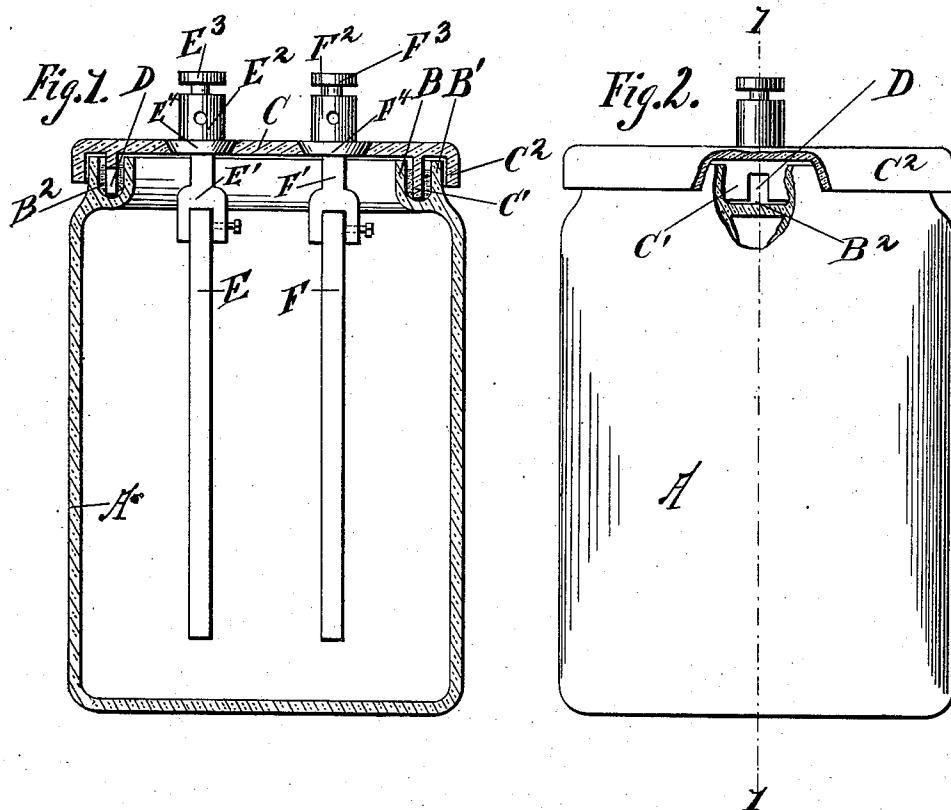


(No Model.)

F. B. BADT.
BATTERY.

No. 576,936.

Patented Feb. 9, 1897.



Witnesses:

Walter J. Gunthorp
Arthur P. Quinke

Inventor.

Francis B. Badt

By Francis M. Parker,
Atty.

UNITED STATES PATENT OFFICE.

FRANCIS B. BADT, OF CHICAGO, ILLINOIS.

BATTERY.

SPECIFICATION forming part of Letters Patent No. 576,936, dated February 9, 1897.

Application filed September 7, 1894. Serial No. 522,325. (No model.)

To all whom it may concern

Be it known that I, FRANCIS B. BADT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Batteries, of which the following is a specification.

My invention relates to primary batteries or galvanic cells, and has for its object to provide a new and useful improvement in such cells, having particular reference to the matter of avoiding the evils commonly associated with the use of ordinary cells. It will be found that in most of such cells there is trouble from the evaporation of the solution, from creeping of salt over the edges, and from surface leakage of electricity to the ground. I desire among other things to avoid these difficulties.

In the drawings I have illustrated my invention in one form, though of course it will be readily understood that it could be considerably varied and yet contain the substance of my invention.

Figure 1 is a cross-section through my device on the line 1 1 of Fig. 2. Fig. 2 is a side view with parts broken away.

Like parts are indicated by the same letters in both views.

A is the body of the battery-jar, which of course could be of any desired material. It is formed with two upper edges B and B', which have between them a passage-way B². Of course these parts might be, and perhaps preferably would be, circular in plan, which would result in forming between them the passage B² in the shape of an annulus. The cover C is in like manner provided with two downwardly-depending flanges C' and C², which are adapted the flange C² to lie outside the annulus B', while the flange C' lies in the annular passage B². If, however, the upper edges of the jar were other than annular or circular in outline, the flanges on the cover would of course correspond to such other figure.

D is an opening at one point in the flange C', and it is made nearly as deep as the passage B².

E and F are the elements, E' and F' their supports, E² and F² their binding-posts, and E³ and F³ their thumb-screws, all of which

parts are here shown in a practically diagrammatic form without any reference to any special or particular design. The binding-posts are provided or associated with bases E⁴ and F⁴, which are preferably cemented or permanently secured to the cover C.

The use and operation of my invention are as follows:

I have shown an ordinary glass jar, such as is usually employed for galvanic cells, and it may be of any desired shape or material whatsoever within the ordinary limits understood by electricians. At its upper end is the annular passage or trough. This trough is filled with an insulating liquid, preferably with a light oil which does not easily evaporate and which will allow condensed moisture in small particles or particles of the solution of the cell to sink to the bottom of the trough.

The cover of the cell is made of glass or any other insulating material. The inner rim or flange of the rim rests with its lower edge in the bottom of the trough, while the outer rim is employed to give additional dust-proof protection. The oil in the trough prevents the evaporation of the solution and makes the cell dust and air proof. It at the same time insures absolute insulation of the cover, and hence of the electrodes carried by the cover, against leakage to the earth.

The outside binding-posts, as above explained, are preferably secured to the cover, and the electrodes, preferably of carbon and zinc, are secured in any desired manner.

The hole or slot in the inner rim or flange of the cover is designed for use in cases where the solution, preferably of sal-ammoniac dissolved in water, is of such nature as that it develops gas, which should be permitted to escape rather than to accumulate under a pressure. At a very moderate pressure the light oil would be displaced sufficiently at such hole or slot to permit of an escape of the gas, and such escape would take place without materially affecting or disturbing the insulating liquid in the trough or annulus.

I claim—

1. In a battery-cell, the combination with a jar, of a channel surrounding the upper edge of said jar, a cover for said jar provided with a rim adapted to fit in said channel, an insulating liquid in said channel, and an open-

ing in said rim, the distance from the surface of the insulating liquid to the opening in the rim being insufficient to prevent the escape of gas under the internal pressure set up by the action of the elements of a Leclanché cell, substantially as described.

2. In a battery-cell, the combination with a jar, of a circular channel at the upper edge thereof, a cover for said jar adapted to support the electrodes, a circular projection upon said cover adapted to rest in said channel, a liquid insulating material in said channel, an opening in said projection, the distance from the surface of the insulating liquid to the opening in the rim being insufficient to prevent the escape of gas under the internal pressure set up by the action of the elements of a Leclanché cell, substantially as described.

3. In a battery, the combination with the glass jar A, of the channel B² between the edges B B', the cover C provided with the downwardly-depending flanges C' C², the said flange C' resting in said channel, an insulating liquid in said channel, the opening D in said flange C', the distance from the surface of the insulating liquid to the opening in the flange C' being insufficient to prevent the escape of gas under the internal pressure set up by the action of the elements of a Leclanché cell, and the elements E F supported by said cover C, substantially as and for the purpose specified.

FRANCIS B. BADT.

Witnesses:

WALTER J. GUNTHERP,
DONALD M. CARTER.