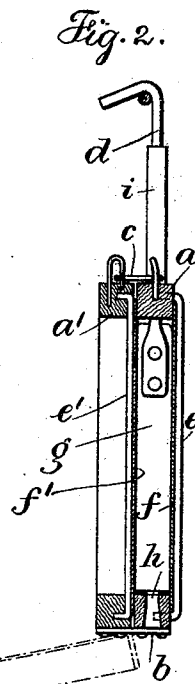
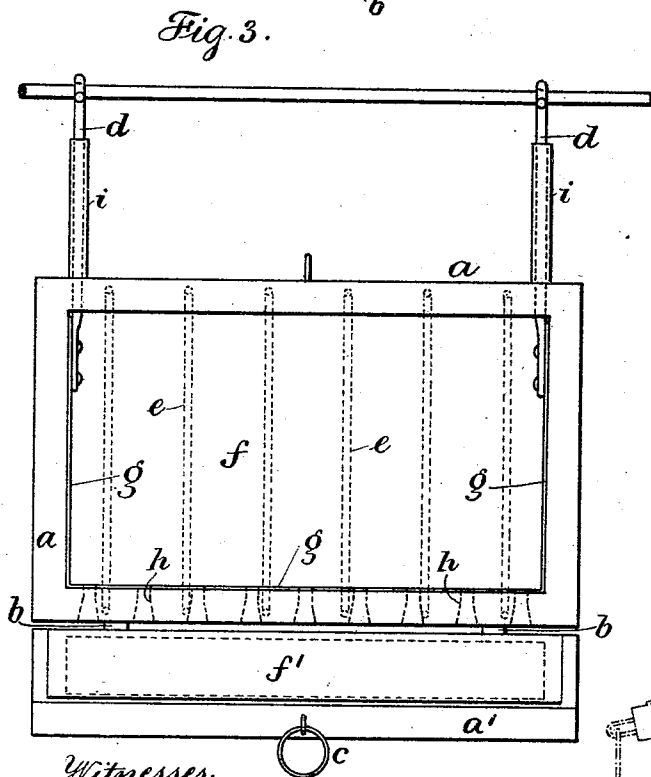
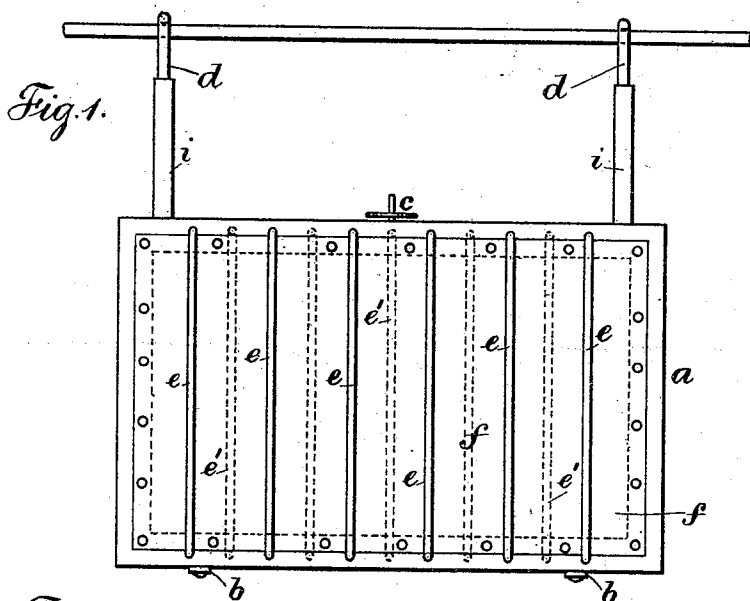


(No Model.)

S. C. CATLIN.
ELECTROPLATING APPARATUS.

No. 496,597.

Patented May 2, 1893.



Witnesses.
J. Stait
Chas. H. Smith

Inventor:
Seth C. Catlin.
Per. Lemuel W. Perrell

UNITED STATES PATENT OFFICE.

SETH C. CATLIN, OF BLOOMFIELD, NEW JERSEY, ASSIGNOR TO EMMA F. CATLIN, OF SAME PLACE.

ELECTROPLATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 496,597, dated May 2, 1893.

Application filed June 6, 1892. Serial No. 435,610. (No model.)

To all whom it may concern:

Be it known that I, SETH C. CATLIN, a citizen of the United States, residing at Bloomfield, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Electroplating Apparatus, of which the following is a specification.

Heretofore in electro plating articles it has been usual to connect a fine wire to each article to be plated and to suspend the articles in the plating solution by these wires from the cathode or negative pole. This is an expensive and tedious operation, especially with small articles. Wire baskets have also been employed for holding articles to be plated, their disadvantage being in the room occupied, and in the liability to fill them to too great a depth for the proper and even action of the plating solution on the articles.

The object of my invention is to overcome these objections by the peculiar receptacle hereinafter described and which is especially adapted for plating small articles.

In carrying out my invention I employ two frames hinged together and surfaced with cloth or similar material to make a receptacle within which to place and wholly inclose the articles to be electro plated. A conducting wire or strip is secured to the inner edge of one frame and to its ends are connected hook-ended wires or hangers which pass through the frame and are employed to suspend the frame in the plating solution from the cathode or negative pole. The articles to be plated are placed within the frame in a uniform and thin layer in metallic contact with the conducting wire and the frames are set vertically in the plating bath, consequently the articles being plated are all nearly equidistant from the anodes, resulting in superior and more uniform work, and the cloth sides prevent "burning" of the articles while being plated if the frames are placed near the anodes.

In the drawings Figure 1 is an elevation; Fig. 2 a cross section showing my improvement and Fig. 3 is an elevation with the holder as open for receiving the articles.

a a' represent two frames preferably of wood connected together along one edge by hinges *b*. A ring *c* connected by a staple to

the frame *a'* and adapted to pass over a peg in the frame *a* is shown as a means of connecting the frames at the edge opposite the hinges *b*. I prefer to make the hinges of strips of rawhide as the joints of a metal hinge are liable to be affected by the metallic deposit.

I employ muslin, canvas or similar material *ff'*, and stretch the same upon the frames *a a'* as a surface and prefer to employ tacks as the most ready and economical means of securing the fabric upon the face of the frames. These cloth sides provide for wholly inclosing the articles to be plated and prevent said articles coming in contact with impurities floating in the plating solution.

I have shown and prefer to employ stiffening and strengthening bars or wires *e e'* extending across between the opposite sides of the frames *a a'* secured at their ends to such frames. The bars *e* and *e'* are outside the respective fabrics. The strips of fabric *ff'* are preferably secured to corresponding faces of the frames *a a'*, so that when the frames *a a'* are brought together, as shown in Fig. 2, the space within is limited to the thickness of the one frame *a*. The frames however might be surfaced on opposite sides so as to have the space within equal to the thickness of the two frames.

The inner edge of the frame *a* has connected to it a conducting wire or strip of metal *g*, and I prefer to extend the same along the three inner edges of the frame *a* and to connect the upper ends thereof with the lower ends of the hook ended hangers or wires *d* connected to the frame *a* and by which the connected frames *a a'* are suspended from the cathode or negative pole in the plating solution. I prefer to make openings *h* through the lower portion of the frame *a* and metal strip *g* for the free entrance of the plating solution. Similar openings may be made through the end portions of the frame *a*.

The articles to be plated are laid or filled in the frame *a* in a thin layer, when the parts *a a'* are laid out horizontal, and said articles touch one another at places and also touch the metal conductor *g*. When the parts of the frame are brought together and connected

- and placed or hung vertically in the electro plating solution, metallic contact is established between the anode and the articles being plated through the conductor *g*. As the articles in the said frame are being plated it is preferable to occasionally remove them from the battery and rearrange them by a slight shaking and shifting, as this alters their points of contact and insures an even and thorough distribution of the electro plating. The wires *d* are provided with rubbersleeves *i* above the frame *a* to prevent them being acted upon or coated by a metallic deposit. These improved holders allow for the introduction of a larger number of articles in a given sized battery and for bringing the respective articles to a more uniform distance from the anode than with the holding devices heretofore employed.
- 20 The wire baskets heretofore employed were in reality conductors of electricity and becoming electro-plated were wasteful of plating metal. In my device the sides of muslin or similar fibrous material are non-metallic, consequently there is no metallic deposit thereon, and the only deposition is the small amount on the conductor *g*. The fabric however permits the passage of the plating solution through it.
- 30 I claim as my invention—
1. A holder for articles to be electro-plated composed of a shallow frame with a side of muslin or similar fibrous and non metallic material and a second similar frame, means for connecting the frames together to contain the articles to be plated and electric conduct-

ors passing into the interior of the frame substantially as set forth.

2. The electro plating frame, composed of hinged portions, a side surfacing of fabric or similar material to said hinged portions to form a receptacle, a metallic conducting wire or strip within said frame and the hanging wires connected to the ends of such conductor, substantially as set forth.

3. The electro plating frame composed of the hinged portions *a a'*, the porous sides *ff'* upon similar faces of the frame portions *a a'* to form a receptacle within one frame portion only, the conductor *g*, within one hinged portion and the hook ended suspending wires *d* connected at their lower ends to the ends of the conductor *g*, substantially as set forth.

4. The electro plating frame composed of the frame portions *a a'* hinged at *b* and having a fastening device at *c*, the side surfacing of fabric or similar material *ff'*, the bars *ee'*, outside the surface of the fabric, the conductor *g* within and lining one hinged portion *a* and the hook ended suspending wires *d* connected at their lower ends to the ends of the conductor *g*, there being openings at *h* through the frame portion *a*, and the conductor strip *g* for the entrance of the plating solution, substantially as set forth.

Signed by me this 26th day of May, A. D. 1892.

SETH C. CATLIN.

Witnesses:

H. E. CATLIN,
M. L. CATLIN.