March 11, 1930. L. LICHTMAN 1,749,953

RACK OR HANGER FOR ARTICLES TO BE PLATED

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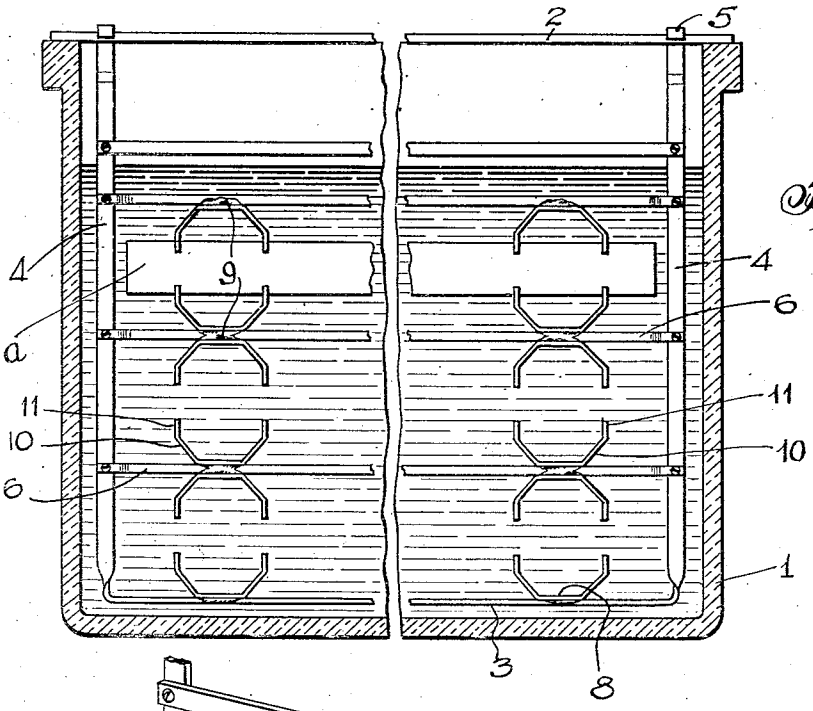


Fig. 1.

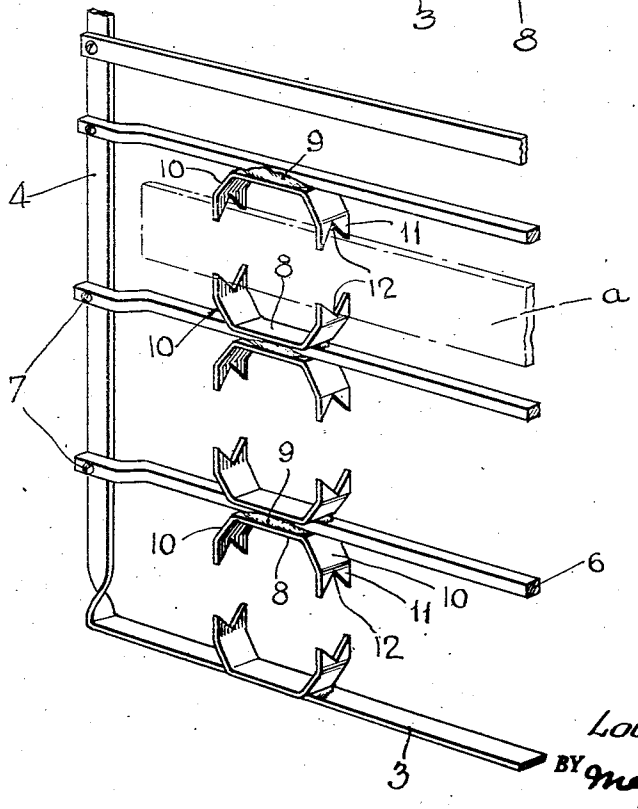


Fig. 2.

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UNITED STATES PATENT OFFICE

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RACK OR HANGER FOR ARTICLES TO BE PLATED

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This invention is an improvement in racks or hangers for articles to be electro-plated, and more particularly in a rack or hanger for supporting plate-like articles, in such manner as to leave substantially the entire surface thereof exposed, and with a good electrical contact between the rack and the article.

In order to obtain a smooth and even deposit on plate-like articles, it is essential that the surface of the article be exposed to the deposit throughout the entire area, while at the same time electrical contact must be maintained between the article and the rack.

One of the primary objects of the present invention is the provision of a rack or hanger especially designed for supporting articles of this character, with substantially the entire surface thereof exposed, and with close contact between the article and the rack or hanger.

Another object is the provision of a rack having members, resilient and laterally displaceable to facilitate the insertion of an article, and so arranged that the insertion of each article braces the resilient member of the preceding article against lateral displacement.

Another object is the provision of a rack wherein the resilient and laterally displaceable members act to cause the hangers to tightly engage the articles when they are in place in the rack.

With these and other objects in view the invention consists in the construction and novel combination of parts fully described hereinafter, illustrated in the accompanying drawings and pointed out in the claims appended hereto, it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims, may be resorted to without departing from the spirit of the invention.

In the drawings forming a part hereof:—

Fig. 1 is a transverse vertical section of a plating tank provided with the improved hanger.

Fig. 2 is a detail in perspective of a part of the rack.

The present embodiment of the invention is shown in connection with a plating tank 1 of usual construction, having the usual cross bars 2, extending transversely or longitudinally of the tank, from which the racks or hangers are suspended, the cross bars resting on the tops of opposite walls of the tank, and being connected to the negative lead of the circuit.

The improved rack includes a substantially U-shaped frame composed of a bottom member 3 and side members 4 extending upwardly from the bottom member, and each provided at its upper end with a hook 5 for engaging a cross bar 2. The side members 4 are connected at suitable intervals by cross bars 6 of relatively small cross section, and of resilient material. The cross bars are riveted or otherwise secured to the side members 4, as indicated at 7, and each cross bar 6 and the bottom member 3 carries a set of hangers for engaging the articles indicated at *a*, to be plated.

Each of the hangers is of substantially U-shape, comprising a body 8, which is soldered or otherwise secured to a cross bar 6, as indicated at 9, and arms 10, extending from the ends of the body. The arms extend from the body at an obtuse angle, as shown, and each is provided at its outer end with an angular portion 11, which is notched as indicated at 12 for a purpose to be described.

The angular portions 11 are substantially perpendicular to the cross bars 6, and to the bottom bar 3 of the frame. Referring to Fig. 1, it will be seen that the hangers of the bottom member 3 of the frame are opposed by a set on a cross bar 6, and a set on the opposite side of this cross bar 6, are opposed by a set on another cross bar.

The bottom member 3 of the frame is substantially rigid, but the cross bar just above it is resiliently displaceable away from the member 3 to enable insertion of an article. The second cross bar from the member 3 is also displaceable in the same manner, but when an article has been placed between the lowest cross bar 6 and the next lowest it braces the lowest cross bar against lateral dis-

placement, so that the article between the lowest cross bar and the member 3 is tightly clamped by the hangers.

In use, a plate is first inserted between the bottom member 3 and the adjacent bar 6, the said bar 6 being sprung upward intermediate its ends to facilitate the insertion of the plate, and the plate is held by its edges in the notches 12. Another plate is now inserted between the lowermost bar 6 and the next upper in the same manner, the next upper bar being sprung to enable the insertion of the plate.

It will be apparent that the insertion of the second plate locks the first plate in place, acting as a brace to prevent springing of the lowermost bar 6. Practically the whole surface of the article is exposed to the electro-plating action, while at the same time good electrical connection is provided between the article and the rack, to which the negative lead is connected. The tank is provided with the usual anodes to which the positive lead is connected.

It will be apparent that the members 8—10—11, which engage the articles, contact with the articles only at the corners of the edges. This is due to the V-shape of the notches 12. The articles are slidable longitudinally in the members 8—10—11, so that if desired, they may be shifted longitudinally to expose those minute portions which have been engaged by the said members.

What is claimed as new is:—

1. An electro-plating rack for supporting plate-like articles, including a plurality of substantially parallel resilient cross bars laterally springable to enable insertion of the articles, and means between each pair of adjacent bars for engaging the article.

2. An electro-plating rack for supporting plate-like articles, including a plurality of substantially parallel resilient cross bars connected at their ends, and means between each pair of adjacent bars and connected to the bars for engaging the edges of the articles at the corners of said edges, whereby the articles may be slipped longitudinally.

3. An electro-plating rack for supporting plate-like articles, including a plurality of substantially parallel resilient cross bars laterally springable to enable insertion of the articles, and means between each pair of adjacent bars for engaging the articles, each of said means engaging the article at a plurality of points.

4. An electro-plating rack for supporting plate-like articles, including a plurality of substantially parallel resilient cross bars laterally springable to enable insertion of the articles, and means between each pair of adjacent bars for engaging the articles, each of said means engaging the article at a plurality of points, and at points directly opposite the points engaged by the corresponding means on the adjacent bar.

5. An electro-plating rack for supporting plate-like articles, including a plurality of substantially parallel resilient cross bars connected at their ends, and means between each pair of adjacent bars and connected to the bars for engaging the edges of the articles at the corners of said edges, whereby the articles may be slipped longitudinally, and a substantially U-shaped member including a body substantially parallel with the bars and having engaging means for cooperating with similar means on the adjacent bar, and arms to which the bars are secured, each arm having a hanger for the purpose specified.

6. An electro-plating rack for supporting plate-like articles, including a substantially U-shaped frame having a body and arms provided with hangers for supporting the rack, and with a plurality of resilient cross bars arranged between the arms substantially parallel with the body, each cross bar and the body having members for engaging the edges of the articles.

7. An electro-plating rack for supporting plate-like articles, including a substantially U-shaped frame having a body and arms provided with hangers for supporting the rack, and with a plurality of resilient cross bars arranged between the arms substantially parallel with the body, each cross bar and the body having members for engaging the edges of the articles, each of said members comprising a body portion secured to the frame body or to a cross bar and arms extending laterally from the body, the free end of each arm having a V-shaped notch to receive the edge of the article.

Signed at New York city in the county of New York and State of New York this 5th day of November A. D. 1928.

LOUIS LICHTMAN.