

(No Model.)

H. L. BRIDGMAN.
APPARATUS FOR ELECTRODEPOSITING.

No. 526,482.

Patented Sept. 25, 1894.

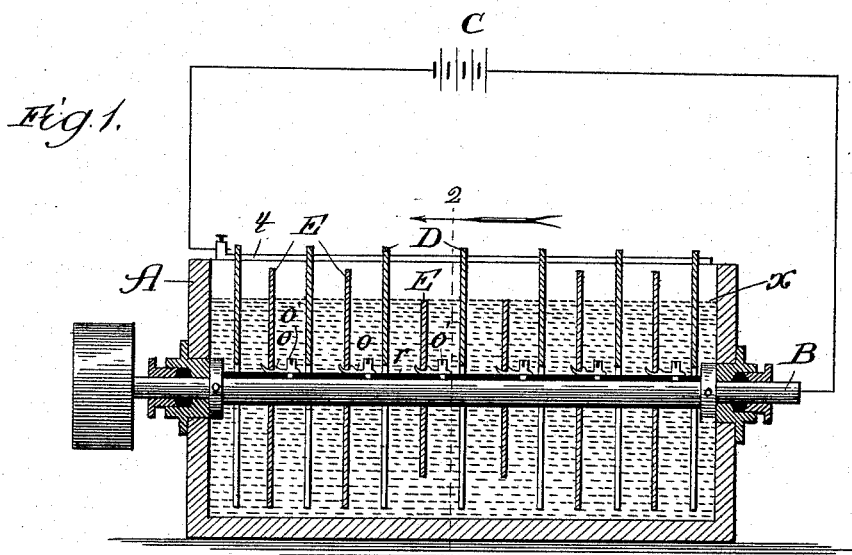


Fig. 2.

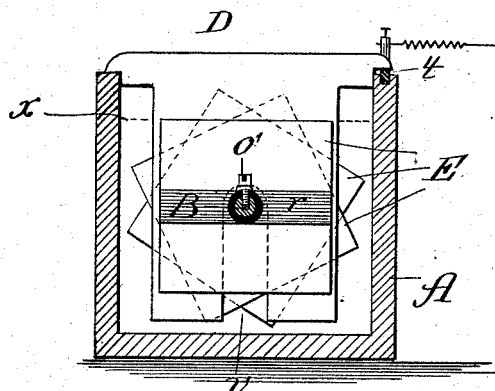
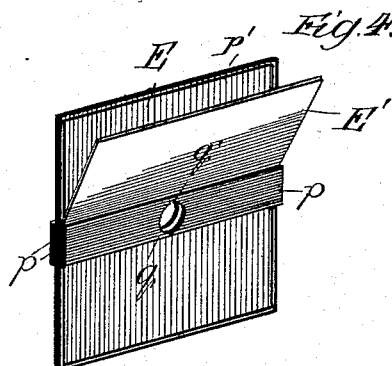
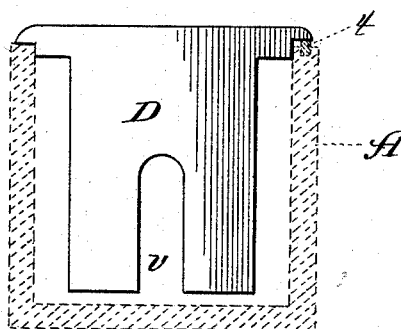


Fig. 3.



Witnesses:
Edw. C. Lloyd,
H. H. Williams.

Inventor:
Henry L. Bridgman,
By Dyrenforth & Dyrenforth,
Attys.

UNITED STATES PATENT OFFICE.

HENRY L. BRIDGMAN, OF BLUE ISLAND, ILLINOIS.

APPARATUS FOR ELECTRODEPOSITING.

SPECIFICATION forming part of Letters Patent No. 526,482, dated September 25, 1894.

Application filed October 3, 1893. Serial No. 487,111. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. BRIDGMAN, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Electrodepositing Apparatus, of which the following is a specification.

The object of my invention is to provide such a serial arrangement of the cathode-molds of angular shape in the electrolytic bath as to cause an enhanced stirring effect on the electrolyte by rotation of the cathodes therein.

In the accompanying drawings—Figure 1 is a view in longitudinal sectional elevation showing an electro-depositing apparatus provided with my improvement. Fig. 2 is a section taken at the line 2 on Fig. 1 and viewed in the direction of the arrow. Fig. 3 shows one of the anodes in front elevation. Fig. 4 is a perspective view of a cathode of the angular form employed in the apparatus as represented in Figs. 1 and 2.

A is the depositing vat containing the electrolytic fluid, (the line of which is indicated at *x*), and having journaled in it the rotary shaft B, surrounded by insulation *r* and which is connected with one pole of a generator C.

The anodes D may be of the plate-shape illustrated and supported to be suspended in the vat at suitable intervals apart, on the upper edges thereof, as shown, with one side of each bearing against a conductor *t* connected with the opposite pole of the generator and extending along an upper edge of the vat; and the anode-plates are slotted, as at *v*, to adapt them to straddle the insulated rotary shaft B.

E, E are the cathode-molds, each of which is shown as a rectangular plate (of copper) having a central perforation *q* at which to encircle the shaft B, the plate being insulated about its edges as shown at *p'* and provided with insulating strips *p*, extending centrally across it on its opposite sides from edge to edge. The plate-cathodes E are adjusted on the rotary shaft to alternate with the anodes D thereon, and they are shown to be fastened in place each by means of a clip *o*, of metal, engaging the plate at a recess *q'* in its

central opening *q* and secured to the shaft B by means of screws *o'* penetrating the insulation *r* to contact with the metal of the shaft and thereby include the cathodes in the circuit of the generator C.

The shaft carrying the cathodes is slowly rotated in the electrolytic bath, and the deposit takes place on the exposed surfaces of the plates E. After the deposit on each cathode has accumulated to the desired thickness, the resultant rectangular slabs or plates E' (four in number on each plate, according to the illustrated arrangement of the insulation upon it) molded, as it were, by the deposit on the cathode-surfaces, are taken off, or stripped therefrom, thus without incurring, by the act of separation, impairment of the desired plate-form of the molded metal article, one of which is represented in Fig. 4 as undergoing separation from the mold. The cathode plate-molds E may then be prepared for another deposit, the preparation consisting in coating the surfaces for the deposit with a substance, such as graphite, which will prevent too great adherence of the deposit to the cathode.

A particular advantage is attained by the comparatively numerous cathodes of the angular plate form applied at intervals to the rotary shaft, namely, that of causing thorough stirring of the electrolytic fluid by the rotation of the shaft. I produce the greatest stirring effect, and, moreover, also a relative balancing effect of the angular plates E on the shaft, by disposing them, as indicated in Fig. 2, successively, at varying angles to each other, thus to cause the corners to extend successively in different planes radially with relation to the longitudinal axis of the shaft.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an electro-depositing apparatus having a depositing vat, a rotatably supported shaft, one or more anodes and cathodes in the form of angular metal plates, supported on the shaft to rotate with it and to alternate with the anodes and extending at their corners, successively in different planes, substantially as and for the purpose set forth.

2. In an electro-depositing apparatus having a depositing vat, a rotatably supported

shaft and anodes suspended in the vat at intervals along the shaft, and cathodes in the form of angular metal plates supported on the shaft to rotate with it and to alternate
5 with the anodes and extend, at their corners, successively in different planes, said cathodes being insulated about their edges and pro-

vided with insulating strips on their sides and dividing them into molds, substantially as and for the purpose set forth.

HENRY L. BRIDGMAN.

In presence of—

M. J. FROST,

W. N. WILLIAMS.