(No Model.)

C. F. BRUSH.

SECONDARY BATTERY ELEMENT.

No. 274,905. Patented Apr. 3, 1883.

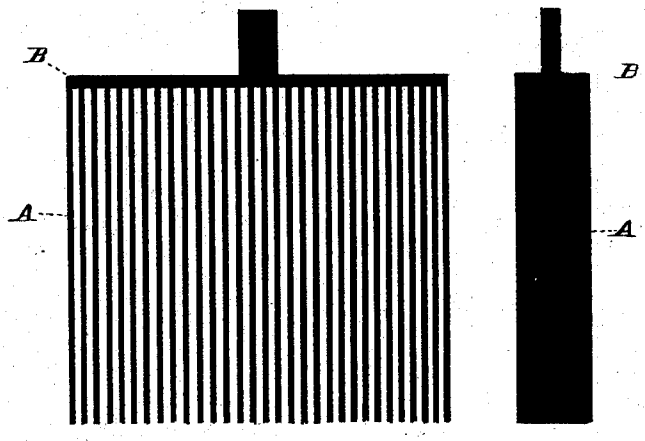


Fig. 1. Fig. 2

Fig. 3.

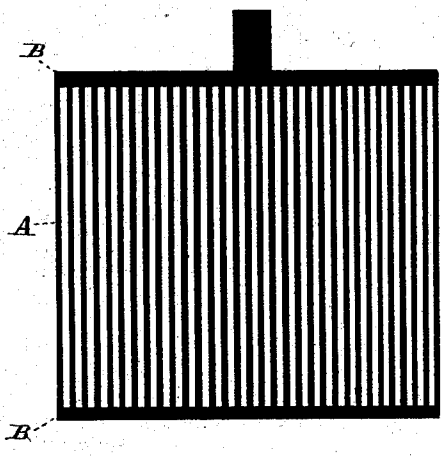
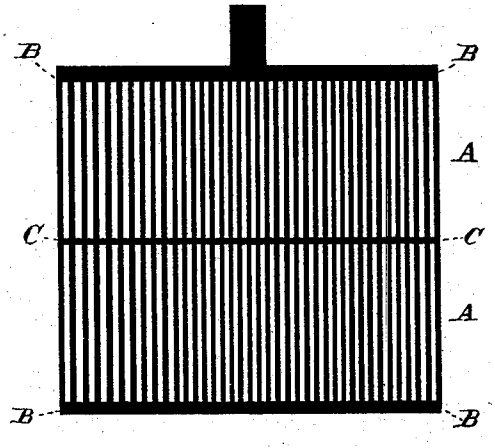


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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SECONDARY-BATTERY ELEMENT.

SPECIFICATION forming part of Letters Patent No. 274,905, dated April 3, 1883.

Application filed May 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. BRUSH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Secondary-Battery Elements; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to secondary or storage electric batteries; and said invention consists in the following specified plan or arrangement in constructing the elements of said batteries.

In the drawings, Figures 1, 3, and 4 are front views, representing various embodiments of my invention. Fig. 2 is an edge view of the devices shown in Figs. 1, 3, and 4.

A A are two or more strips, bars, or sheets of lead, (or any other material suitable for use in secondary-battery elements,) "formed" or treated in any suitable manner.

B B are uniting and sustaining pieces, made of any material from which the parts A can be constructed.

The parts A and B may be joined either by being separately constructed and afterward soldered together in the relation indicated, or the parts A may be held in proper position and relation while the parts B are cast upon the ends of the parts A; or the entire structure, as indicated in the drawings, may be cast at one operation.

The parts A may be united either by connections B at their ends only, as indicated in Figs. 1 or 3, or, in addition to these end connections, one or more intermediate connecting-webs, C, may be interposed, as indicated in Fig. 4 of the drawings.

Among the advantages attending a battery element constructed as above specified may be mentioned, first, the element presents many small surfaces instead of a few large ones, and upon these small surfaces the active coating of the element can expand without that liability to blister and peel off that exists in the case of more extended surfaces; and, second, there is a large amount of aggregate surface exposed in a small space and a free circulation of the battery-liquid secured around and throughout the element.

What I claim is—

1. A secondary-battery element consisting of a number of sheets or plates, A, of the same name or polarity, electrically connected together at one or more points, and arranged, when in use, with the broad surfaces of said plates facing each other, without the intervention between them of anything excepting the battery-fluid in which the element is immersed, substantially as set forth.

2. A secondary-battery element consisting of a number of sheets or plates connected together at their upper and lower ends and arranged with their broad surfaces facing each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. BRUSH.

Witnesses:

LEVERETT L. LEGGETT,

ELBERT H. BAKER.