

Sept. 7, 1926.

C. H. PROCTOR

1,599,284

ANODE HOLDER

Filed March 11, 1926

2 Sheets-Sheet 1

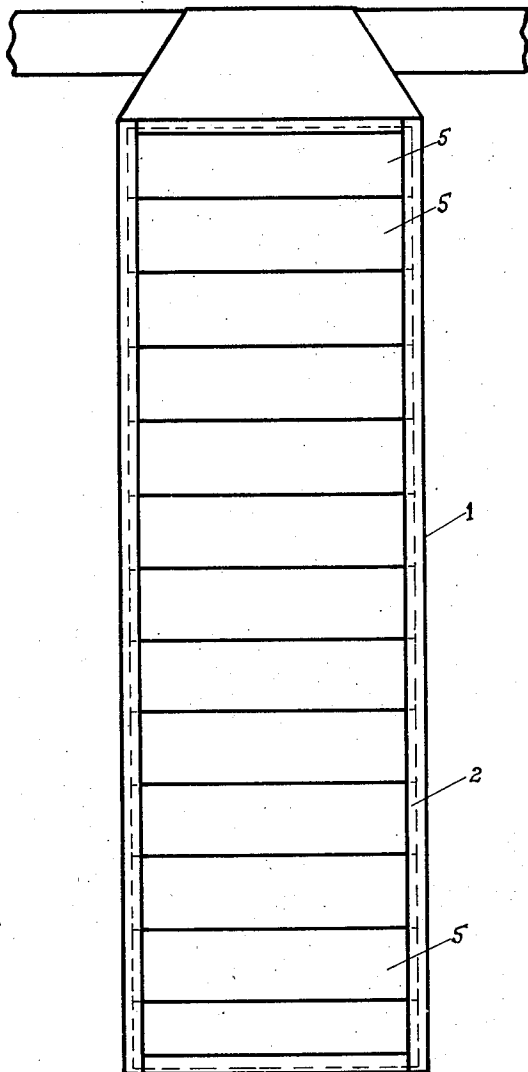


FIG. I

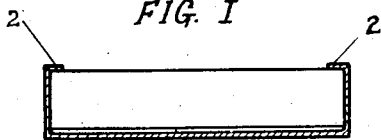


FIG. II

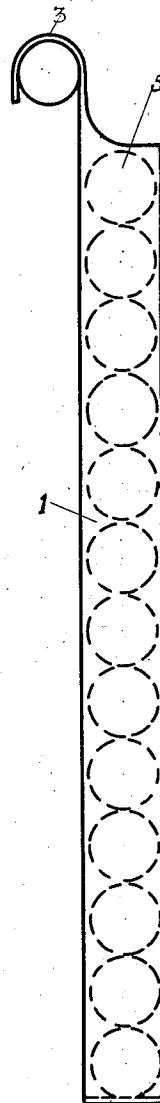


FIG. III

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2 Sheets-Sheet 2

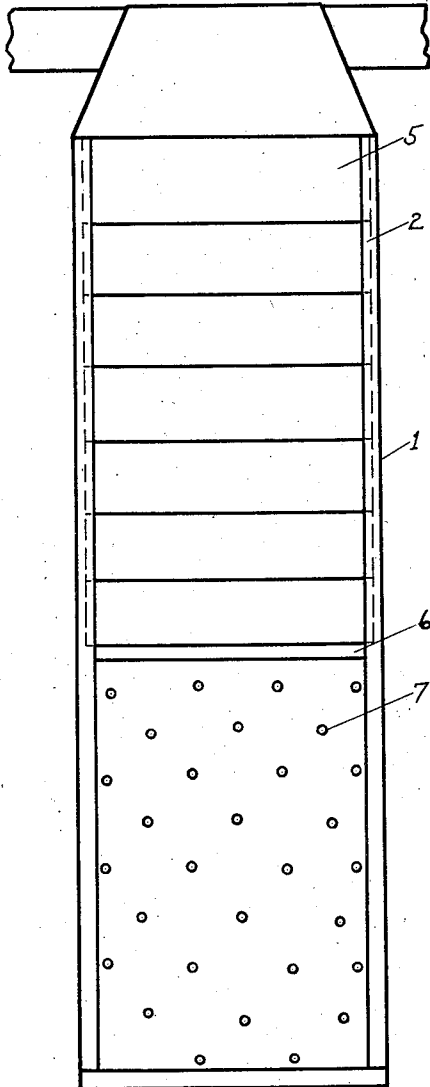


FIG. IV

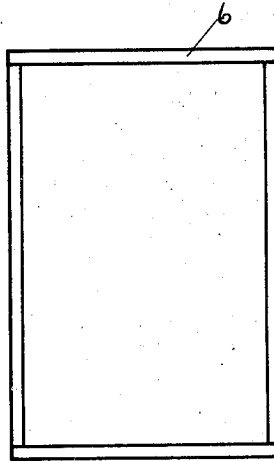


FIG. V

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Patented Sept. 7, 1926.

1,599,284

UNITED STATES PATENT OFFICE.

CHARLES HENRY PROCTOR, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO THE ROESSLER & HASSLACHER CHEMICAL CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ANODE HOLDER.

Application filed March 11, 1926. Serial No. 93,857.

The object of this invention is to provide a holder for soluble anodes whereby a means is provided for maintaining a substantially constant anode surface. Such an anode should in addition be easily handled and replenished.

The invention in its general aspect concerns the provision of an anode holder in the form of a box, into which, anode bars can be readily placed as those already in the holder become plated away. This ability makes it possible to maintain a substantially constant anode surface in the holder without removing the holder from the bath and without particular effort and loss of time.

The box is preferably one of greater width than thickness with one face substantially open except for retaining flanges and an open top into which the anode bars can be dropped or slipped to slide of themselves down on top of those already in the box. This structure also enables insoluble as well as soluble anode bars to be dropped into the holder to regulate the ratio between the soluble and insoluble anode surface.

My invention will be explained in connection with the attached drawings. The holder comprises preferably a narrow rectangular box 1, Figure I and II having a panel in one of its wide faces removed in such a way as to leave projecting retaining flanges 2 extending inward. The top of this box is completely removed and a hook 3, Figure III formed at the top to provide a means for fastening to a bus bar. The bottom 4 is left intact. This box is constructed of any material which is practically insoluble under the influence of the plating current in the particular bath for which it is intended; it may be of lead, graphite, steel, etc. as required. The soluble anode bars are now prepared of such a size that they can be inserted in the top of the box and will slide down to the bottom; these bars 5, preferably cylindrical, are then piled one on the other in the box. They are retained in the box as shown in Figure I by the projecting flanges 2. I prefer to have these soluble anode bars of such dimension that the composite anode will be only one cylinder in thickness but there is no objection to having several thicknesses. In fact, this actually occurs in operation. As the anodes are plated out, the cylinders become smaller and settle to the bottom of the box, here the

cylinders may be so small that several will now occupy the space which would be taken by an original piece.

The advantages of my anode holder are thus apparent. As the material is removed from the anodes, the bars slide down in the box as stated, fresh bars can then be inserted at the top of the box to maintain very closely the desired calculated anode surface.

With some anodes of this type the bars, as they near the bottom tend to break into pieces. To avoid having these pieces drop to the bottom of the plating tank I provide a front face of wire screen on the lower end of the box. This screen in some cases may advantageously cover the whole of the open face of the box.

At times it is advisable to have an anode wherein a larger ratio of insoluble to soluble anode surface is obtained. For this purpose I insert a suitable blank of insoluble material, such as the rectangular frame 6, Fig. V into the box. This blank may be of any desired size and may be placed in the box wherever practice shows it to be best suited. Thus, for example, a large blank 6, may be placed in the bottom of the slide as in Fig. IV. However, some soluble anode bars may first be inserted, then the blank and then more of the soluble bars. Another application is alternate bars of soluble anodes and insoluble material.

In order to provide for circulation around the anode I have found it advantageous to perforate or cut out holes in the wide closed face or back of the box as shown at 7 in Fig. IV. These holes may be of any size or shape.

The boxes and insoluble blanks may, for example, be made of steel for use in alkaline baths in the plating of zinc, cadmium and the like.

I have found that this type of anode is adaptable to any plating process either in still or drum plating. For drum plating or other special cases the anode holders are conveniently curved from top to bottom so as to follow the contour of the drum. The insertion of the soluble portions is accomplished as before. The bus bars or other supporting means are of course varied to suit the particular need and properly hold the anode in place.

What I claim is:

1. An anode holder which comprises a

- box for holding a plurality of anode bars, said box having a substantially open face, and an open top permitting new bars to be readily dropped into the box as those therein are plated away.
2. An anode which comprises a box having substantially closed sides, back, and bottom, and an open front face, guide flanges along the substantially open front face and a plurality of anode bars slidably disposed in said box, new bars adapted to be readily inserted through the open top of the box and to slide down into place as those in the box are plated away.
3. An anode holder which comprises a box for holding a plurality of soluble and insoluble anode bars, said box having a substantially open face, and an open top permitting the selective and ready insertion of new bars into the box as those therein are plated away.
4. Anode comprising a plurality of soluble anode bars slidably arranged in contact with one another in an open face box constructed of material insoluble in the plating bath used.
5. Anode for alkaline plating baths comprising a plurality of soluble anode bars slidably arranged in contact with one another in an open face steel box whose thickness is approximately that of the diameter of said anode bars.
6. Anode for alkaline plating baths comprising a plurality of cylindrical soluble anode bars slidably arranged in contact with one another in an open face steel box whose thickness is approximately that of the diameter of said cylindrical anode bars.
- Signed at Perth Amboy in the county of Middlesex and State of New Jersey this 5th day of March A. D. 1926.
- CHARLES HENRY PROCTOR.