

(No Model.)

L. E. FELTON.
GALVANIC BATTERY CELL.

No. 287,812.

Patented Nov. 6, 1883.

Fig. 1.

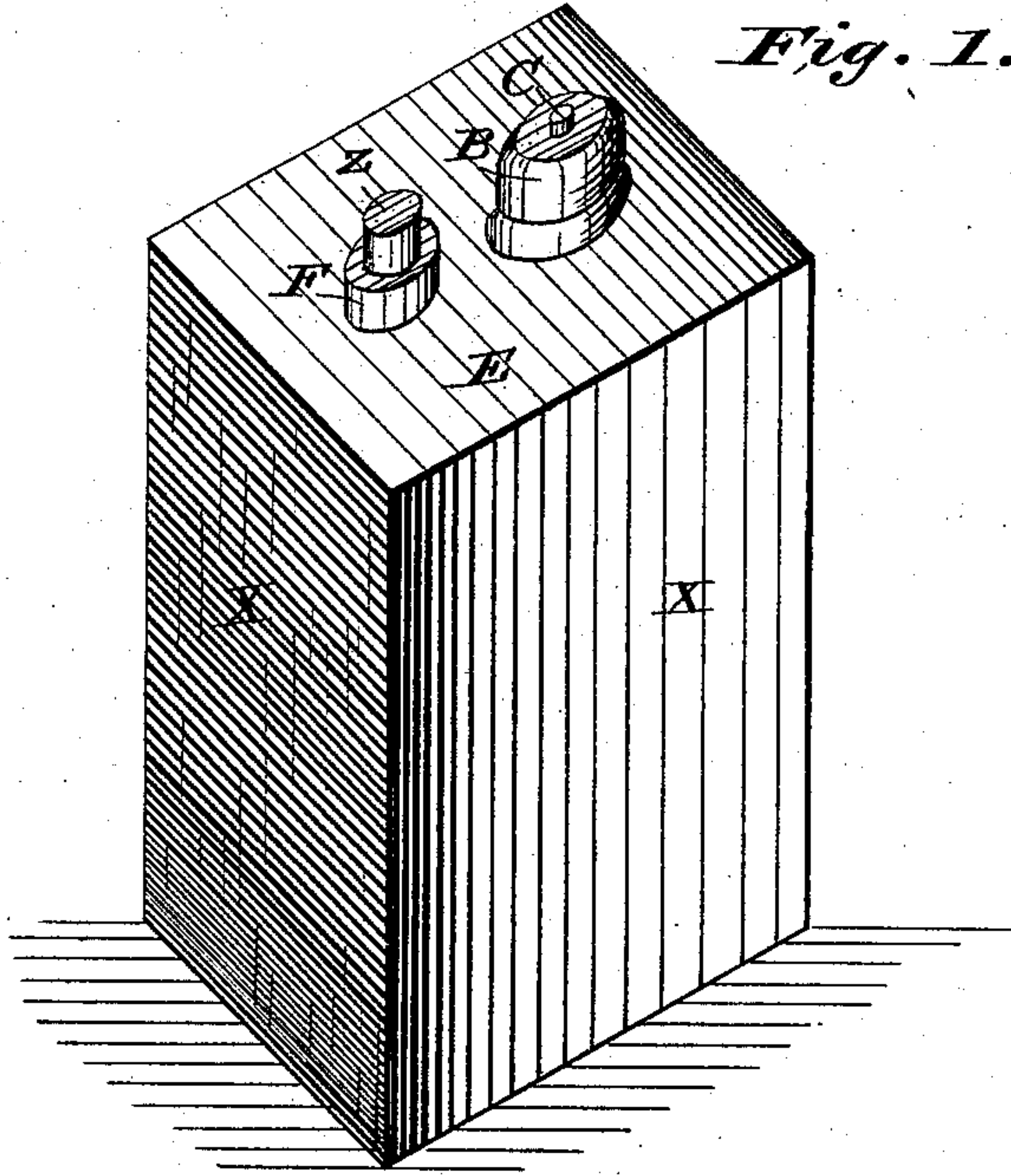


Fig. 3.

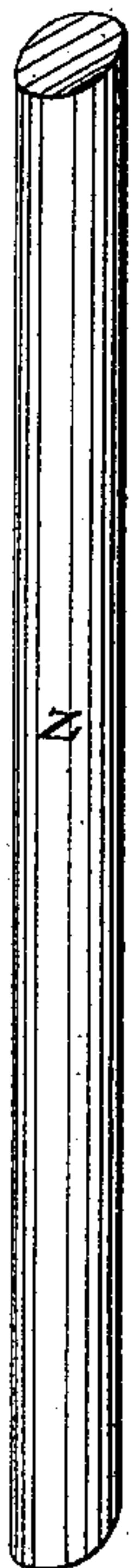


Fig. 2.

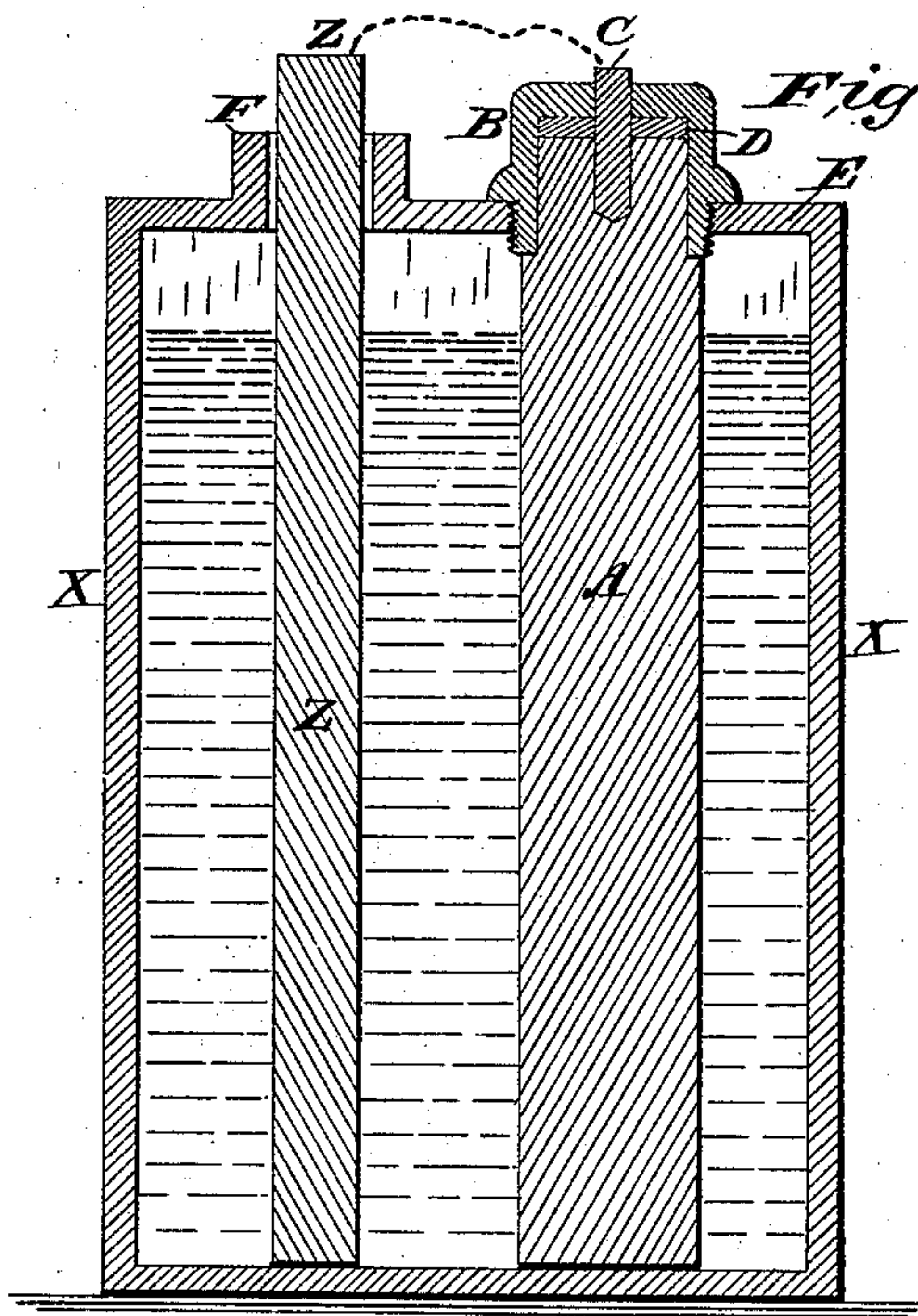
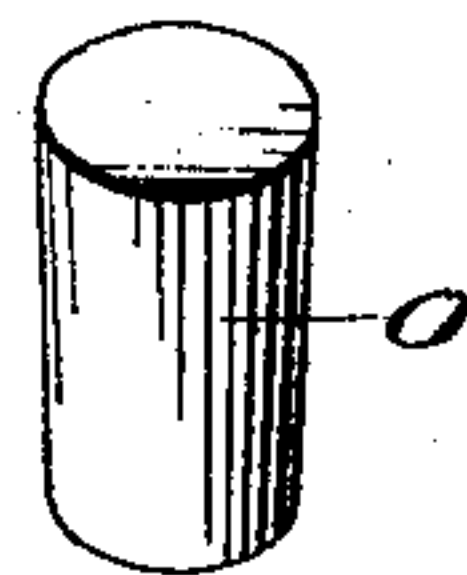


Fig. 4.



WITNESSES

T. C. Brecht
W. A. Thatcher

INVENTOR

Lucius E. Felton

Attorney

UNITED STATES PATENT OFFICE.

LUCIUS E. FELTON, OF POTSDAM, NEW YORK.

GALVANIC-BATTERY CELL.

SPECIFICATION forming part of Letters Patent No. 287,812, dated November 6, 1883.

Application filed October 6, 1881. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS ELY FELTON, a citizen of the United States, residing at Potsdam, in the county of St. Lawrence and State of New York, have invented a new and useful Galvanic-Battery Cell; 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 accompanying drawings, making part of this specification.

The object of my invention is to make a portable battery, which can easily be carried about, taken up, or set down without the connections with the electrodes becoming corroded by contact with the fluid used to excite their action, and which, furthermore, will not, whatever its use, permit the fluid to either spill or leak.

To this end, therefore, my invention consists in a battery-cell in which the containing body or vessel is provided with a cover or top which is permanently vulcanized thereon, having two electrodes passing through the same, one united therewith by anti-corrosive cement or packing and the other adapted to be freely inserted or removed through an orifice, which, at the will of the operator, may be instantly opened or hermetically closed by the removal or insertion of a plug or stopper, thus adapting the cell to be easily filled and securely closed for portability, or quickly opened for operation.

In carrying out this invention I secure one of the electrodes, preferably the carbon element, which may be either wholly carbon, or carbon combined with some other suitable substance, with cement or packing, in the top or cover in such manner that one end thereof will project outside the jar or cell for connection. There are several modes by which this may be accomplished, but I prefer the one illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a cell with my improvements in position for operation. Fig. 2 is a central vertical section of the same, showing the mode of inserting and securing the electrodes, and Figs. 3 and 4 are detailed views.

A is the negative or carbon element, which

in this instance I have chosen to show as detachably attached to the cover. It has a section of metal rod or wire, C, soldered into one end for better contact. The end of the carbon is coated with cement and pressed into a hard-rubber ferrule, B, upon one end of which is cut a screw. A disk of hard rubber, D, having a central opening for metal rod or wire C, is pressed with cement into the end of the ferrule against the end of the carbon. The screw of the ferrule, having been coated with cement, is screwed into a hole in the cover E, provided with a corresponding thread. It will be obvious that the disk D is not essential to the operation of my device, simply serving to make the carbon more secure and give a better finish. Nor is the metal rod or wire essential, as contact may be made directly with the carbon element itself. The contact, however, is better with the metal, as set forth. The thread may be dispensed with by which the negative electrode is secured to the cover of the jar, and the ferrule, instead, simply pressed into an opening therein and secured by cement or packing; and the ferrule itself may be dispensed with, and the end of the carbon fixed or secured in the opening with cement or packing. The form shown, however, is preferred.

The battery-cell consists of a hard-rubber jar or vessel, X, closed on all sides, one of which answers for the top or cover, provided with holes or openings, one, as described, for the carbon element A, the other for the positive electrode Z, which in this case is of zinc. Into the hole for this electrode is secured a neck, F, the outlet or opening of which is adapted to be securely closed by means of the rubber cork or stopper O. This neck, it is obvious, is not essential, the function of the cork or stopper not depending thereupon.

The carbon element having been secured, as described, the battery-cell is complete and ready for filling. The fluid, when introduced, can neither spill, leak, nor corrode the connections, in whatsoever position it may be placed or carried.

To work the battery, the cell having been filled with exciting-fluid, (for the composition of which I prefer the following: to three-

fourths of a pint of water add one ounce of sulphuric acid, stir, and add one-half ounce of finely pulverized bichromate of potash,) the positive or zinc electrode is introduced, and connection with each pole is made in the usual manner. The zinc element should be removed when the cell is not in use and rinsed, and the opening in the cover closed to guard against accident.

10 With the cell herein described I am enabled to avoid the obvious disadvantages attending the portable use of an open-mouthed cell. With it, moreover, the advantages of a wet battery can always be had, thus dispensing with dry electric piles, which are portable, but which, to maintain any operative degree of efficiency, must be frequently charged and recharged.

Now, therefore, having fully explained the nature of my improvement and the best means I am acquainted with for carrying the same into practice, I claim—

1. As a new article of manufacture, the battery-cell hereinbefore described, consisting of a hollow body or vessel provided with a cover or

top which is permanently vulcanized thereon, and having two electrodes passing through it, one united therewith by anti-corrosive cement or packing, the other adapted to be freely inserted or removed through an orifice which, at the will of the operator, may be instantly opened or hermetically closed, whereby the cell may be filled and closed for portability or opened for operation.

2. The combination, in a battery-cell, as hereinbefore set forth, of the hollow body or containing-vessel having a cover or top which is permanently vulcanized thereupon and provided with two openings, of an electrode passed through one and packed therein with anti-corrosive cement, and a plug or stopper removably secured in the other, whereby the cell is adapted to be filled and hermetically closed and the electrode-connection prevented from corrosion.

LUCIUS ELY FELTON.

Witnesses:

H. D. THATCHER,
JNO. L. BROWN.