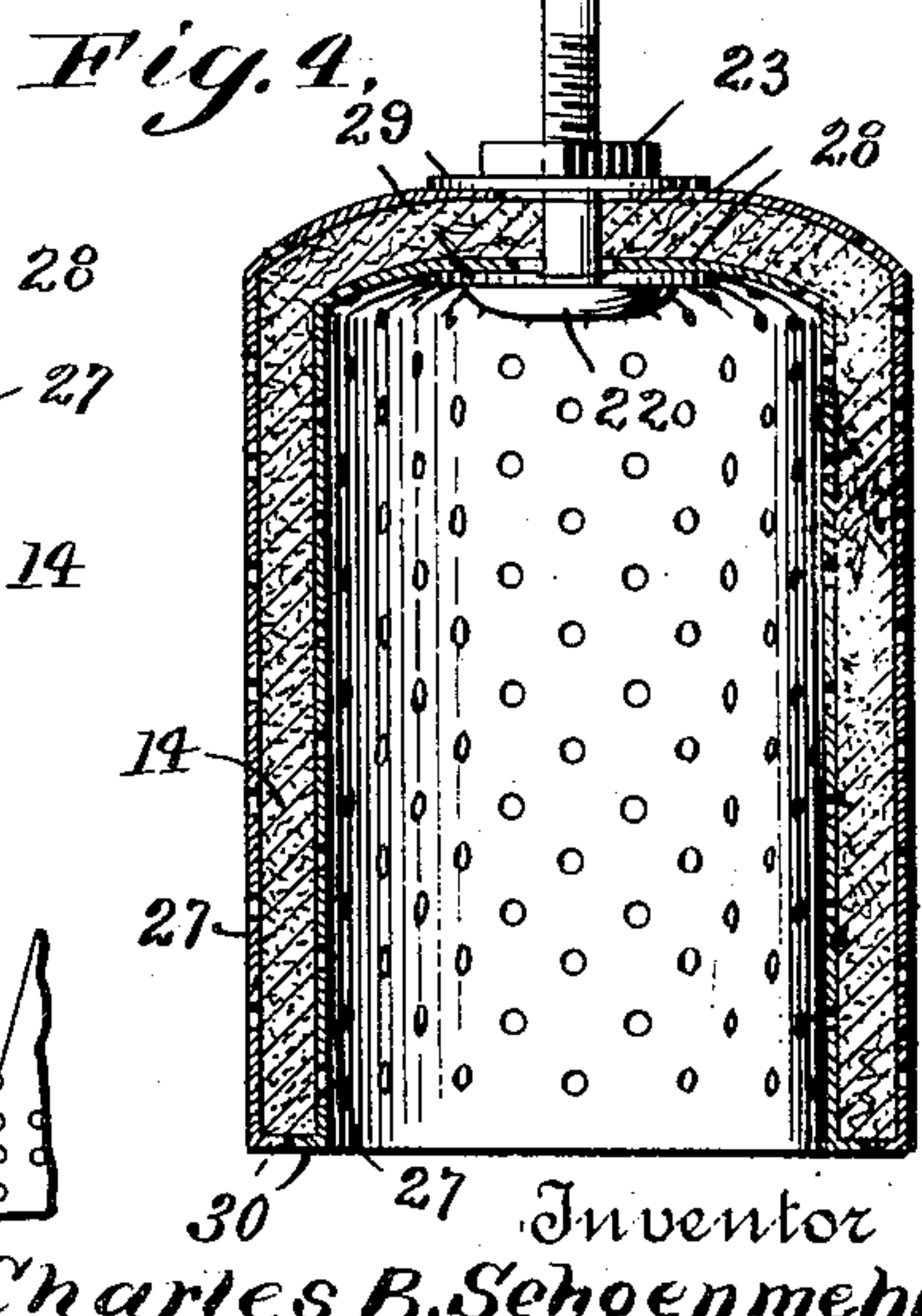
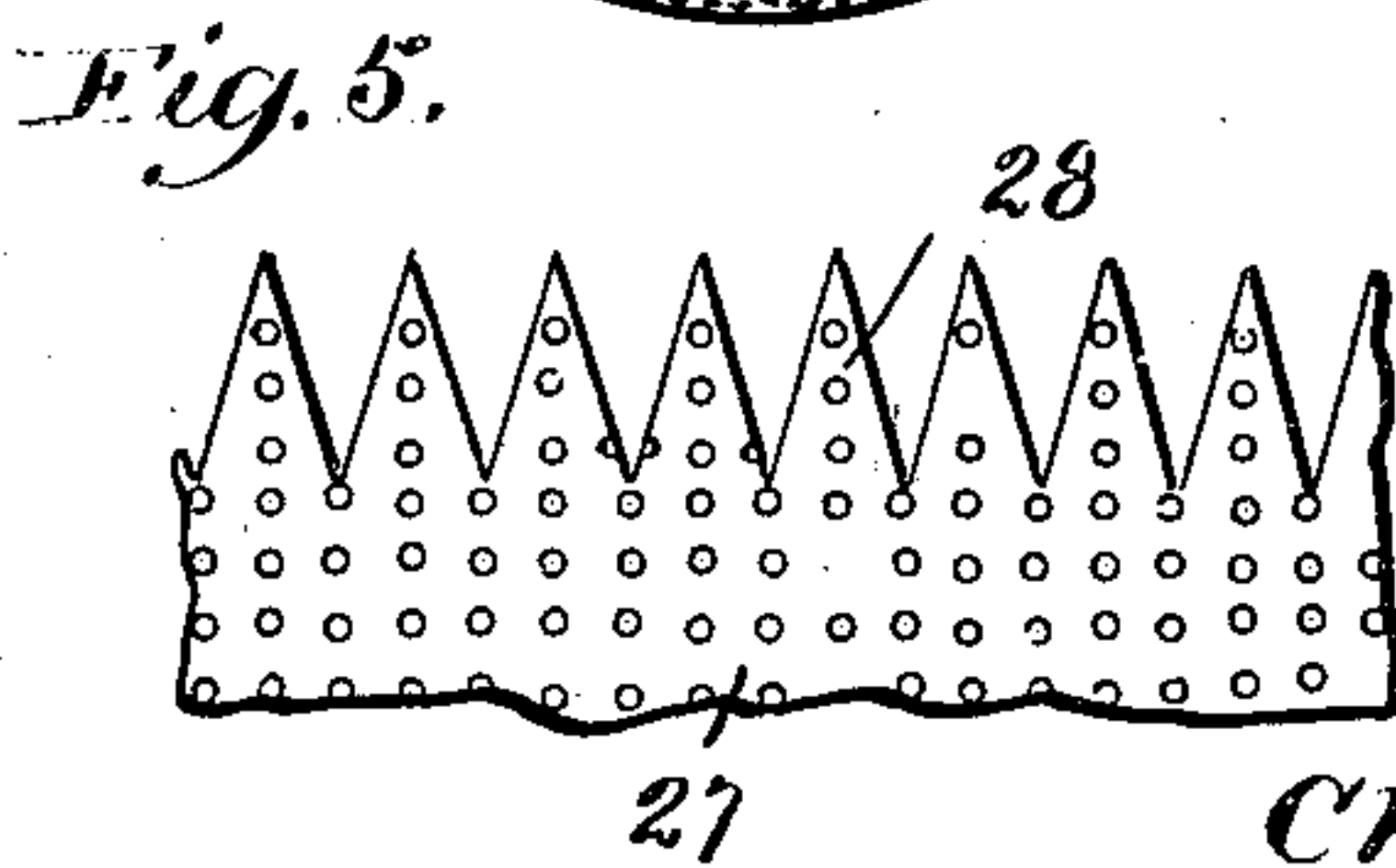
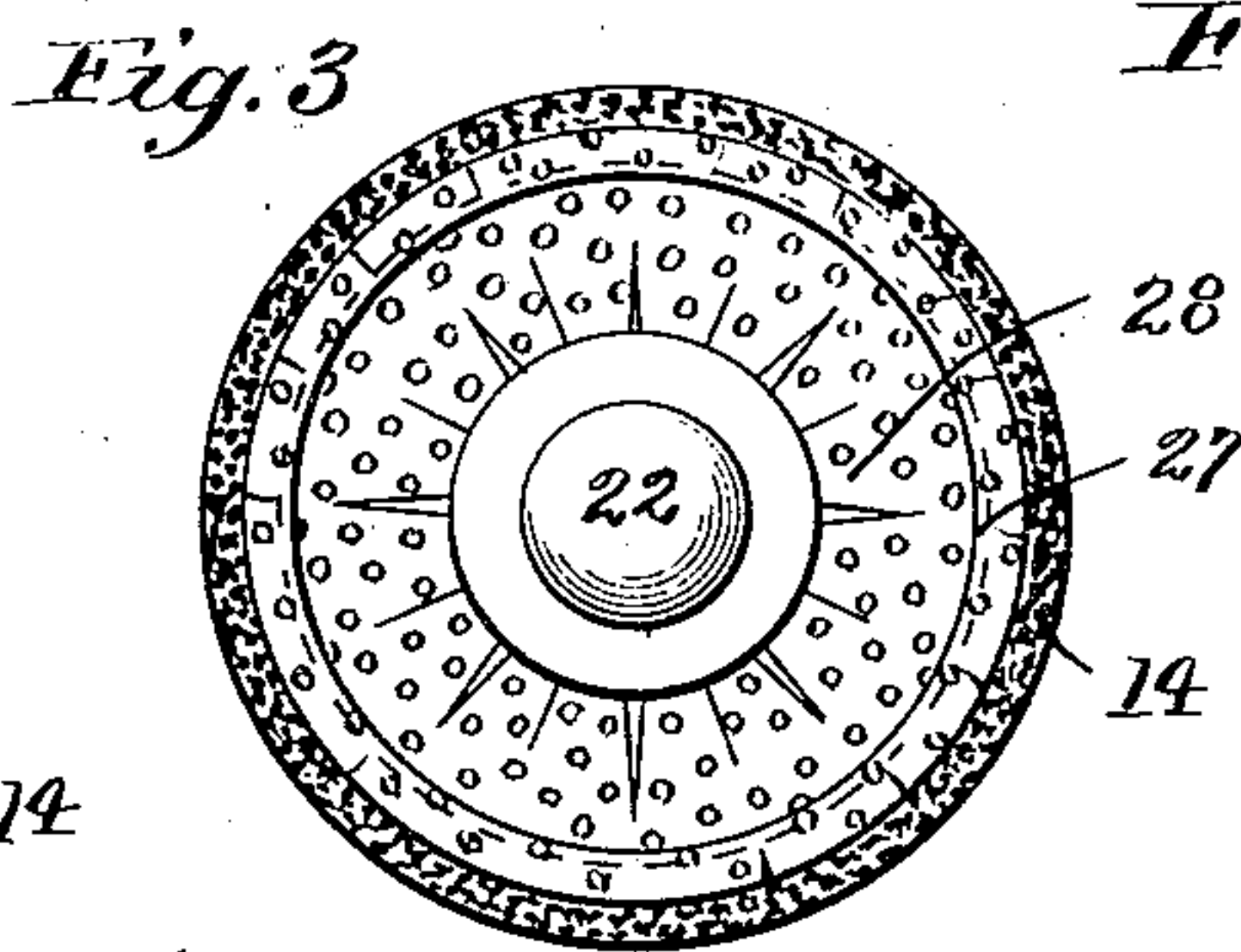
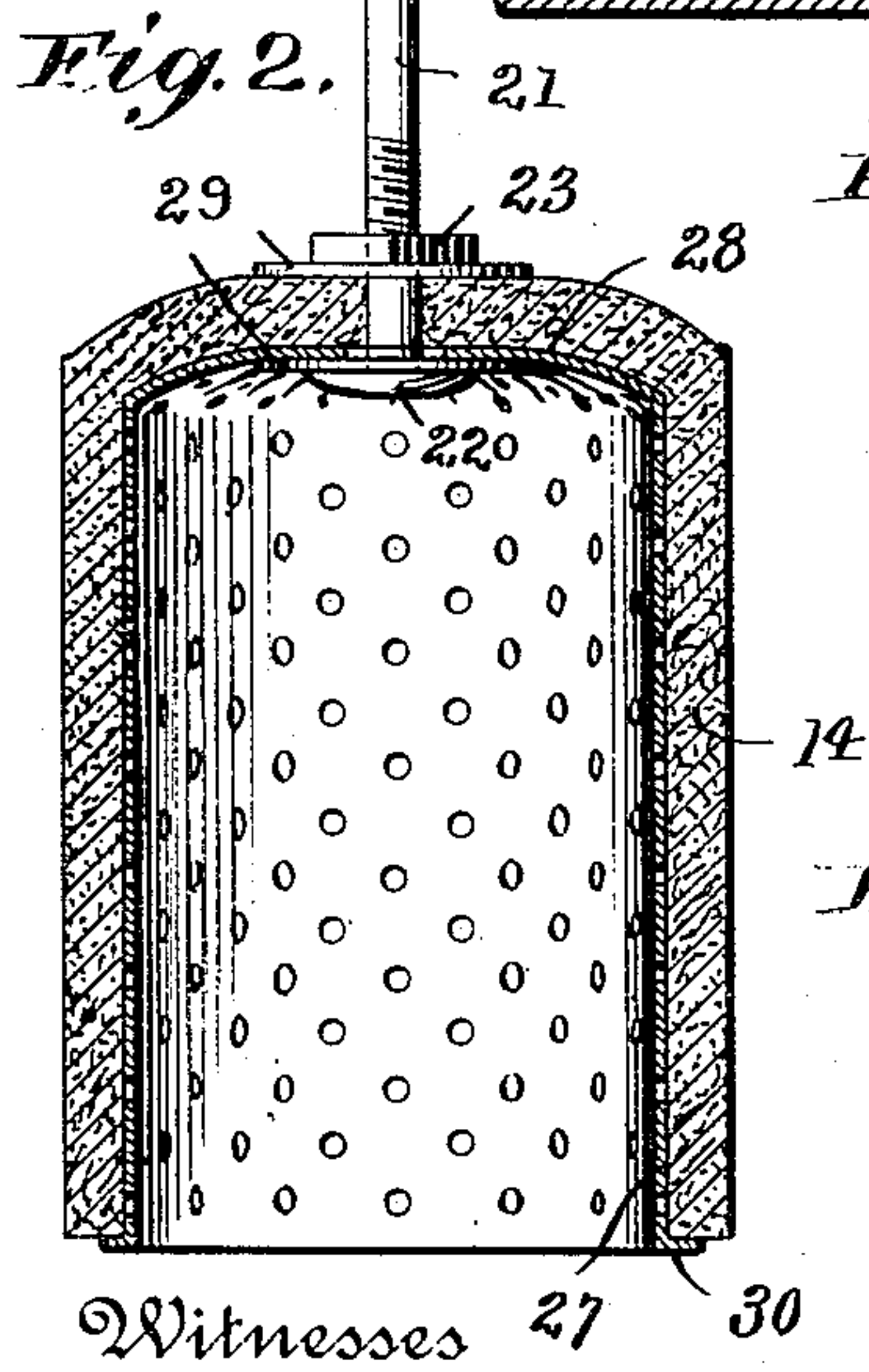
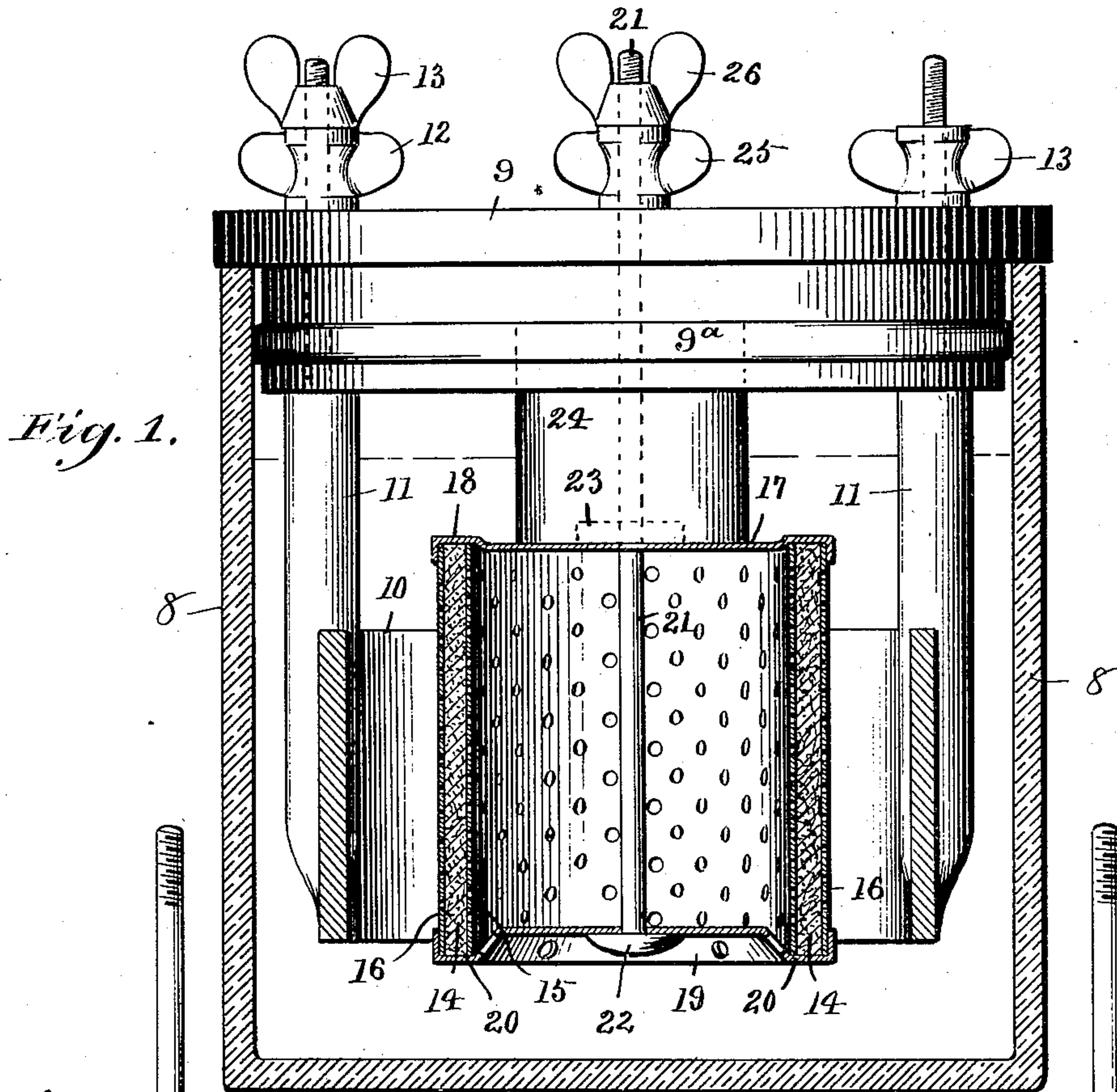


No. 886,652.

PATENTED MAY 5, 1908.

C. B. SCHOENMEHL.
ELECTRIC BATTERY.

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CHARLES B. SCHOENMEHL, OF WATERBURY, CONNECTICUT.

ELECTRIC BATTERY.

No. 886,652.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed March 29, 1906. Serial No. 308,725.

To all whom it may concern:

Be it known that I, CHARLES B. SCHOENMEHL, a citizen of the United States, and resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Electric Batteries, of which the following is a specification.

This invention relates to electric batteries and more especially to primary batteries of the zinc and copper oxid type.

The essential features of my invention are to produce a battery wherein the initial resistance will be materially reduced, and a more uniform voltage throughout the working of the battery obtained.

I elect to obtain the above results in part by the combined use of oxid of copper compressed into a thin mass of either cylindrical or plain forms and a suitable perforated receptacle for holding or maintaining the same in place, during shipment and use.

I am aware that compressed forms of copper oxid have heretofore been extensively used and also that perforated baskets have been employed for holding copper scale and I do not herein make claim to either of these features as heretofore employed, but after considerable experience in the manufacture and handling of both such features and thus learning the weakness and objections thereto, have devised the new forms, combinations and arrangement of element as herein shown, described and recited in the claims.

Upon the accompanying drawings forming a part of this specification similar characters of reference denote like or corresponding parts throughout the several figures of the drawing, and of which,

Figure 1 shows a central vertical sectional view through an improved form of battery embodying my invention. Fig. 2 is a detached central vertical sectional view through a slightly different form of negative element from that shown in Fig. 1, and embodying my invention. Fig. 3, is a bottom plan view of the construction shown in Fig. 2. Fig. 4, is a further vertical sectional view of a modified form of negative element including my improvement. Fig. 5, is a disconnected fragmentary view of a preferred form of the perforated sheet metal used for the forms shown in Figs. 2 and 4.

The unprotected compressed oxid of copper elements, both plates and cylinders as heretofore manufactured, have not only been

very brittle and liable to break but have been bulky in proportion to their weight by reason of not being pressed hard enough. Also as a result of the excessive thickness of such elements an uneven voltage was produced and further by reason of their softness, they were more liable to disintegrate and fall away when in use. By pressing the same quantity of material into a thinner compass and inclosing the same with perforated material in a way to retain the material intact even though it should become broken or affected, I overcome the objections noted, and produce a far more commercial element than has heretofore been produced.

Referring in detail to the characters of reference marked upon the drawings 8 indicates a battery jar of any usual or preferred design, 9 a porcelain cover therefor adapted to rest upon the jar and provided with a rubber gasket 9^a to engage the inner wall, to produce a liquid proof inclosure as is desired for automobiles, reapers and other uses.

10 indicates a cylindrical zinc having a pair of suspending poles 11 connected to the cover and provided with jam and binding nuts 12 and 13 by means of which said zinc is supported and for the connection of the field wire respectively. This zinc like the jar and cover may be of any of the usual constructions, but preferably of the design shown of my own manufacture.

The improved negative element comprises first, a very hardly compressed thin bulk of copper oxid 14, preferably in cylindrical form, and which obviously is very brittle and delicate as a result of its being formed in comparatively a dry state and further by reason of having been subjected to a prolonged baking process. These cylinders are provided with a perforated covering which serves as a protector therefor and likewise in part for the attachment of the supporting rod and for retaining the element central within the zinc. This perforated protection can be used either upon the inside, the outside, or both sides as desired, according to the requirements of the particular class of work upon which the battery is to be used.

In Fig. 1, I have shown a plain compressed copper oxid tubular cylinder, entirely inclosed by a casing formed of a plain inner wall 15 of perforated conducting material and a similar outer wall 16 both of which set up snugly against the side of said cylinder. An upper cap 17 having an annular pocket

18 therein to receive the top end of the copper cylinder and casing is placed over one end and a bottom cap 19 having an annular recess 20 therein to receive the opposite end of the cylinder is attached to the other end. A rod 21 with a large head 22 upon its lower end serves to hold the parts together by being passed up through a central hole of the two end caps and by having a nut 23 screwed down upon the top cap in a way to draw the two caps together against the ends of the cylinder. The upper end of this rod is extended through a porcelain sleeve 24 and through the cover, and is provided with jam and thumb nuts 25 and 26 respectively. This rod serves the purposes of securing the several parts of the element together besides supporting the same and further to form its connection with the binding post or thumb nuts for wire connections. In Figs. 2, 3 and 4, I show the same style of compressed copper oxid cylinders, both of which contain an inclosed upper end, and have a hole therein for the attachment of a suspending rod which may be connected to the cover the same as the element shown in Fig. 1. These cylinders do not require the end caps shown in Fig. 1, but are covered on one or both sides with a perforated sheet metal wall 27, the upper edge 28 of which is preferably serrated as shown in Fig. 5, and which edge in practice is rolled in and the ends deflected toward the hole and engaged beneath the washer 29 upon the rod. The lower end of these strips are turned over to engage the under edge of the element as shown at 30 in Figs. 2, 3 and 4, thus forming either a complete perforated inclosure or only a covering on the one side, which obviously would materially stiffen and protect the element. It will be observed that the plate 27, in Figs. 2 and 4, forms a recessed or pocketed bolt-engaging member to support the oxid cylinder, just as the recessed or pocketed lower plate 19 of Fig. 1, performs a like function. It will thus be seen that with a given amount of copper thus compressed and contained within a smaller compass and located at a more uniform distance from the coacting

zinc element a more uniform action is obtained throughout the consumption of the materials. A battery therefore of this construction will yield very nearly as high a voltage toward the last of its use as it produced in the beginning, which is obviously highly important.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. A negative element for batteries comprising a thin pressed cylinder of metal oxid, and a perforated and pocketed sheet of metal extending therein and having its edges turned over to engage the cylinder and to support the same.

2. A negative element for batteries comprising a thin pressed cylinder of metal oxid, a perforated sheet of metal upon the outer side of the cylinder, and a bolt-supported perforated flanged sheet of metal upon the under side of said cylinder.

3. A negative element for batteries, comprising a thin pressed cylinder of metal oxid, a perforated sheet of metal upon one side thereof, upper and lower detachable caps mounted respectively upon the top and bottom thereof, and a supporting bolt connecting said caps, said lower cap being centrally depressed, thereby forming an annular outer portion to support the cylinder and an inner recessed portion for the head of said bolt.

4. A negative element for batteries, comprising a thin pressed cylinder of metal oxid, upper and lower detachable caps mounted respectively upon the top and bottom thereof, and a supporting bolt connecting said caps, said lower cap being centrally depressed, thereby forming an annular outer portion to support the cylinder and an inner recessed portion for the head of said bolt.

Signed at Bridgeport, in the county of Fairfield, and State of Connecticut this 28th day of March, A. D., 1906.

CHARLES B. SCHOENMEHL.

Witnesses:

C. M. NEWMAN,
RUTH RAYMOND.