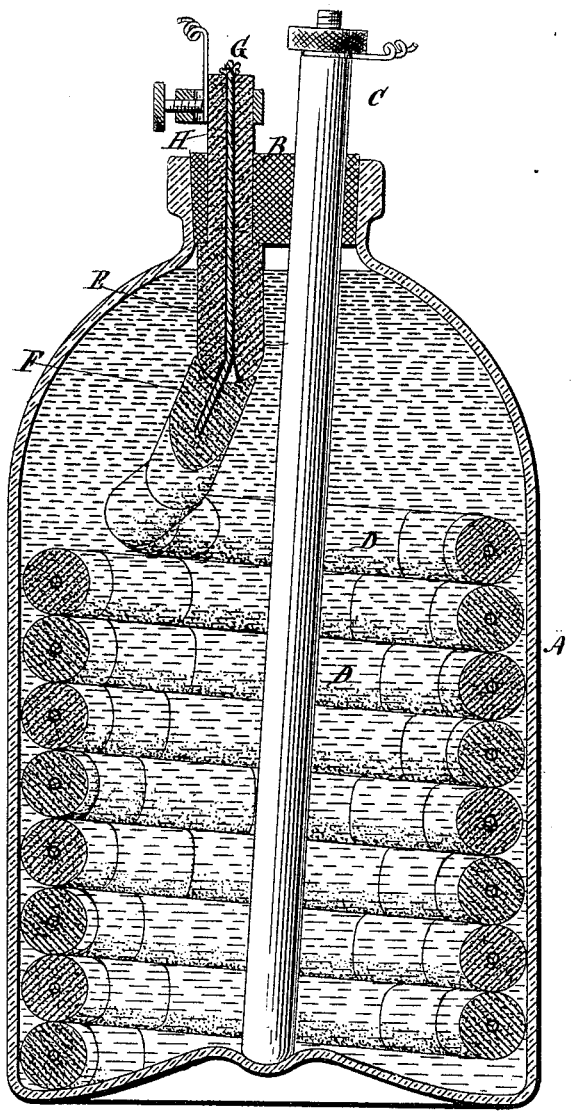
(No Model.)

H. J. BREWER.

GALVANIC BATTERY.

No. 346,395. Patented July 27, 1886.



Witnesses:
Wm. A. Pollock
Wm. Gardner

Inventor.
Horatio J. Brewer
By his Attorney
E. N. Dickerson Jr

UNITED STATES PATENT OFFICE.

HORATIO J. BREWER, OF NEW YORK, N. Y.

GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 346,395, dated July 27, 1886.

Application filed November 12, 1885. Serial No. 182,604. (No model.)

To all whom it may concern:

Be it known that I, HORATIO J. BREWER, of the city, county, and State of New York, have invented a new and useful Improvement in Galvanic Batteries, of which the following is a full, true, and exact description, reference being had to the accompanying drawing.

This invention relates to an improved galvanic battery in which the electro-negative element consists of a number of independent sections which are pierced longitudinally and held together by means of a cord, preferably of elastic material, drawn longitudinally through them.

My invention will be readily understood from the accompanying drawing, in which A represents the jar, preferably bottle-shaped. This is closed by a stopper, B, preferably of rubber, though other material may be employed. This rubber serves to retain in position the upper ends of the positive and negative elements. The positive element is preferably a zinc rod, C, as shown. The negative element consists of a number of sections approximately cylindrical in form, and longitudinally pierced with holes, through which a retaining-cord is to be passed. One end of each section is preferably made convex and the other preferably made concave to fit the convexity of the next section. These sections are lettered D in the drawing, and the manner of their coming together is shown at E F.

G represents a cord used to spring the connections together.

I find it advantageous to somewhat enlarge the opening at the convex end of the sections, thereby allowing a certain amount of movement between these adjacent sections, though this is not essential. The upper section, H, is arranged to traverse the stopper B, and is provided at its upper end with a suitable connection for carrying off the electric current.

The cord G is preferably made of elastic india-rubber, though it may be of other material; but I prefer in all cases to have an elastic tension put upon it. This tension may be put upon it by having part of the cord of rubber and the rest of non-elastic material. The sections so strung upon the cord, as will be seen, are capable of being arranged into a spiral, as shown in the drawing, in which form I prefer to use them, being so coiled in the battery-jar. The zinc is arranged to descend through their center, and the entire battery can be inclosed in the jar without liability of the escape of the liquid. The sections themselves may be all of carbon; or they may be alternately of carbon and a more highly electro-negative material; or they may be all of a more highly electro-negative material, such as that heretofore patented to George Leclanché. By this arrangement I obtain an exceedingly compact and useful battery, and one in which I can readily substitute sections in any part of the spiral should such sections become in any way broken or otherwise rendered useless.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An electro-negative element for a battery, which consists of a series of sections longitudinally pierced and strung together upon a cord, permitting their lateral movement without destroying the electric contact between the adjacent sections, substantially as described.

2. The combination of a battery-jar with an electro-negative element spirally coiled therein, which element consists of a series of approximately-cylindrical sections longitudinally pierced and strung upon a cord, which holds them in electric contact with each other, substantially as described.

3. The combination, in an electro-negative element, of two or more sections of carbon or material containing carbon, which consists of approximately-cylindrical bodies of such material having alternate convex and concave ends, and a cord longitudinally passing through such sections and serving to maintain them in electric contact, while at the same time they are capable of lateral motion, substantially as described.

4. The combination of the battery-jar A, an electro-negative element consisting of the sections D, strung together upon the cord G, and thereby held together and against the section H, which projects through the cover of the battery, substantially as described.

5. An electro-negative element for a battery, which consists of alternate sections approxi-

mately cylindrical in shape, of carbon and a more highly electro-negative material, the said sections being longitudinally pierced and held together by a cord passing longitudinally through them, substantially as described.

6. In an electro-negative element for batteries, the combination of two or more sections of material containing carbon, longitudinally pierced, and held together by an elastic cord passing longitudinally through such sections, substantially as described.

HORATIO J. BREWER.

Witnesses:
GEO. H. EVANS,
WM. A. POLLOCK.