVICE

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The invention relates to electro-plating devices of the type including a pad charged with metal salts and adapted to be moistened and applied to a metallic surface for depositing thereon a plating film.

5 An object of the invention is to provide a conveniently manipulated device of this character for plating metal and simultaneously burnishing the plated surface, and including  
10 a rigid anode-carrying holder and means for securing an impregnated pad thereto in readily detachable relation.

Another object of the invention is to perfect details of construction of a device of  
15 this character.

The invention further consists in the several features hereinafter set forth and more particularly defined by the annexed claims.

20 In the accompanying drawings, Fig. 1 is a perspective view of the device embodying the invention.

Fig. 2 is a bottom view thereof, and

Fig. 3 is a longitudinal sectional view of the device.

25 In these drawings, the numeral 10 indicates a holder, preferably of some molded material and consisting of a flat slab of almond shape to afford a wedge 11 at one end and rounded contour 12 at the other end. The  
30 side walls 13 of the holder are preferably slightly inclined to produce a downward flare, as seen in Fig. 3. An anode 14 is formed of a flat plate of suitable metal having the same shape as the holder and is secured  
35 to the bottom surface of the holder, as by cementing. The securing means for the anode also includes a stud 15 having its headed end 16 soldered or otherwise suitably secured to a countersunk portion 17 of the  
40 anode plate. The stud projects through the holder and is secured at its upper end by a ball nut 18, there being a washer 19 interposed between the nut and the top surface of the holder.

45 A yielding porous absorbent pad 20, preferably of felt, is formed of the same general flat almond shape as the holder and is impregnated with suitable metal salts. The pad is placed in abutment with the anode 14 and  
50 is there retained by a porous envelop or shal-

low bag 21 having its marginal portions 22 surrounding the sloping walls 13 of the holder and retained thereon by a wide elastic band 23. The elastic band 23 serves to hold the pad-enclosing envelop snugly on the  
55 sloping walls of the holder but is readily removed to permit the renewal of the pad. The pad is thus held firmly in place on the holder, the sloping walls of which prevent loosening of the envelop. The elastic band  
60 23 also serves as a buffer to avoid marring of polished surfaces.

When in use a conductor 24 is placed in electrical connection with the anode by means of a spring terminal clip 25 engaging opposite sides of the ball nut 18 in a manner permitting free relative movement between the nut and the clip. The other end of the conductor leads to a suitable source of direct  
65 current supply while the other side of the source is connected to the object to be plated, as is well understood in this art. The device is then dipped in water to moisten the absorbent metal-salt-impregnated pad 20 and the envelop is then placed in contact with  
70 the object to be plated. While the current is on, the envelop is slowly rubbed over the metallic surface to deposit a film of metal which is simultaneously burnished by the envelop, the latter being preferably made of  
75 a coarse porous cloth. The holder is of a shape permitting it to be conveniently held in the hand and the pointed forward end 11 of the holder affords facility for reaching corners and recesses and for treating small  
80 spots, while the broad rear end permits good coverage of large plane surfaces. The anode distributes the current well over the impregnated pad and the holder forms a firm backing for the pad to distribute the pressure during the plating operation. During the manipulation of the holder in all directions in the course of the plating and burnishing operations, the conductor terminal clip 25 turns  
85 freely on the ball nut 18 so that breakage of the conductor is avoided, and the relative rubbing movement of the clip on the ball nut keeps the contact surfaces between them bright and in good condition. The device  
90 may be used for plating nickel, copper, sil- 100

ver or gold by using the proper metallic salt or salts and a suitable electrode, and is particularly useful in retouching or restoring worn or defective plating.

5 What we claim as new and desire to secure by Letters Patent is:

1. In an electro-plating device, the combination of a pointed almond-shaped holder having flat, substantially parallel top and bottom surfaces, a flat sheet metal anode plate disposed on said bottom surface and adapted to receive an impregnated pad thereon, and means for securing said anode plate to the bottom surface of said holder including a terminal stud extending transversely through said holder to said top surface.

2. In an electro-plating device, the combination of a holder having a flat bottom face and downwardly flaring side walls surrounding said face and forming an acute angle therewith a flat sheet metal anode plate secured to said bottom face and having its marginal portions in abutment therewith a flat salt-impregnated porous pad placed in contact with the bottom surface of said anode plate and substantially coextensive therewith, a porous envelop for securing said pad to said holder and including marginal portions extending beyond said pad to engage the side walls of said holder, an elastic band detachably clamping said envelop about said side walls to retain said pad in firm engagement with said anode plate, and means for establishing an electrical connection to said anode plate.

3. In an electro-plating device, the combination of a holder having a bottom surface and side walls surrounding said bottom surface, an anode plate disposed on said bottom surface, means for establishing an electrical connection to said anode plate, a salt-impregnated pad disposed in contact with said bottom surface, a porous envelop for securing said pad to said holder including marginal portions extending beyond said pad to engage the side walls of said holder, and a relatively wide elastic rubber band detachably securing said envelop about the side walls to retain said pad in engagement with said anode plate and said band forming a buffer about said holder to avoid marring of finished surfaces.

4. In an electro-plating device, the combination of a holder having a bottom surface including a recess, a sheet metal anode plate substantially co-extensive with said bottom surfaces disposed in engagement with said bottom surface and having an apertured embossed portion disposed in said recess, said anode plate being adapted to receive an impregnated pad thereon, and means for securing said anode plate to said holder including a terminal-forming attaching member extending transversely through said holder

and having a head portion within the embossed portion of said anode plate.

5. In an electro-plating device, the combination of a holder having a bottom surface, an anode plate on said bottom surface adapted to receive an impregnated pad thereon, a terminal stud extending transversely through said holder and connected to said end plate, a ball nut secured to said stud, and a conductor-carrying clip having a detachable universal connection with said ball nut for avoiding breakage of the conductor and for effecting a relative rubbing movement of the clip on the ball nut during the manipulation of said holder to maintain the contact surfaces between said nut and clip in bright condition.

6. In an electro-plating device, a substantially flat holder having a flat bottom face and side walls surrounding said bottom face, a flat sheet metal anode plate substantially co-extensive with said bottom face and having its marginal portions disposed in abutment with said bottom face, said anode plate being adapted to receive an impregnated pad thereon, and means including a terminal member for securing said anode plate to said holder.

In testimony whereof, we affix our signatures.

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