Dec. 30, 1930. K. BARANOWSKI 1,786,592

ELECTROPLATING APPARATUS

Filed Oct. 29, 1928

Fig. 1

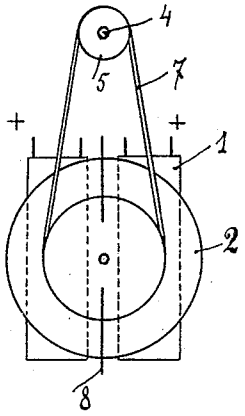


Fig. 2

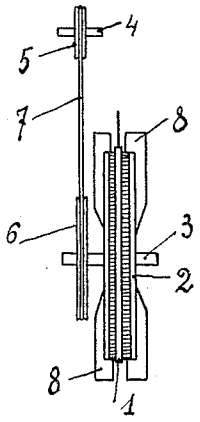


Fig. 3

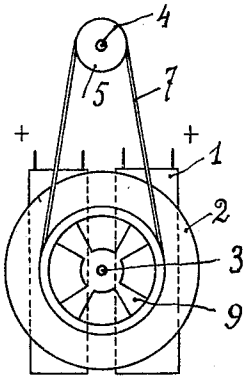
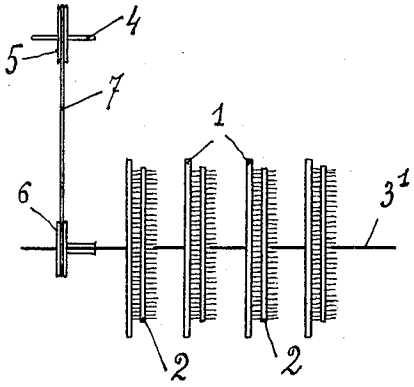


Fig. 4



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UNITED STATES PATENT OFFICE

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ELECTROPLATING APPARATUS

Application filed October 29, 1928, Serial No. 315,893, and in Great Britain December 21, 1927.

This invention relates to the construction of electro-plating vats or troughs of the type in which brushing means are provided for operating on the surfaces of the electrodes by circular, reciprocating or combined relative movements in combination with any known means for accelerating the metallic deposition.

According to the invention, which comprises detailed improvements in the construction of electro-plating vats or troughs of the above type, the brushes are made to rotate and have vanes or blades secured thereto, the brushes in some cases being recessed at the center and the vanes or blades being arranged in the manner of screw propellers. In other cases, the brushes may be made as double-faced brushes and arranged on a rotating shaft capable of receiving longitudinal reciprocating displacement for brushing the right hand surface of an electrode and subsequently the left hand surface of another electrode; in this construction the brushes may be stationary and the electrodes arranged on a rotating shaft having a longitudinal reciprocating movement. The bristles of the brushes are preferably made of filaments of glass.

The invention further comprises other constructional arrangements as will appear from the following description.

In order that the invention may be better understood, it will now be described with reference to the accompanying drawing in which—

Figs. 1 and 2 show in front and side view the arrangement of one form of brush constructed according to the invention;

Fig. 3 shows the application of a rotating brush with a screw propeller;

Fig. 4 illustrates a shaft provided with a double-faced brush adapted to have a longitudinal reciprocating movement from one electrode toward the next adjacent.

In the drawing, 1 indicates the electrodes and in the examples shown, they constitute anodes in the shape of metallic plates.

In Figs. 1 and 2, the simple or double brushes 2 rotate on the axis 3 driven by the shaft 4 by means of pulleys 5, 6 and of a belt 7.

The brushes or the movable parts may be provided with small vanes forming blades 8 which as will be seen extend beyond the periphery of the brush and are laterally extended so as to lie in line with the bristles and thereby draw electrolyte radially outwards through the bristles. The electrolyte enters the center of the brush through the space between the electrodes 1.

Fig. 3 shows a modification of Figs. 1 and 2 in which the brushes are provided with a central electrolyte passage in which vanes are located in the form of a screw propeller 9 rotating with the spindle 3.

In the form of construction shown in Fig. 4, double faced brushes 2 are arranged, on the driven shaft 3^1 which, while rotating, can move longitudinally in order to brush, alternatively the right side of an electrode 1 and then the left side of the other electrode.

The movable parts of the device shown in Fig. 4 are also provided with small vanes or blades or screw propellers for drawing the electrolyte through the bristles the construction of these vanes being as in Figure 3.

In the case of articles of irregular shape, the brushing can be effected by arrangements combined so as to reach, as much as possible, all the parts of the article. Obviously, the surfaces of the cathodes as well as those of the anodes can be brushed, either on one side, or on both, if they represent plane surfaces, or on all sides by rendering either the brushes or the electrodes or both movable and animated with alternating or circular or combined movements, according to the articles to be metallized.

Use can be made of simple or double, single-faced or double-faced brushes made of textile bristles or of animal bristles, but it is much preferable to use, for brushing electrodes, brushes made of filaments of glass, especially when strongly acid or alkaline electrolytes are employed.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In electro-plating apparatus the com-

bination of an electrode, a rotatable cleaning brush in contact therewith and vanes upon the cleaning brush so located as to move the electrolyte radially through the brush bristles over the electrode surface.

2. An apparatus as claimed in claim 1 in which the brush is provided with a central electrolyte passage in which said vanes are located.

3. An apparatus as claimed in claim 1 in which the brushes are double faced and mounted on a rotatable shaft adapted to receive longitudinal reciprocating displacement.

4. An apparatus as claimed in claim 1 in which the bristles of the brushes are composed of filaments of glass.

In testimony whereof I hereunto affix my signature.

KAZIMIERZ BARANOWSKI.