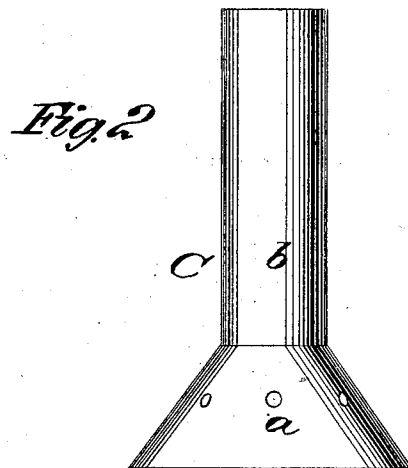
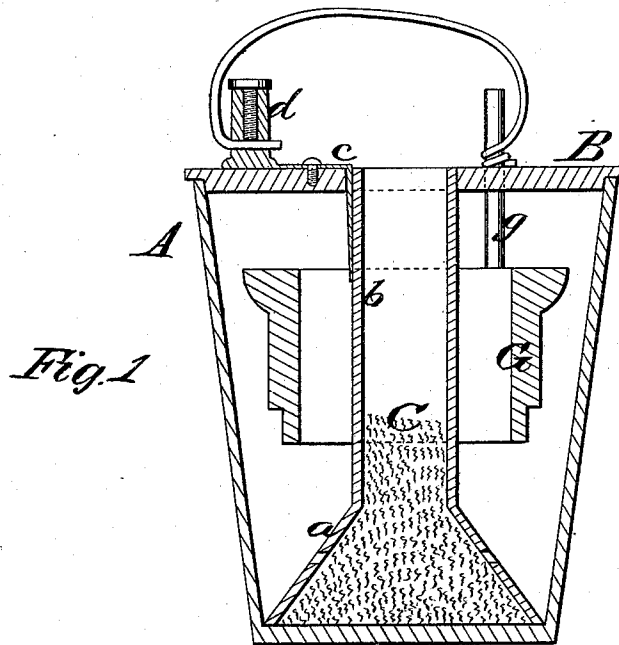


J. E. WATSON.
GALVANIC-BATTERY.

No. 178,215.

Patented May 30, 1876.



WITNESSES

Mary S. Water.
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UNITED STATES PATENT OFFICE.

JOHN EDWARD WATSON, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN GALVANIC BATTERIES.

Specification forming part of Letters Patent No. **178,215**, dated May 30, 1876; application filed January 23, 1875.

To all whom it may concern:

Be it known that I, JOHN E. WATSON, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and valuable Improvement in Voltaic Batteries; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical central section of my device, and Fig. 2 is a detail view.

This invention has relation to voltaic batteries; and my object is to make a battery which is not subject to local action, and which will not require frequent attention.

The nature of my invention consists in a funnel-shaped chamber, which is made of lead, and designed for containing the sulphate of copper, and which is surrounded by a zinc cylinder suspended from the cover of the battery-jar, as will be better understood from the following description.

In the annexed drawing, A designates a glass jar of any suitable size and shape, which is provided with a wooden cover, B. C designates a funnel, consisting of the conical portion *a*, thickly perforated, and the cylindrical neck or tube *b*. This funnel C is made of lead, and the external surface of its tube *b* is coated with shellac to prevent the zinc or lead salt adhering to it. The bottom of the cone *a* fits snugly upon the bottom of the jar A, and the upper end of the cylindrical tube *b* passes through the cover B, and may be provided with a stopple. The funnel is attached to the cover B by means of a copper strip, *c*, which forms an electrical communication with a binding-post, *d*. G designates a cylinder of zinc, which surrounds the upper portion of the funnel C, and which is suspended from the cover B by means of rods *g*, to one of

which the zinc-pole wire of the battery is suitably secured. The battery is prepared for action by charging the funnel C with sulphate of copper, and nearly filling the jar A with a solution of sulphate of zinc.

To prepare the battery for action, place the funnel C in the jar, and fill through the tube of this funnel with sulphate of copper. Then make a solution of sulphate of zinc—say one-quarter of a pound, and two ounces of the acetate of lead, in sufficient water to cover the zinc. This solution is introduced into the jar, and instant action takes place.

The function of the acetate of lead is important in keeping the metallic surface of the lead funnel in condition to receive the deposit of metallic copper, with which it will, therefore, become coated, and will serve as the copper pole of the battery.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a voltaic battery, the inverted lead funnel C, perforated through the conical portion, as shown, in combination with the copper strip *c*, and arranged in connection with the jar A, zinc pole, and cover B, substantially as specified.

2. A battery solution formed of zinc sulphate, lead acetate, and water, adapted for use in connection with sulphate of copper, metallic lead, and metallic zinc, substantially as specified.

3. A battery consisting of the jar A, lead funnel C, zinc G, sulphate of copper, and solution of sulphate of zinc and acetate of lead, combined and operating substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN EDWARD WATSON.

Witnesses:

ALBERT HAAS,
P. T. HENSHAW.