

(No Model.)

G. H. SLOANE.  
GALVANIC BATTERY.

No. 382,738.

Patented May 15, 1888.

Fig. 1.

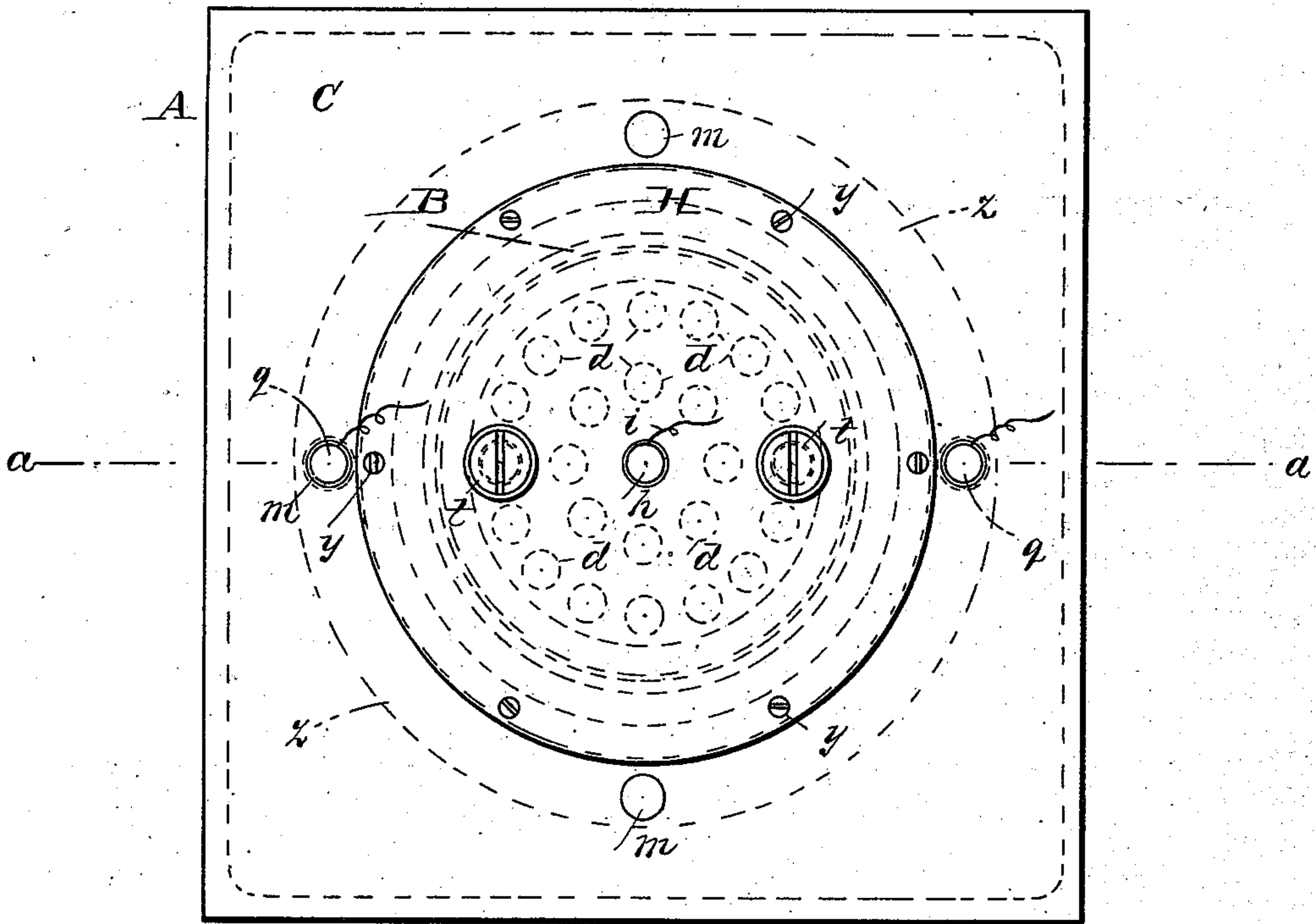
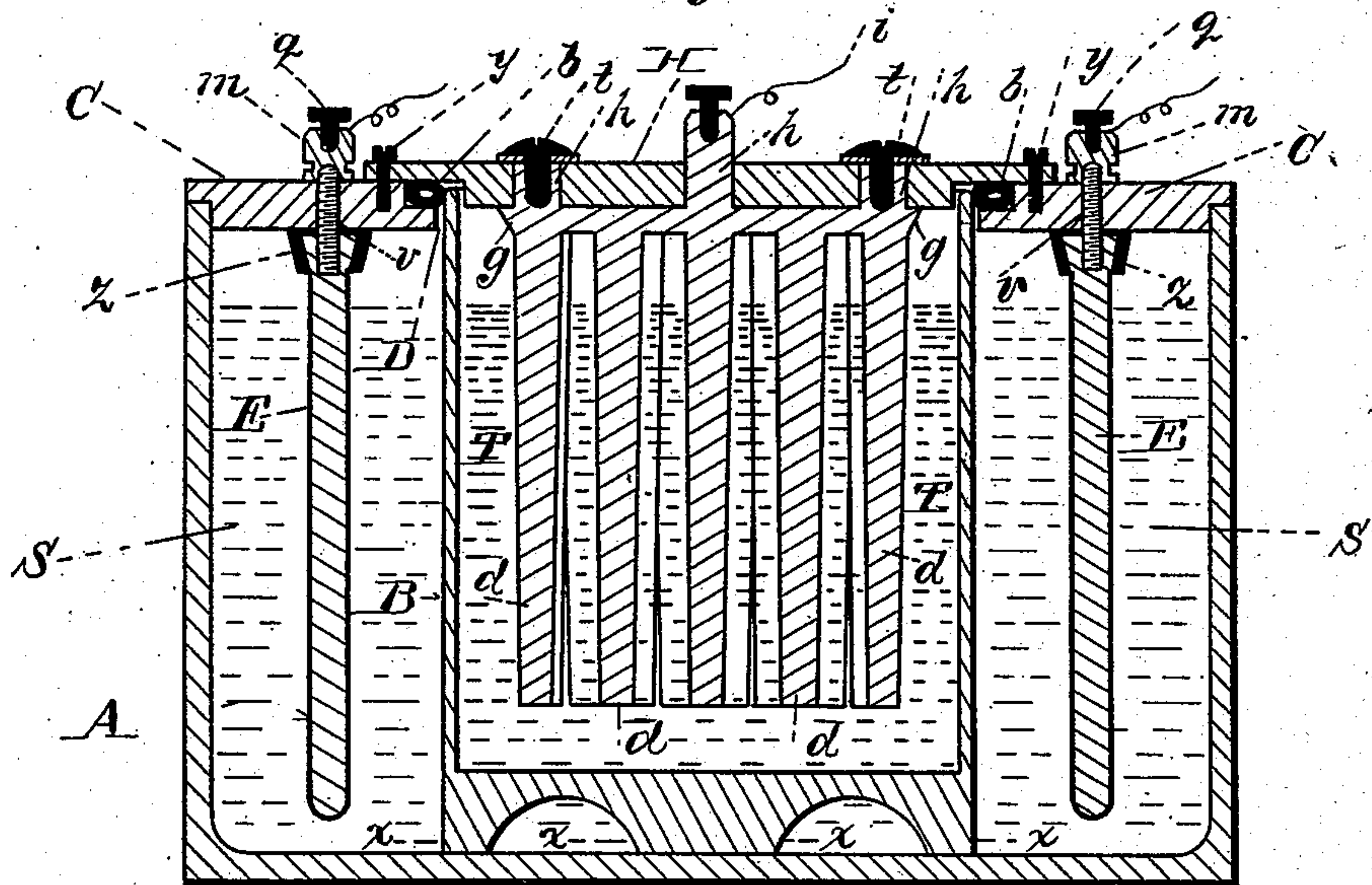


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 382,738, dated May 15, 1888.

Application filed August 31, 1887. Serial No. 248,348. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. SLOANE, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Galvanic Batteries, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved jar, and Fig. 2 a vertical longitudinal section of the same.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of galvanic-battery jars in which the solutions are separated by a porous cup or partition; and it consists in a novel combination of parts, as hereinafter set forth and claimed, the object being to produce a more effective and otherwise desirable device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the outer cell, and B the inner cell, of the battery-jar.

The outer cell consists of a tank, which is provided with a tight-fitting cover, C, having a circular or other suitably-formed central opening, D, to receive the inner cell, B. The inner cell consists of a circular or other suitably-formed cup composed of kaolin, biscuit porcelain, or any other suitable porous substance, and has its bottom formed into legs or supports *x*, to allow a free circulation of the outer solution under the cup.

The negative plates or positive poles E E consist of sticks of carbon, around the ends of which is cast a lead ring, *z*, which extends around the inner side of the cover C, as many plates E being employed as may be deemed necessary. Screws *v* are also encircled by the rings *z*, and the connection electroplated with copper, to form a continuous conductive area and prevent

the acid from working in between the carbon and lead and thereby spoiling the electrical connection. The screws *v* are passed through openings in the cover C and secured in position by nuts *m*, a cap or caps, *q*, being attached to one or more of said screws and the positive wire secured therein. The inner cell, B, is also provided with a cover, H, which overlaps the inner edge of the cover C, and is secured thereto by screws *y*. The cover C has its inner edge rabbeted and a tubular rubber packing-ring, *b*, inserted therein, to prevent leakage between the two covers, or from one cell into the other over the top of the inner cell. The upper edge of the inner cell projects into the rabbet-recess of said cover, between the shoulder thereof and the packing-ring *b*, and is thereby held in place without danger of breakage.

The positive plate or negative pole consists of a number of rods of zinc, *d*, cast in a supporting-plate, *g*, and provided with upwardly-projecting lugs *h*, the central lug being extended and drilled to receive the connecting-wire *i*, while the others are flush with the top of the cover H, and are drilled and threaded to receive screws *t*, by means of which the plate is fastened to said cover. The outer cell, containing the negative plate, is filled with a depolarizing solution, S, preferably composed of chromic and sulphuric acids. The porous cup B is filled with an alkaline solution, T, preferably composed of caustic soda and water; but any other suitable solution may be employed.

By the use of my improvement a far larger surface of carbon and zinc is presented to the action of the solutions than is ordinarily the case in jars of this description. The solutions are also prevented from destroying the electrical connection between the negative plate and the positive terminal when electroplated, as described, and the danger of their becoming accidentally displaced or "spilled" from the jar is obviated.

Having thus explained my invention, what I claim is—

1. In a battery of the character described, the cells A B and cover C, in combination with the carbon or negative plate E, provided with the lead ring *z*, and with the screw *v*, extending



through said cover, and the screw-cap *m*, applied to said screw outside said cover, substantially as described.

2. In a battery of the character described, 5 the zinc or positive plate *d*, cast integral with the supporting-plate *g*, and provided with lugs *h*, in combination with the cover *H*, screws *t*, cells *A B*, and cover *C*, the cover *H* being secured to the cover *C* by screws *y*, substantially as set forth. 10

3. The improved battery-jar herein described, the same consisting of the outer or containing cell, *A*, provided with the cover *C*, the porous cell *B*, provided with the cover *H*, 15 overlapping the cover *C* and secured thereto by the screws *y*, the carbon *EE*, provided with the screws *v* and encircled by the lead ring *z*, the plate *g*, provided with the zinc rods *d* and secured to the cover *H*, the screw-caps *m*, and

packing-ring *b*, constructed, combined, and 20 arranged substantially as and for the purpose described.

4. In a battery, the combination of an outer cell, an inner cell, a cover for the outer cell, provided with an opening opposite the inner 25 cell, a cover for the inner cell, which shuts over the opening in the cover for the outer cell, said covers being rabbeted, and a packing in the rabbet of the outer cover, the upper edge of the inner cell extending between 30 said packing and the shoulder of the rabbeted cover of the inner cell, substantially as described.

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Witnesses:

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