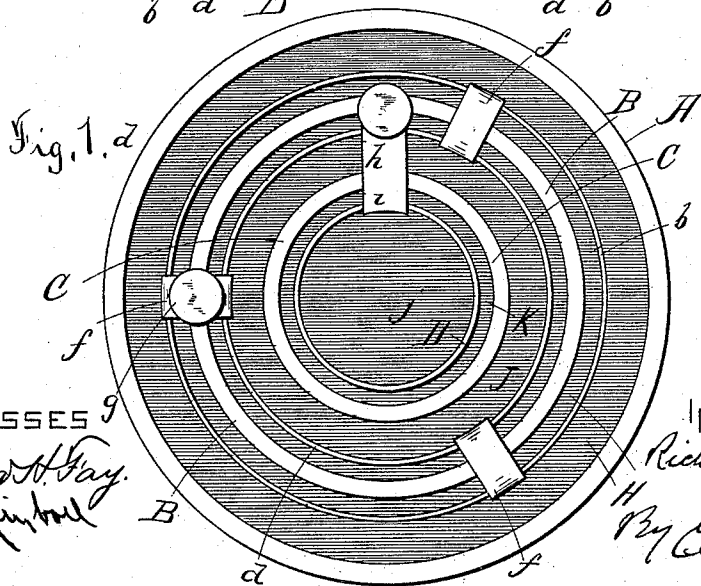
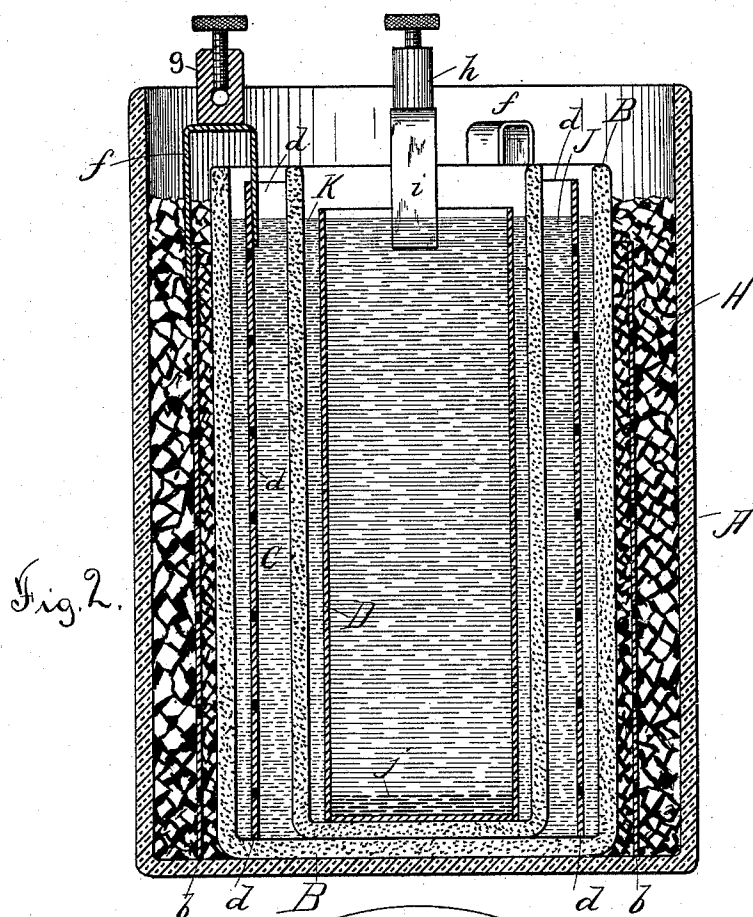


(No Model.)

R. P. OSGOOD.
ELECTRIC BATTERY.

No. 476,296.

Patented June 7, 1892.



WITNESSES
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RICHARD P. OSGOOD, OF METHUEN, MASSACHUSETTS.

ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 476,296, dated June 7, 1892.

Application filed January 18, 1892. Serial No. 418,389. (No model.)

To all whom it may concern:

Be it known that I, RICHARD P. OSGOOD, of Methuen, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Electric Batteries, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved battery, and Fig. 2 a vertical transverse section of the same.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to primary batteries, which are particularly adapted for "closed-circuit" work; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

In the drawings, A represents the containing-jar, which may be of any suitable form and material.

A cup B, of biscuit porcelain or similar porous material, is disposed within the containing-jar. Said cup is surrounded by a cylinder *b* of copper perforated at intervals. Within the cup B a second perforated cylinder *d* of copper is disposed. Said copper cylinders are connected at equidistant points by copper straps *f*, overlapping the upper edge of the cup B. To one of these straps a binding-post *g* is secured. Within the inner copper cylinder *d* a second porous cup C is disposed, and within the cup C a zinc cylinder or cup D is placed. A binding-post *h* is secured to a lug *i* on said zinc cup. In the bottom of the zinc cup a quantity of mercury *j* is inserted for continual amalgamation of the zinc. Between the porous cup B and the containing-jar A blue vitriol H is disposed, covering the copper cylinder *b*. Within the cup B and immersing the inner copper cylinder *d* there is a solution J of five per cent. of sulphuric acid and water. Within the inner cup C a solution K of zinc sulphate is disposed. When the circuit is closed, the inner copper sheet *d* polarizes be-

fore the outer sheet *b* is affected. The solution within the outer cup B remains at all times clear. The outer copper *b* has no action. The local action by this arrangement of parts is reduced to a minimum, and I find that there is no deposit of copper on the zinc D, because the vitriol solution cannot pass through to have any effect on said zinc, it being all deposited on the inner copper sheet *d*. A battery of extremely-low resistance is thus produced. It would seem that a second current should be generated between the inner copper sheet *d*, through the porous cup B, to the outer copper surrounded by the vitriol. This would happen were it not for the fact that the vitriol solution soaks through the porous cup to the inner copper *d*, generating an electro-motive force which connects at the binding-post with the force from the regular collecting copper plate going in opposite direction. These forces thus uniting the current thus generated is sent around the circuit conjointly from the inner and outer coppers. Having thus explained my invention, what I claim is—

1. In an electric battery, the combination of a containing-jar, a porous cup therein, two perforated copper plates respectively disposed in excitants on opposite sides of said cup and connected by straps or other means, a binding-post on said connection, a porous cup within the inner copper cylinder, a zinc plate provided with a binding-post, disposed within said inner porous cup, and an excitant for said zinc, substantially as described.

2. In an electric battery, a containing-jar and a porous cup disposed within said jar, in combination with a positive pole comprising two perforated copper plates disposed on opposite sides of said cup and connected, the outer plate being immersed in a solution of blue vitriol and the inner plate in an acid solution, substantially as and for the purpose set forth.

3. In an electric battery, a positive pole consisting of two perforated copper plates connected outside the excitant and separated by a porous cup, a porous cup within the inner plate, and a negative pole disposed in said inner cup, substantially as described.

4. In an electric battery, a containing-jar, in combination with the cup B, the connected perforated copper cylinders *b* *d*, forming the

positive pole of said battery, the cup C, disposed within the inner plate d, the zinc D, disposed within said cup, and excitants for said poles, all being arranged to operate substantially as described.

5 5. In an electric battery, the perforated copper plate disposed in an acid solution within a porous cup in a containing-jar, a similar copper plate connected therewith and dis-

posed outside said cup in a solution of blue vitriol, an inner porous cup, and a zinc plate disposed therein in an acid solution, all being combined and arranged to operate substantially as described.

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