(No Model.)

2 Sheets—Sheet 1.

W. W. BURNHAM.

ELECTRIC BATTERY.

No. 520,033. Patented May 22, 1894.

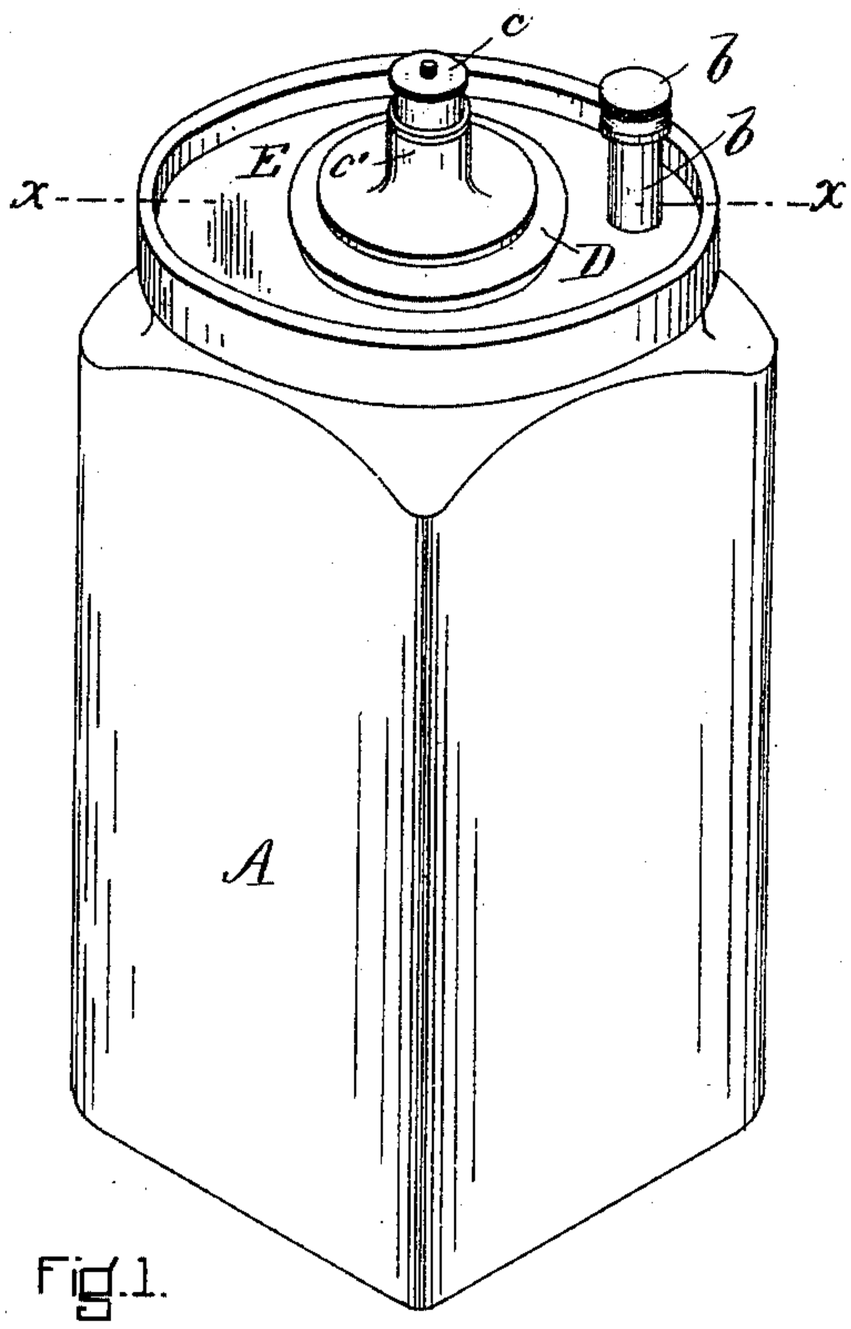

Fig. 1.

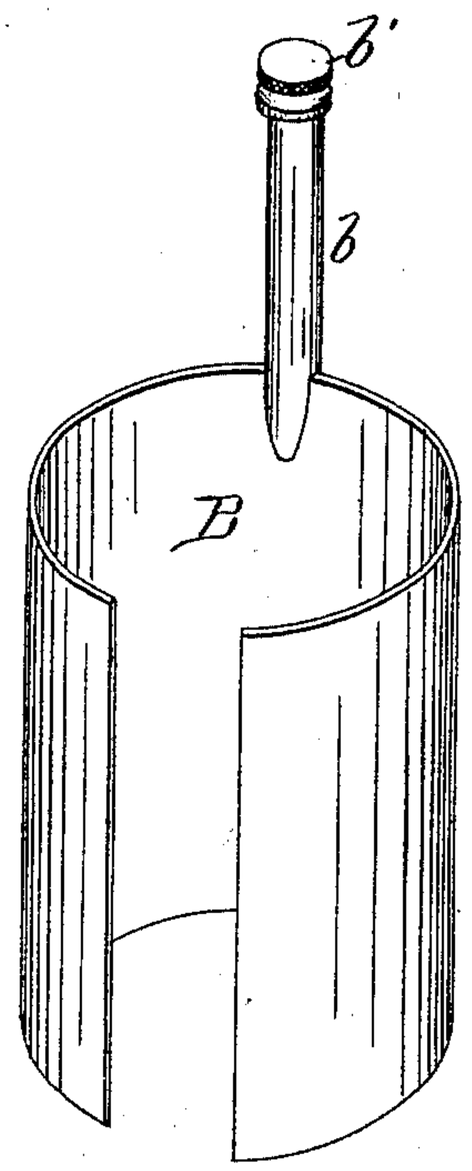

Fig. 2.

Fig. 4.

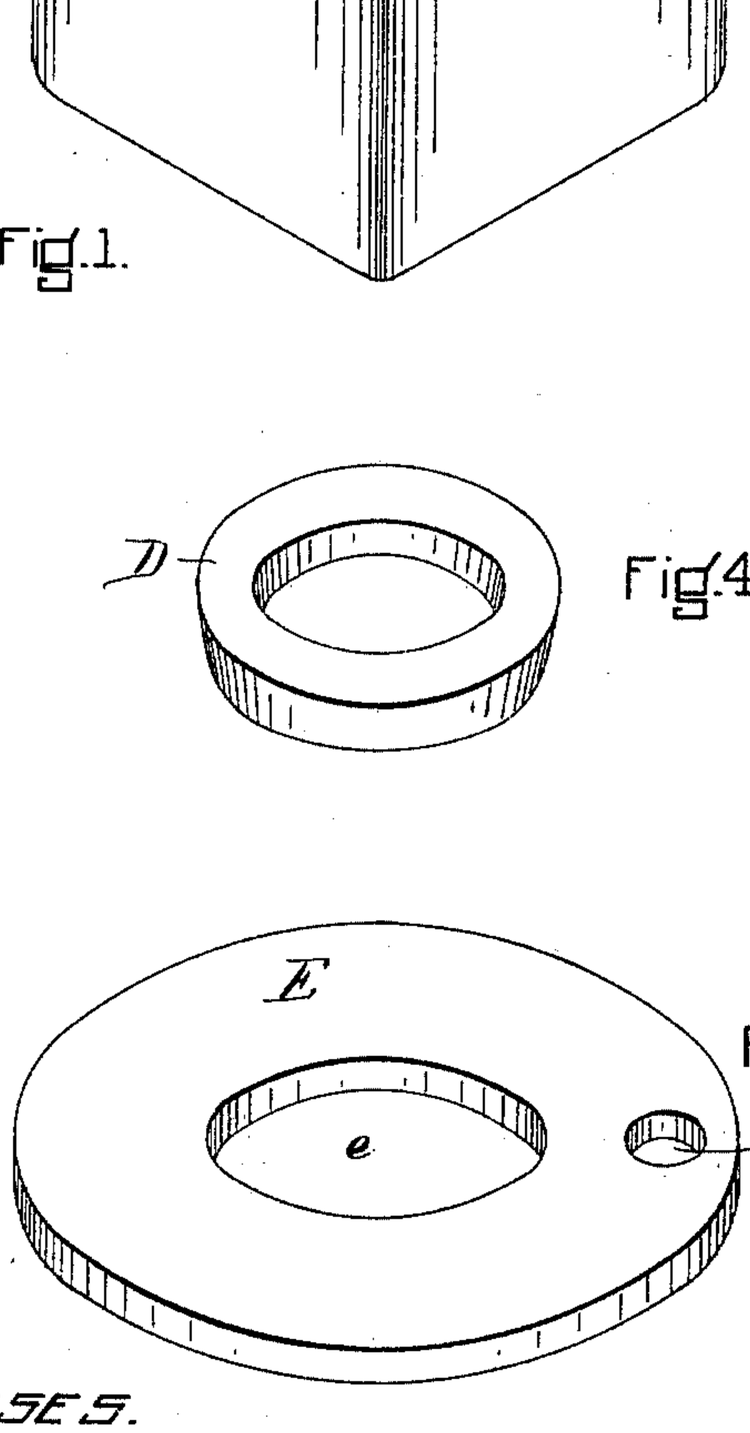

Fig. 5.

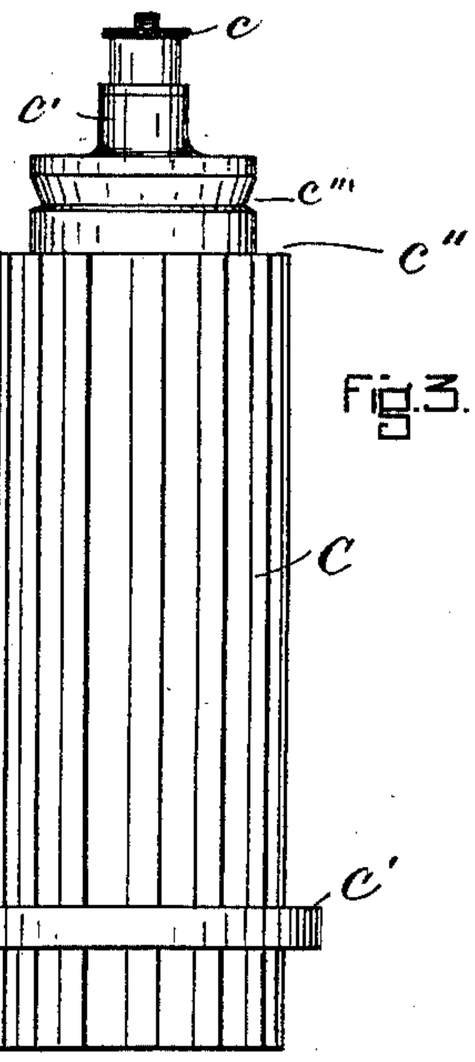

Fig. 3.

WITNESSES.

Thomas, W. Lane

W. H. Leonard.

INVENTOR.

Wm. W Burnham

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

W. W. BURNHAM.

ELECTRIC BATTERY.

No. 520,033. Patented May 22, 1894.

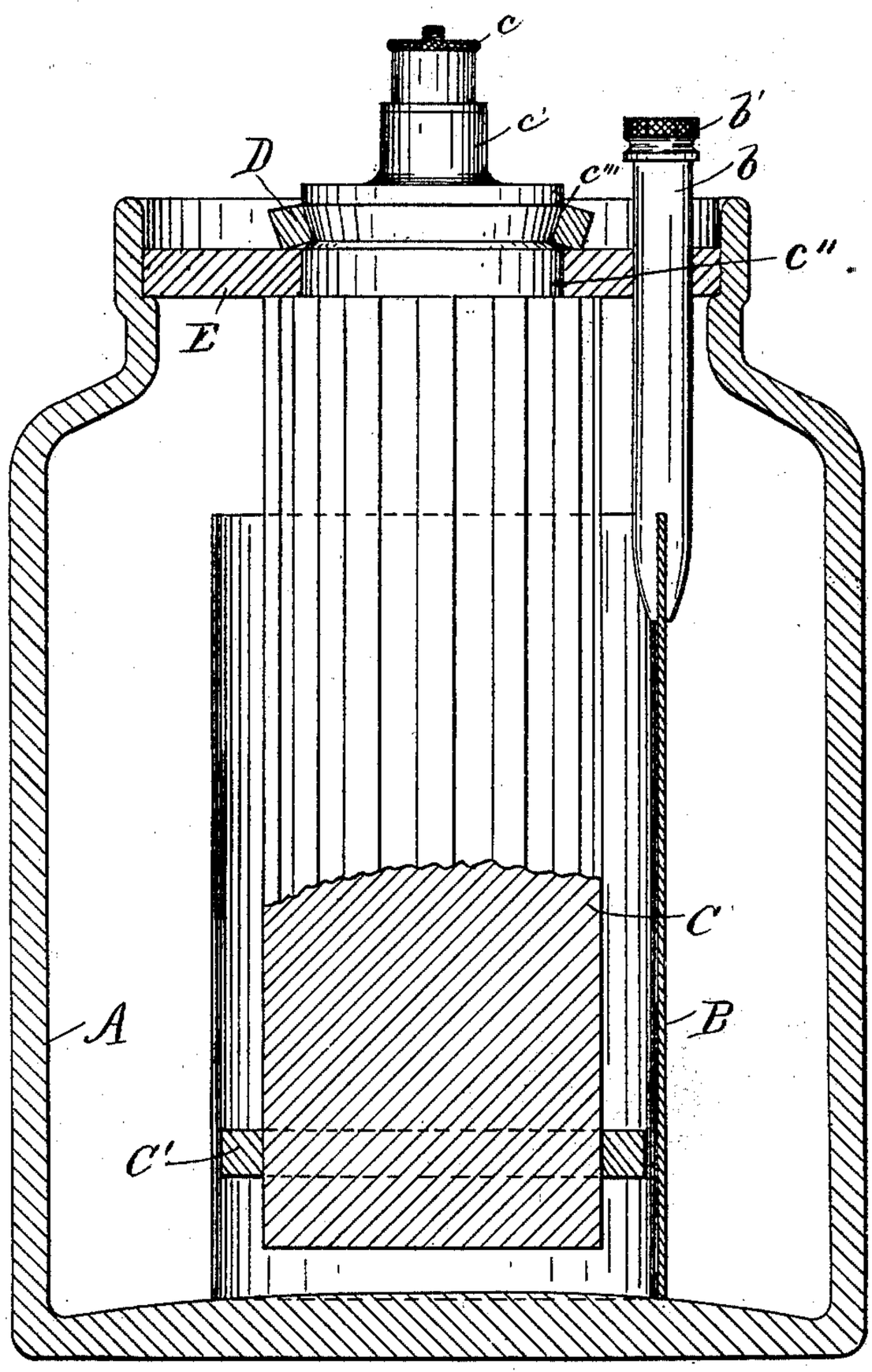

Fig. 6.

WITNESSES.

Thomas. W. Lane

W. H. Leonard.

INVENTOR.

Wm W Burnham

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM W. BURNHAM, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO THE ELECTRIC GAS LIGHTING COMPANY, OF PORTLAND, MAINE.

ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 520,033, dated May 22, 1894.

Application filed September 7, 1891. Serial No. 404,977. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. BURNHAM, of Newton, Massachusetts, have invented a new and useful Improvement in Electric Batteries, of which the following is a full and complete specification, reference being had to the accompanying drawings, in which—

Figure 1, is a perspective of the battery-jar A., showing the top view when all the constituents are in place, and the shelf in the neck of the jar A., formed somewhat as in some forms of the well known Leyden jar, so as to provide an interior shelf as a rest for the cover.

Fig. 2, is a perspective of a circular zinc B, having the projecting rod *b*, and the connecting screw *b'*.

Fig. 3, is a view of a carbon cup, or carbon electrode, C, which may be of various forms, insulating band C', metallic connecting screw *c*, mounted upon the carbon neck or projection *c'*, which is an extension of the carbon above the shoulder *c''*, and this neck or head *c'* is beveled, cut away or recessed, above the shelf, at *c'''*. The drawing is made of the porous carbon pot of the battery which is described in Letters Patent to Goodwin, of July 8, 1890, but I do not confine my invention to use with said porous pot, as it will be seen that my invention may be readily applied to supporting and maintaining in position, the cups or carbons, or other electrodes, of various forms which are constituents of various electric batteries; it being necessary only to form the tops of the electrode, so that a flexible band, or washer, may be retained in place above such projection, and the battery-jar cover, about to be described.

Fig. 4, is a flexible band D, as for instance, an ordinary rubber band of proper size and properly beveled to closely clasp about the carbon neck at *c'''*.

Fig. 5, is a cover E, made preferably from some insulating substance as fibrite, of the proper shape and circumference to fit down upon the shelf of the jar A, and cut away at the center, *e*, so that the rubber band D, when its lower part fits tightly about the carbon at *c'''*, will fit over this center *e*, somewhat as a stopper fits over the mouth of a bottle. This cover E, is also perforated at *e'* to admit the stem *b*, of the zinc B, or to admit the zinc rod or bar if such form of zinc be used.

Fig. 6, is a vertical section through the complete battery at the line X of Fig. 1, and shows the outside jar, the supporting rod, of circular zinc B, carbon cup, or electrode, C having insulator C', shelf *c''*, recessed at *c'''*, top *c'*, screw *c*, band D, and cover E.

My invention relates to all such batteries as permit the deposit of crystalline matter at the base of the jar, to such as need a convenient and tightly fitting cover, or whenever it is desired to suspend an electrode above and free from the bottom of the jar. I thus avoid any interior short-circuiting, and secure a tight cover to prevent the escape of gas or liquid.

The purposes of my invention are to accomplish the above mentioned results, by my new combination, and by the utilizing of the weight of the electrode.

My invention consists in so forming, as by recessing or beveling, the top *c* of the electrode C, at *c'''* (which in the drawings is, as aforesaid, the Goodwin porous pot) that it cannot slip farther into the flexible band D, than desired; and in adapting a flexible band D to fit closely about the electrode, at *c'''*, and above the center *e* of the battery cover E, which is to rest upon a proper support, as an interior shelf, of the outer battery jar A; by which means I am enabled to obtain a battery having the electrode suspended out of contact with the bottom of the outer jar A, a cover kept tight by the aid of the weight of the electrode, and immunity from contact of the zinc and carbon elements near the top of the jar; which battery will be safe from short circuiting through crystalline deposits at the bottom of the jar, safe from leakage, gaseous or otherwise, or from contact of the zinc and carbon, and very convenient and easy of manipulation, as will be seen. To put it together, we have only to slip the zinc projection *b* (or its equivalent) through the hole *e'*, of the cover E and restore the binding screw *b'*; then place the cover E over the electrode projection *c*, until it rests upon the shelf *c''*, then "snap" the flexible band D about the projection *c* at *c'''*. The cover E. will then rest upon the interior shelf (preferably) of the

jar A, the flexible band will be retained in place by the beveled or recessed projection *c'''*, and will thus hold the cover E, in place.

I do not claim what is shown in the aforenamed patents, nor do I claim broadly, any element, process of manufacture or composition of the battery shown in the drawings, but I desire to protect my combination of means for avoiding short-circuiting, leaking and evaporation, and for conveniently suspending a battery electrode without pins or other means which are inconvenient of manipulation; and

What I claim is—

In an open circuit electric battery, the combination of devices to support the elements, to hold them properly separated from each other, and to act as a cover for the outer jar, namely, a cover properly perforated at the center and also for the rod of the circular zinc and supported by the outer jar, a carbon electrode having a diminished head or projection properly beveled, and a flexible band adapted to clasp said beveled projection and rest upon said cover, substantially as described.

Witness my hand this 21st day of August, 1891.

WM. W. BURNHAM.

Witnesses:
C. T. DAVIS,
THOMAS W. LAW.