

G. A. LUTZ.
 PRIMARY ELECTRIC BATTERY.
 APPLICATION FILED MAY 29, 1909.

1,000,421.

Patented Aug. 15, 1911.

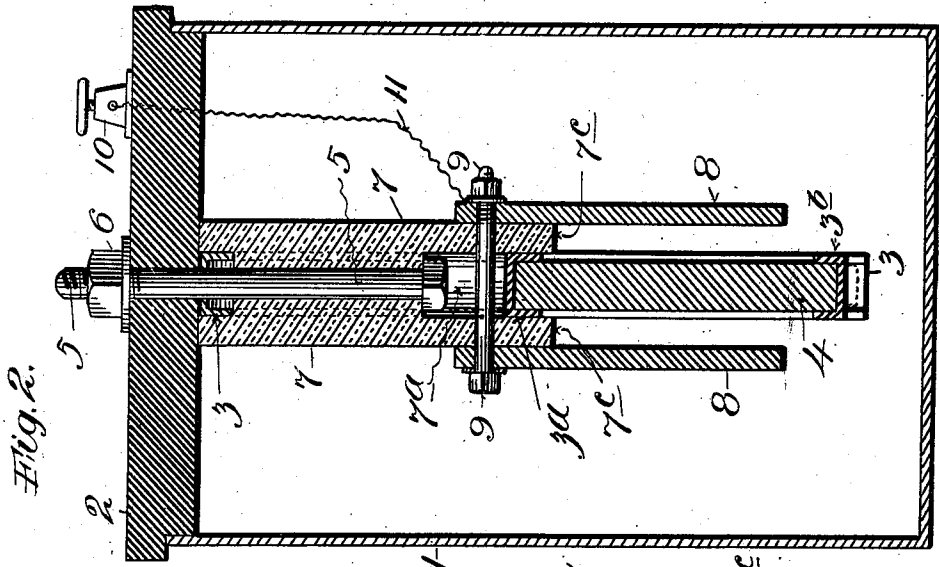


Fig. 2.

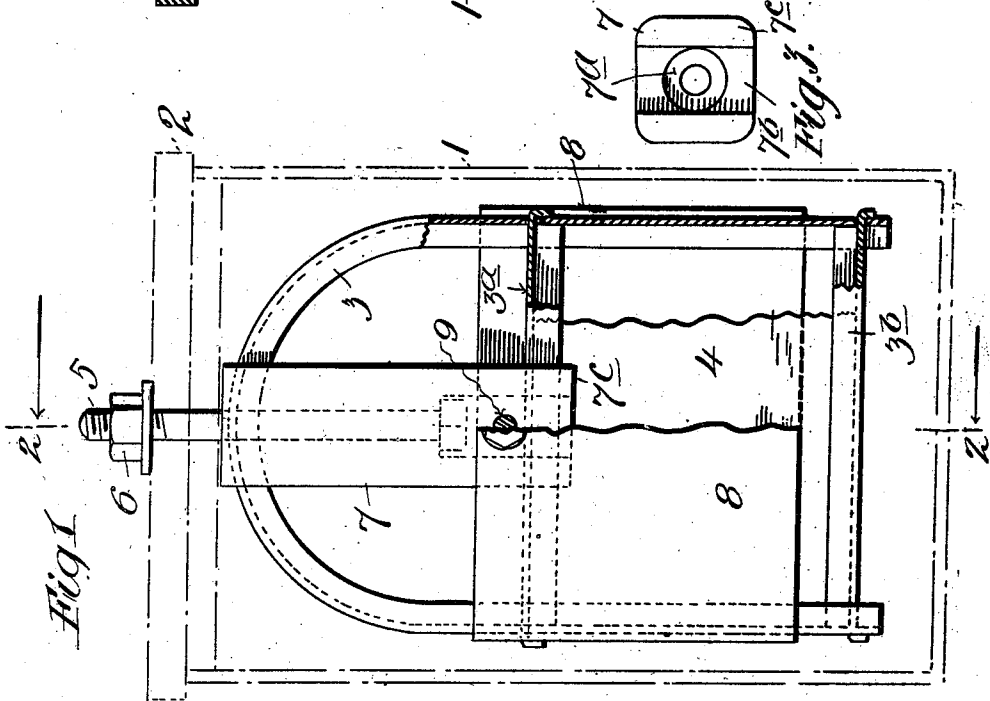


Fig. 1.

Witnesses:
 Wm. Benjamin
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Inventor
 George A. Lutz.
 By his Attorney J. F. Bourn

UNITED STATES PATENT OFFICE.

GEORGE A. LUTZ, OF PLAINFIELD, NEW JERSEY.

PRIMARY ELECTRIC BATTERY.

1,000,421.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed May 29, 1909. Serial No. 499,154.

To all whom it may concern:

Be it known that I, GEORGE A. LUTZ, a citizen of the United States, and resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Primary Electric Batteries, of which the following is a specification.

My invention relates to the class of primary electric batteries wherein the depolarizer comprises a plate of oxid, such as cupric oxid, and a positive electrode, such as zinc, and has particular reference to improvements in batteries shown in Letters Patent No. 919,900, granted to me April 20, 1909.

The object of the present invention is to insulate the positive and negative electrodes and so support and hold them with respect to each other as to eliminate the danger of said electrodes coming in contact with each other.

My invention comprises the novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein,

Figure 1 is a partly broken side elevation of battery elements arranged according to my invention; Fig. 2 is a cross section, substantially on the line 2, 2, in Fig. 1, and Fig. 3 is an underside view of the electrode supporting insulator.

The jar or receptacle 1 and its insulating cover 2, from which the electrodes are hung, may be arranged in usual or well known manner. The frame 3, shown of channeled metal, supports the plate 4 of depolarizing material, such as compressed cupric oxid, in any suitable manner, or as shown in my said Patent No. 919,900, the rod 5, passing through a suitable hole in frame 4 and through the cover 2, being detachably supported on said cover, as by nut 6 on the threaded end of the rod. The insulating block 7 is provided with an opening through which rod 5 passes, and said insulating block has a recess 7^a receiving the head of rod 5. Said block is also provided with a transverse groove or gain 7^b within which the upper part of plate 4 and the cross bar 3^a of its frame 3 are located, whereby the depolarizer plate 4 is securely held and kept from lateral sway or swinging to any appreciable extent, as the lower extended parts

7^c of block 7, on opposite sides of the gain 7^b, are adapted to bear against the sides of plate 4 or its frame portion 3^a. The positive electrodes or zincs 8 are supported by and secured to the insulating block 7, and are shown located upon opposite sides of the extensions 7^c of said block, bolt 9 passing through said electrodes and through said insulating block in a direction substantially transverse to rod 5 but out of circuit with frame 3 and plate 4. By this means the positive electrodes or zincs are held securely in position against and are supported by the insulating block 7, and are thus prevented from lateral sway or swinging to keep said electrodes from contact with plate 4. One or more zincs may be used arranged as set forth, and I have shown said zincs connected with a binding post 10 on cover 2 by a suitable conductor 11.

The elements of the battery may be readily replaced either by removing bolt 9 to replace the positive electrodes or zincs without disturbing plate 4, or plate 4 may be removed by detaching the lower cross piece 3^b of frame 3, or by removing bolt 5 and disassembling the parts, and then reassembling them. The electrodes are all suspended from cover 2 and are thoroughly insulated from each other, the battery is convenient to handle and adjust, and relatively cheap to manufacture.

Having now described my invention what I claim is:—

1. In a primary electric battery the combination of an insulating block provided with a gain, a depolarizing plate co-acting with said gain, a positive electrode supported adjacent said plate, and a support for said block in circuit with said plate, and a frame for said plate supported by said block.

2. In a primary electric battery the combination of an insulating block provided with a gain, a depolarizing plate supported by said block and having a portion located within said gain, a positive electrode carried by said block, a rod passing through said block and having a head within a recess in said block, for supporting the same, and means for supporting said rod.

3. In a primary electric battery the combination of an insulating block, a frame supported by said block, a depolarizing plate carried by said frame, said insulating block having a gain co-acting with said

plate, a rod passing through said block and having a head within the block, and a positive electrode supported by said block adjacent said plate.

5 4. In a primary electric battery the combination of a jar, a cover, a rod depending from the cover, an insulating block upon the rod provided with a gain at its lower part, a frame supported by said block, a
10 depolarizing plate carried by said frame and having a portion located in said gain, positive electrodes attached to said block on opposite sides thereof, the extensions of said
15 block at the sides of said gain lying between said plate and electrodes, and a bolt passing through said electrodes and through said block and having a head within an opening in the under part of said block for supporting the electrodes upon the block.

20 5. In a primary electric battery the combination of a jar, an insulating cover, a rod depending from the cover, an insulating block provided with a bore and a recess receiving said rod, said block having a gain
25 below the recess, a frame supported by said block, a depolarizing plate carried by said frame and having a portion located in said gain, positive electrodes located on opposite
30 sides of said plate, and a bolt passing through said electrodes and block and through said recess above said plate.

Signed at New York city, in the county of New York, and State of New York, this 27th day of May, A. D. 1909.

GEORGE A. LUTZ.

Witnesses:

T. F. BOURNE,
MARIE F. WAINRIGHT.