

No. 691,611.

Patented Jan. 21, 1902.

A. DE DION & G. BOUTON.
ELECTRIC BATTERY.

(Application filed Feb. 6, 1901.)

(No Model.)

Fig. 1.

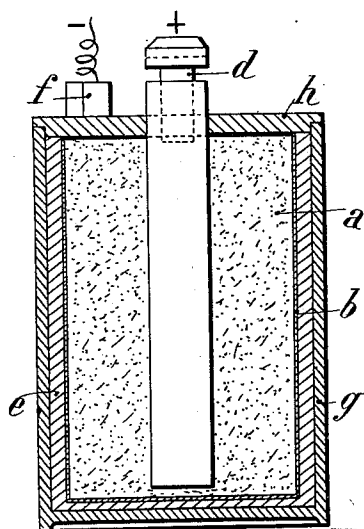
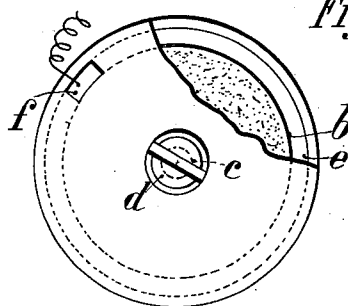


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALBERT DE DION AND GEORGES BOUTON, OF PUTEAUX, FRANCE.

ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 691,611, dated January 21, 1902.

Application filed February 6, 1901. Serial No. 46,258. (No model.)

To all whom it may concern:

Be it known that we, ALBERT DE DION and GEORGES BOUTON, engineers, citizens of the French Republic, residing at Puteaux, department of Seine, France, (and having both post-office addresses 24 Quai National, in the said city of Puteaux,) have invented certain new and useful Improvements in or Appertaining to Electric Batteries, of which the following is a specification.

This invention relates to certain new and useful improvements in electric batteries; and to this end it consists of the novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In the drawings accompanying this application, Figure 1 is a sectional elevation, and Fig. 2 a top plan view with a part of the cover broken away, of a battery constructed according to our invention.

Referring to the drawings by reference-letters, *a* denotes a block of compressed material, such as oxid of copper, prepared in the manner as hereinafter described. The said block *a* is inclosed or wrapped up in a thin piece of copper gauze *b* and has embedded in the middle thereof a cylindrical or rectangular shaped strip of copper *c*, which forms a positive electrode. The strip of copper *c* terminates at its top in a terminal *d*. The block *a*, with the copper strip *c* and wire-gauze *b*, is inserted into a vessel *e*, formed of zinc, which constitutes the negative electrode, having a terminal *f*. The block *a*, strip *c*, and gauze *b* when mounted in the vessel *e* are adapted to fit snugly therein—that is to say, the vessel is of a shape similar to the block, gauze, and strip and of such size that a snug fit will be obtained. The wire-gauze *b* is only intended to facilitate the insertion of the compressed block of material within the vessel *e* and also to prevent the block from being broken. The battery when constructed in such a manner may be placed in a box *g*, of insulating material, and should be hermetically closed by a cover *h*, having apertures for the passage of the terminals *d* and *f*.

The compressed material wrapped up in copper gauze is placed in the vessel *e*, containing a solution of caustic potash or soda,

which forms the electrolyte. The two poles of the battery are formed the one by the compressed pure oxid of copper and the other by the zinc of the said vessel.

The pure oxid of copper, which constitutes the compressed material and serves as depolarizing, is obtained by precipitation—*i. e.*, by treating a soluble salt of copper, such as the sulfate, by an alkali, such as soda or potash. In the manufacture of this compressed material there is therefore no foreign substance used—such as pitch, clay, or other body—which would decrease the efficiency of the battery.

The oxid of copper obtained by precipitation becomes easily coherent when subjected to a simple pressure, which is not the case with copper scales unless foreign substances, which impair the good working of the battery, are used.

Such a battery may, if desired, be hermetically closed, for no gas is evolved from it. Moreover, it presents the important advantage that it can be regenerated by the electric current. When the battery is worn out—that is, when the oxid of copper is reduced and potassium zincate is formed—it is sufficient to cause an electric current to flow through this compound to decompose it, the oxygen combining with the copper and the potash being set free. The oxid of copper being formed again, the battery is once more ready for work.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is—

1. In a storage battery, a positive electrode consisting of a metallic vessel adapted to contain an exciting fluid, a negative electrode consisting of a metallic strip embedded in a compressed block of oxid of copper, and a piece of copper gauze inclosing said compressed block, said block and gauze adapted to conform to the inner face of said vessel and fit snugly within the same.

2. In a storage battery, a positive electrode consisting of a metallic vessel and adapted to contain an exciting fluid, a positive electrode consisting of a metallic strip embedded in a compressed block of oxid of copper, a piece of copper gauze inclosing said com-

pressed block, said block and gauze adapted to conform to the inner face of said vessel and fit snugly within the same, and means for hermetically sealing said vessel.

- 5 3. In a storage battery, a depolarizing-body consisting of a strip of copper embedded in a compressed block of pure oxid of copper and covered by a piece of copper gauze.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses. 10

ALBERT DE DION.
GEORGES BOUTON.

Witnesses:

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