

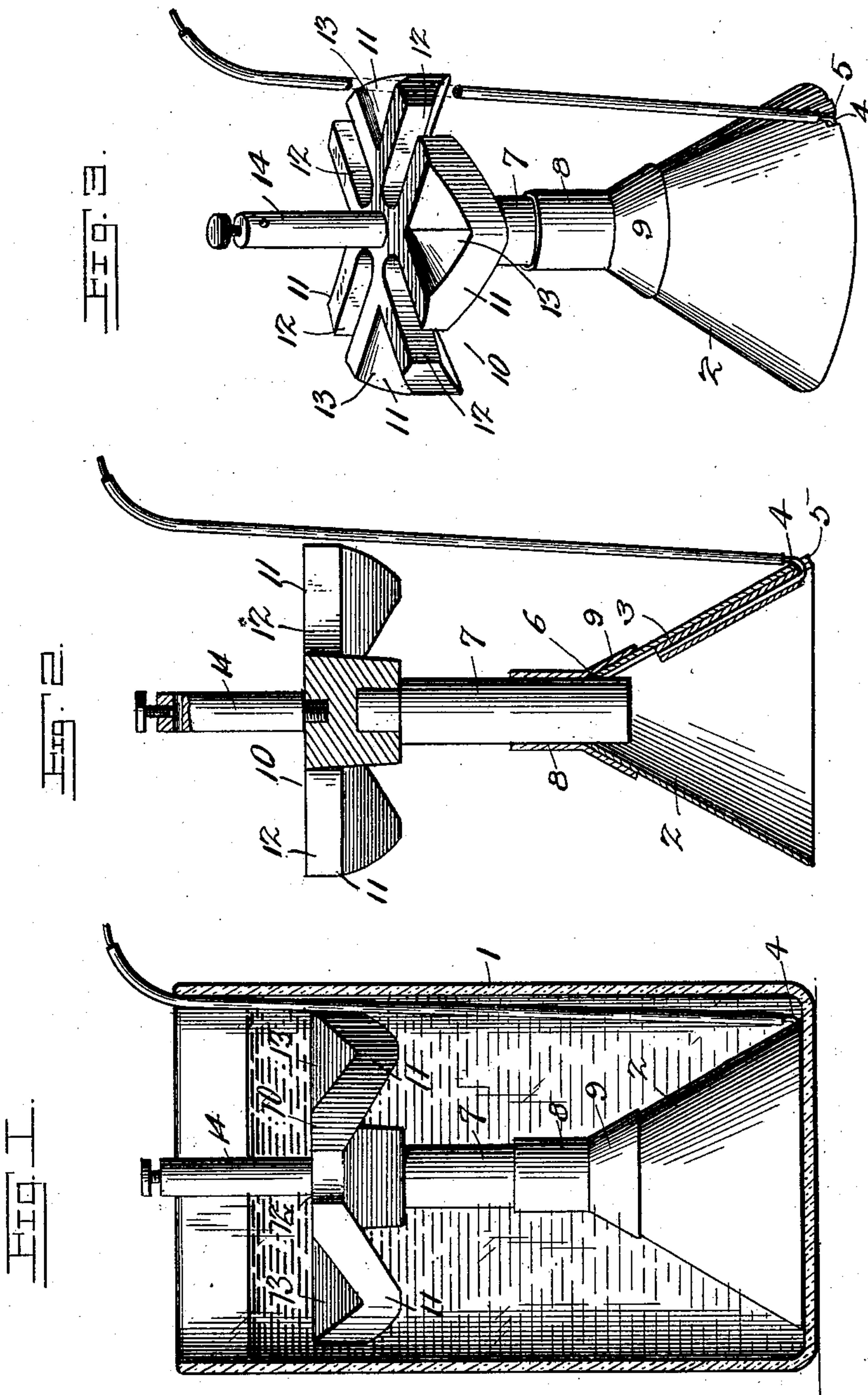
No. 689,776.

Patented Dec. 24, 1901.

T. J. BAIN.
ELECTRIC BATTERY.

(Application filed July 8, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS J. BAIN, OF CAIRO, ILLINOIS.

ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 689,776, dated December 24, 1901.

Application filed July 8, 1901. Serial No. 67,509. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. BAIN, a citizen of the United States, residing at Cairo, in the county of Alexander and State of Illinois, have invented a new and useful Electric Battery, of which the following is a specification.

This invention relates to electric batteries; and the object of the present improvement is to so construct the parts of the cell that the liquid contents will be prevented from running or boiling over the upper edge of the jar by locating the elements wholly within the confines of the jar and avoid suspending them from the upper edge of the latter, and also to have the elements easily separable, so that they can be cleaned and readily placed in and withdrawn from the jar.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

Figure 1 is a sectional view of a jar, showing the improved battery elements arranged therein and illustrated in side elevation. Fig. 2 is a transverse sectional view of the battery elements. Fig. 3 is a perspective view of the battery elements.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a jar of the usual or any preferred form. The elements are placed within the said jar and comprise a lower copper cone 2, which forms a base-rest on the bottom of the jar, the said cone having one of the joint members extended to form an inclosing roll or sleeve 3 on the inside to provide means of elongated securement of a wire or electrode 4, of copper, which is directed upwardly through the jar and out over the upper edge of the latter for jointure with an electrical connection in the usual manner to arrange the cells in series or in parallel or, in the use of a single cell, for the attachment of a wire for the utilization of one pole of the battery for practical purposes. The extended attachment of the wire 4, as set forth, insures a more direct and efficient translation of the positive effect of the cone, and the said wire passes out through a notch 5 at the lower edge of the said cone,

and is thus held in place. The upper end 6 of the cone is truncated and open, and therein is removably fitted the lower extremity of a vertical stem 7, of wood, hard rubber, or other suitable non-conducting material, hard rubber being preferable, because it will not become saturated with the liquid in the jar. Firmly secured to this stem is a copper sleeve 8, having a flared hood 9 at the lower end thereof, which removably slips over the upper end of the cone and serves as a connecting-stop in disposing the parts in assembled relation. The sleeve 8 extends only partially upwardly over the stem, and to the upper end of the latter a zinc element 10 is secured and formed with a series of radiating horizontally-disposed wings 11 with radial interspaces 12 between them. The wings are centrally dipped or depressed, so as to maintain operative relation to the fluid in the jar for a greater length of time in the event that said liquid becomes low, and by providing the interspaces between the wings the operation of the liquid on the zinc will be more effective, as a greater surface in the aggregate will be exposed to the liquid than if the said zinc element was solid and simply presented the upper and lower faces and peripheral edge. The upper surfaces of the wings are formed with downwardly and outwardly inclined recesses 13, which will cause the liquid to more readily run off or free itself from the zinc when lifting the latter from the said liquid in the operation of separating the parts.

The liquid used in the present cell will be preferably that used in the ordinary gravity-cell, though this is not essential, as it is obvious that negative and positive elements of the same form and arrangement as those particularly described as being composed of copper and zinc could be made of other electrically cooperating materials. Rising from the center of the element 10 is a binding-post 14, for attachment of a connecting-wire or the like, for obvious reasons. It will be seen that the elements of the improved battery are free from contact with the inner surface of the jar, and in some instances the wire or electrode 4 could be bent back in and lead out through one of the interspaces 12 without contacting with the zinc, and by this means there is nothing to lead the liquid upwardly over the

edge of the jar, and a cleanly cell is thereby produced. Furthermore, the parts of the battery can be easily separated for cleaning and are readily assembled in the jar, the cone being first positioned and the zinc and stem afterward applied thereover.

Having thus described the invention, what is claimed as new is—

1. A battery comprising a jar for containing an electrolyte, a lower conical element, and an upper element having a depending stem of non-conducting material provided with a lower hood of conducting material to removably fit over the upper extremity of the conical element.

2. A battery comprising a jar for containing an electrolyte, a lower conical element, and an upper element having a depending non-conducting stem provided with a lower connecting device to removably fit over the upper extremity of said conical element.

3. A battery comprising a jar for containing an electrolyte, a lower jointed conical copper element having a portion of the joint extended to form an elongated inclosing roll, a wire having its lower extremity held in said

roll, and an upper element provided with a non-conducting device removably engaging the upper portion of said copper element.

4. A battery comprising a jar for containing an electrolyte, a lower element of hollow form having an inner elongated tubular rolled portion, a conductor having its lower extremity held in said rolled portion, and an upper element removably applied to said lower element by an interposed non-conducting device.

5. A battery comprising a jar for containing an electrolyte, a lower copper element, and an upper zinc element removably attached to said lower element by an interposed non-conducting device, the said zinc element having a series of radiating wings separated by interspaces and provided with depending portions and upper outwardly and downwardly inclined recesses.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS J. BAIN.

Witnesses:

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