

No. 724,862.

PATENTED APR. 7, 1903.

C. J. HENRY.
CATHODE.

APPLICATION FILED AUG. 6, 1902.

NO MODEL.

Fig. 1.

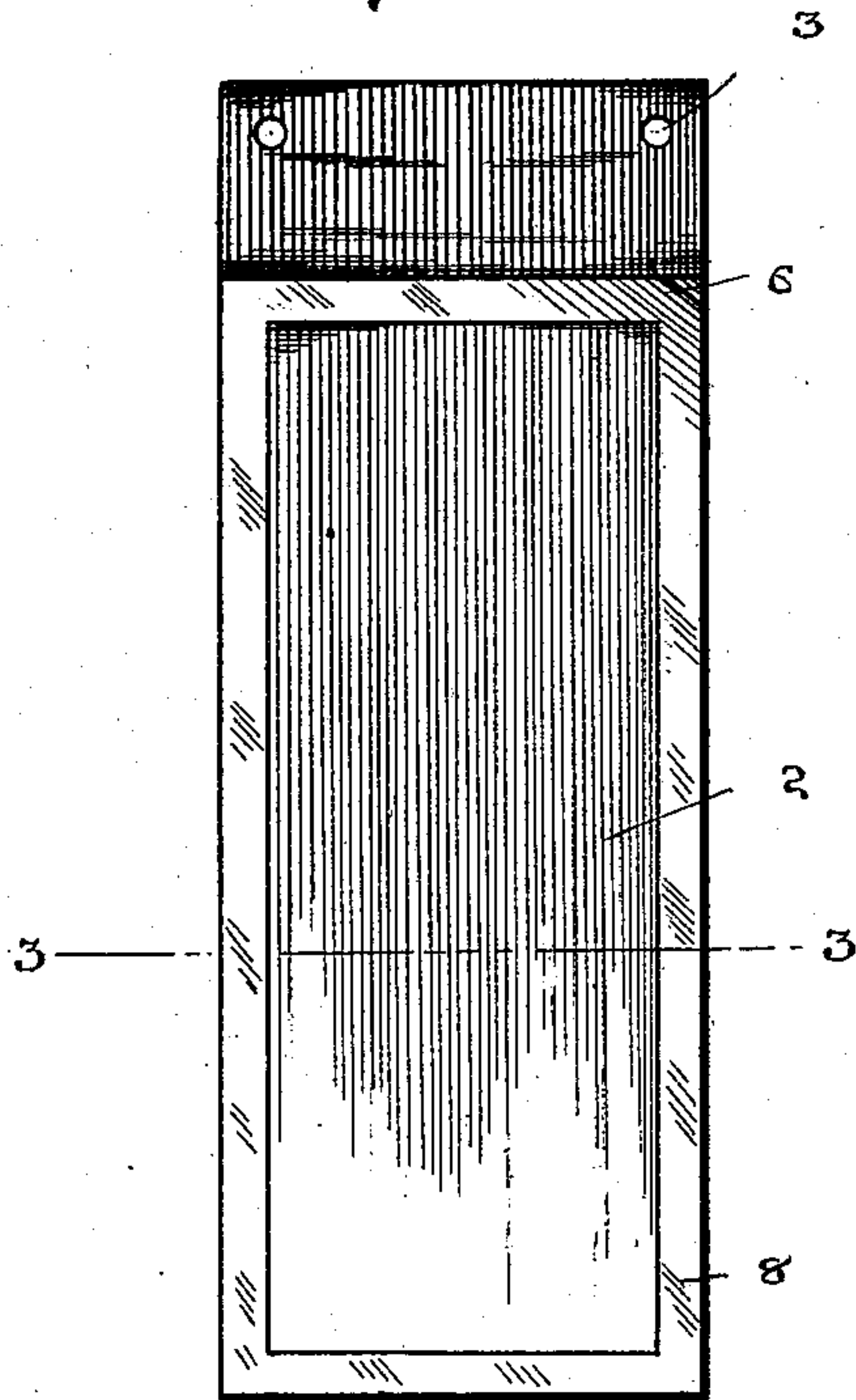


Fig. 2.

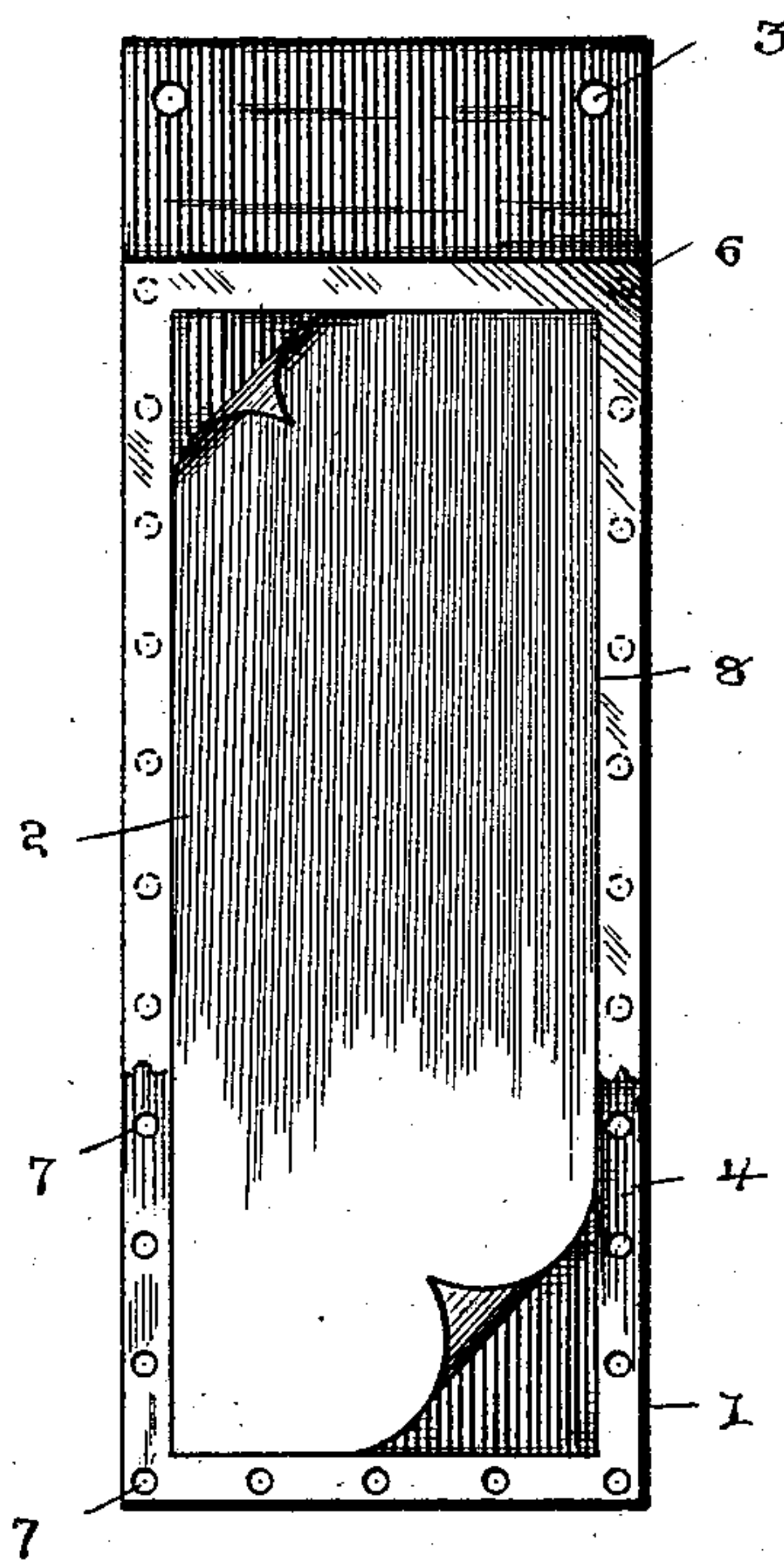
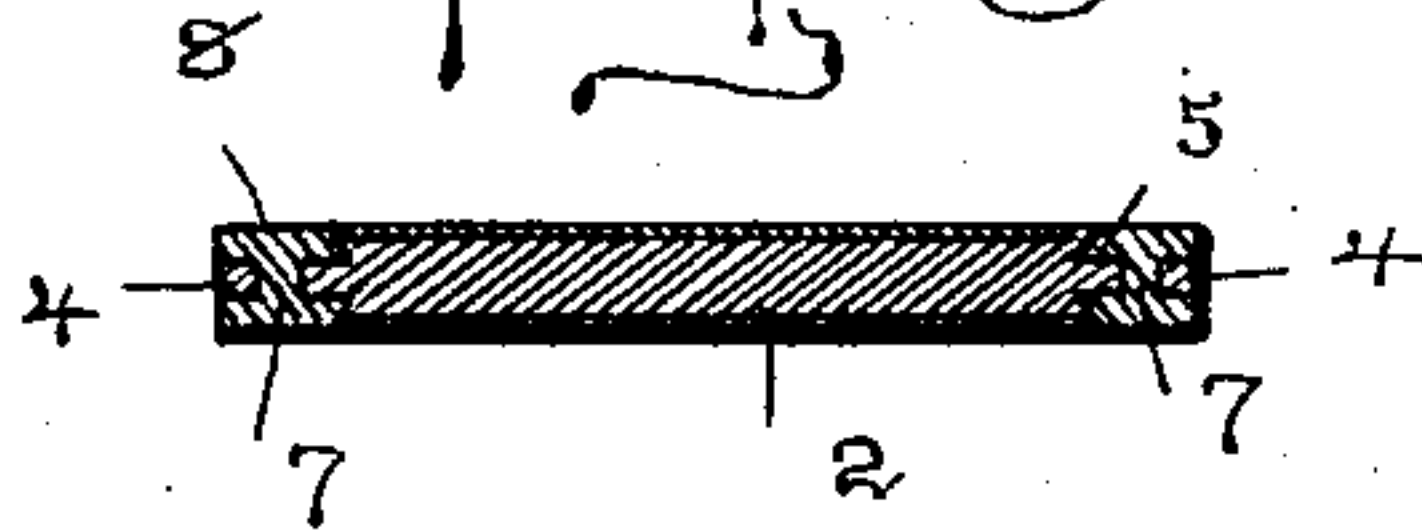


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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CATHODE.

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Application filed August 6, 1902. Serial No. 118,665. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JOHN HENRY, a citizen of the United States, residing at Perth Amboy, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Cathodes, of which the following is a specification.

My invention has relation to new and useful improvements in plates or elements employed as cathodes or deposit-plates in the production of metallic sheets by electrodeposition.

The objects of the invention are to provide a plate of the kind mentioned which will be of an improved and simplified construction and wherein the usual wooden supporting-frame for the cathode or deposit plate and also the usual cumbersome insulating means for preventing deposits upon the edges of the plate may be dispensed with.

A further object is to so construct the plate that the metal may be prevented from becoming deposited upon the edge or marginal faces thereof, and thereby preventing the ready removal of the deposit-sheets.

A further object is to provide an efficient means whereby the sheet formed by the metallic deposit upon the face of the cathode-plate may be removed or stripped therefrom without cutting or tearing the sheet formed or allowing any of the deposit to remain upon the plate.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a view in elevation of a plate constructed in accordance with my invention and a deposit-sheet thereon. Fig. 2 is a view in elevation, showing a plate upon which has been deposited a sheet of metal which is shown partially stripped from the plate and also a portion of the insulating material removed therefrom. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 1.

Referring to the drawings, 1 designates a cathode or deposit plate which may be made from copper, lead, or any other suitable metal or composition. I have shown this plate as being preferably oblong in shape; but it is obvious that it may be of any form to suit it to the purposes for which it is employed and

of any area and thickness desired. Formed upon each face of this plate 1 is a central raised or superficial area 2, the surface of which is polished to provide a smooth and sensitive surface and upon which the metallic deposit is received and held to form the sheet. At its upper portion the plate is provided with any suitable means by which it may be suspended or immersed within the electrical bath and whereby connection may be made with the proper electrical circuits. I have shown the plate as being provided with apertures 3, by which the connections above mentioned may be made. Partially surrounding the body of the plate is a projecting flange 4, which flange is arranged centrally of the edge faces of the plate and extends longitudinally thereof and provides both faces of the plate with a marginal cut-away portion or rabbet 5, which may be of such depth and width as may be desired or required. Disposed transversely of the plate, adjacent to the upper portion thereof, is a channel or groove 6, which extends entirely across the plate and opens at each of its ends into the rabbets formed by the centrally-disposed flanges upon the respective sides of the plate and provides the raised or superficial area of the plate with a continuous marginal channel or recess. At determined intervals the flange 4 is provided with perforations 7, arranged longitudinally of the said flanges and opening upon the front and rear faces thereof, substantially as shown in the drawings in Fig. 2. Within the said marginal channel or rabbet and the transverse groove 5 I place an insulating material 8, such as putty, which is unaffected by the solution in the bath and which is applied to the plate while in a plastic state. This material when applied has sufficient pressure exerted thereon to force it through the perforations 7, and it will thus be seen that the insulation upon both faces of the flange 4 will be joined by the portion extending through the perforations and when allowed to set the said insulation will be held securely in position about the edges of the superficial area. When the material is placed upon the flanges of the plate, its surface is smoothed or scraped off until it is flush or coincident with the superficial or body

portion of the plate, substantially as shown, or may be permitted to project a slight distance above the face of the plate.

The manner in which my improved plate is used is as follows: After the insulating material has been applied to the marginal rabbets and allowed to harden the surface of the superficial or raised area is covered with any of the well-known materials to prevent a too close adhesion of the deposit. The cathode-plate is then immersed in the proper bath and the metallic deposit is made thereon in a well-known manner and is allowed to continue until a sheet of the proper or desired thickness is made. The plate is then removed, and the metallic sheet may be stripped therefrom by raising any of the corners of the sheet and pulling the same away from the cathode-plate.

From the above description, taken in connection with the drawings, it will be seen that my improved construction of the plate and the manner of applying the insulating material will confine the area of metallic deposit to the superficial or raised portion of the cathode-plate, inasmuch as the insulating material effectually prevents any deposit upon the marginal edges of the plate. It will also be seen that the edges of the sheet formed by the metallic deposit will not be held upon the plate in any manner and that the sheet may be stripped or removed from the cathode-plate as an entirety without cutting or tearing the same and without leaving any of the deposit upon the plate. By my improved

construction it is also unnecessary to remove the plate from its insulating-frame in order to facilitate the removal of the deposit-sheet, and if at any time any portion of the insulation should become removed or injured the portion damaged may be repaired without the necessity of providing a complete insulation-frame.

Having thus fully described the invention, what is claimed as new is—

1. A cathode-plate for receiving removable sheet-metal deposits comprising a body to receive the deposits having superficial areas, flanges surrounding the opposite side edges and lower end of the plate by forming rabbets at such parts of the body, said flanges having perforations therethrough, and a plastic insulation applied to the flanges and engaging the perforations.

2. A cathode-plate for receiving removable sheet-metal deposits comprising a portion to receive the deposits having a superficial area which is polished to provide a smooth and sensitive surface, the said portion having side and end flanges formed by rabbets, and an insulation applied over opposite sides of the flange and practically flush with the opposite sides of the said portion.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES JOHN HENRY.

Witnesses:

L. ALBERT,

MATH HANSEN.