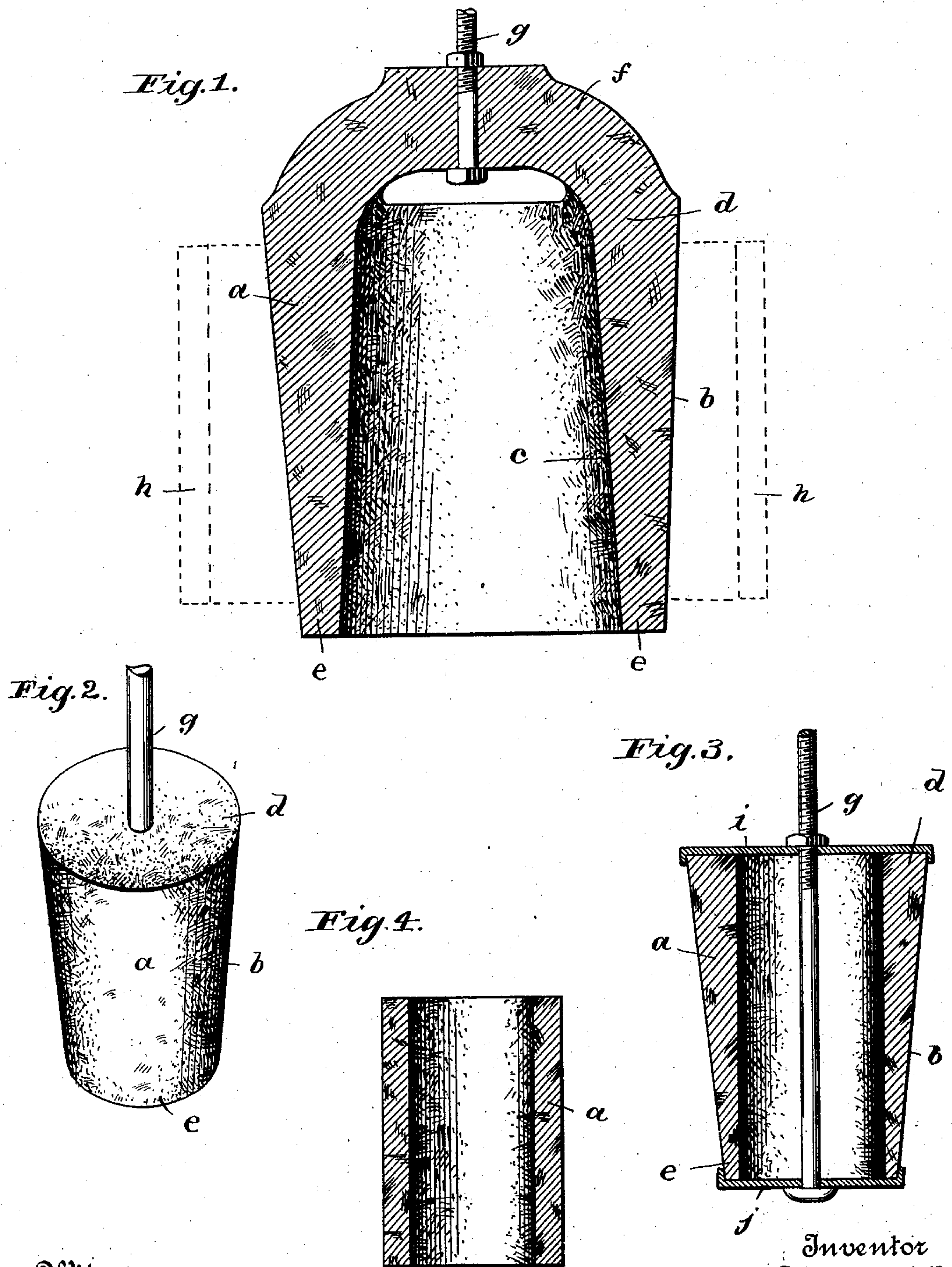


No. 737,286.

PATENTED AUG. 25, 1903.

C. B. SCHOENMEHL.
GALVANIC BATTERY.
APPLICATION FILED MAY 1, 1903.

NO MODEL.



Witnesses
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CHARLES B. SCHOENMEHL, OF WATERBURY, CONNECTICUT.

GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 737,286, dated August 25, 1903.

Application filed May 1, 1903. Serial No. 155,104. (No model.)

To all whom it may concern:

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

This invention relates to depolarizing elements for galvanic batteries, and more especially to one made of compressed oxid of copper in special form or shape, the same to be used in the usual way in connection with a suitable zinc and solution.

It is the object of the invention to provide a compressed annular oxid-of-copper depolarizer element that can be conveniently suspended from the cover or bridge of a jar and without the necessity of a receptacle for holding the same; further, to make it of special shape, whereby the bulk of material is thrown to the upper portion of the battery, where the solution is the strongest, thus insuring the consumption of the entire element and avoiding the usual loss of material in the lower portion.

With the above objects in view my invention resides and consists in the novel construction and formation of an element, as shown in the accompanying sheet of drawings, forming a part of this specification, upon which similar letters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows a central vertical cross-section of a depolarizer element formed in accordance with my invention. Fig. 2 is a perspective view of a slightly-modified form of construction, the same comprising a solid conical body with a central suspending-rod molded therein. Fig. 3 is a further-modified form of element comprising an annular tubular element having a tapering outer wall and a central binding-rod with plates or bridges at top and bottom for supporting the element. Fig. 4 is a plain cylindrical oxid-of-copper element compressed and baked as in the other forms and adapted for use in the suspending device shown in Fig. 3.

As shown, my element may be solid or tubular in construction, and likewise represent a plain annular body or a frustum of a cone,

if desired, the element being larger through its top edge than its bottom. Such an element is especially adapted for use in connection with a circular or cylindrical zinc, as is common in most forms of depolarizer basket-batteries. It may therefore consist of a solid cylindrical body, as shown in Fig. 2, or in an annular cylindrical body, as shown in Figs. 1, 3, and 4. These elements may contain a smooth external and internal surface or may be corrugated, if desired, and likewise suspended in any suitable way, preferably, however, by a single rod, which may be attached to or detached from the cover of the jar by simply operating a nut or two, as is common in various forms of battery elements.

The majority of oxid-of-copper batteries now in use employ a receptacle to hold the copper scale. After a time these elements become inert and have to be recharged. This recharging requires the removal of the consumed copper, the cleaning of the receptacle, and the refilling with new copper. This means considerable unpleasant work, consuming valuable time, and is avoided with my present improvement.

I am the inventor of several forms of annular and cylindrical receptacles for holding a depolarizer wherein the bulk of material is thrown to the top, as is also the case with this invention; but my present invention differs from those in that I do not employ a receptacle for holding the material, but compress and bake it to form and provide integral means of attachment.

In the production of an element of this sort I dispense with the employment of a basket, as above, and the annoyance and inconvenience of handling the same when recharging. The material itself is molded into the shape desired and hardened by baking or other suitable process, which serves to retain the oxid of copper intact until consumed by the action of the battery.

Referring to the letters of reference marked upon the drawings, *a* represents the compressed oxid-of-copper element; *b*, the tapering outer wall; *c*, the tapering inner wall; *d*, the enlarged upper portion, and *e* the lower contracted end.

f represents a bridge, as shown in Fig. 1, formed integral with the element, and *g* a rod

attached thereto, by means of which the element is suspended.

These elements are used in the ordinary style of constant-current batteries, wherein an annular zinc encircles the element, as shown by *h* in dotted lines in Fig. 1. This zinc may also be suspended from the cover in the usual or any preferred way.

The rods *g* may be formed or molded integral with the element, as shown in Fig. 2, or used in connection with a pair of bridges or disks *i* and *j*, as shown in Fig. 3, which disks would preferably contain inwardly-deflected flanges to engage the element, as shown. The rod passes up centrally through these disks and may be attached with a nut, as in the other forms. This same form of suspending device could be used in connection with the plain cylindrical element shown in Fig. 4. The walls of the cylinder shown in this figure are of uniform thickness, not being tapered as in the other figures, and is designed to disclose a plain compressed and hardened copper-oxid cylinder irrespective of any particular shape adapted for the same purpose.

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

1. A battery element comprising an annular solidified oxid-of-copper depolarizer.

2. A battery element comprising a tubular solidified oxid-of-copper depolarizer.

3. A battery element comprising an annular solidified oxid-of-copper depolarizer, disks to engage the upper and lower edges of the same and a suspension-bolt passing there-through.

4. A battery element comprising annular solidified oxid-of-copper depolarizer and a suspension-rod attached thereto.

5. A battery element comprising a solidified depolarizer having an annular exterior side wall at an angle other than a right angle to a vertical line passing through the depolarizer.

6. A battery element comprising a solidified depolarizer having both an internal and external annular side wall at an angle other than a right angle to a vertical line passing through the depolarizer.

7. A battery element comprising a solidified depolarizer having an annular exterior side wall at an angle other than a right angle to a vertical line passing through said element and means for supporting said elements from the cover of a jar.

8. A negative element for a battery comprising a solidified depolarizer having exterior side walls set at an angle other than a right angle to a vertical line passing there-through and a central opening through the element.

9. A negative element for a battery, the same comprising a solidified depolarizer having an exterior side wall set at an angle other than a right angle to a vertical line passing therethrough and a conical opening through the center of the element.

10. A negative element for a battery comprising an annular solidified depolarizer with an opening therethrough having a bridge across its end and a suspension-rod connected to said bridge.

11. A negative element for a battery comprising a solidified annular cylindrical depolarizer, larger through its top edge than its bottom, and an integral bridge across the upper end of said cylinder.

12. A negative element for a battery comprising an annular solidified oxid-of-copper depolarizer larger through its top edge than its bottom.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 24th day of April, A. D. 1903.

CHARLES B. SCHOENMEHL.

Witnesses:

C. M. NEWMAN,

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