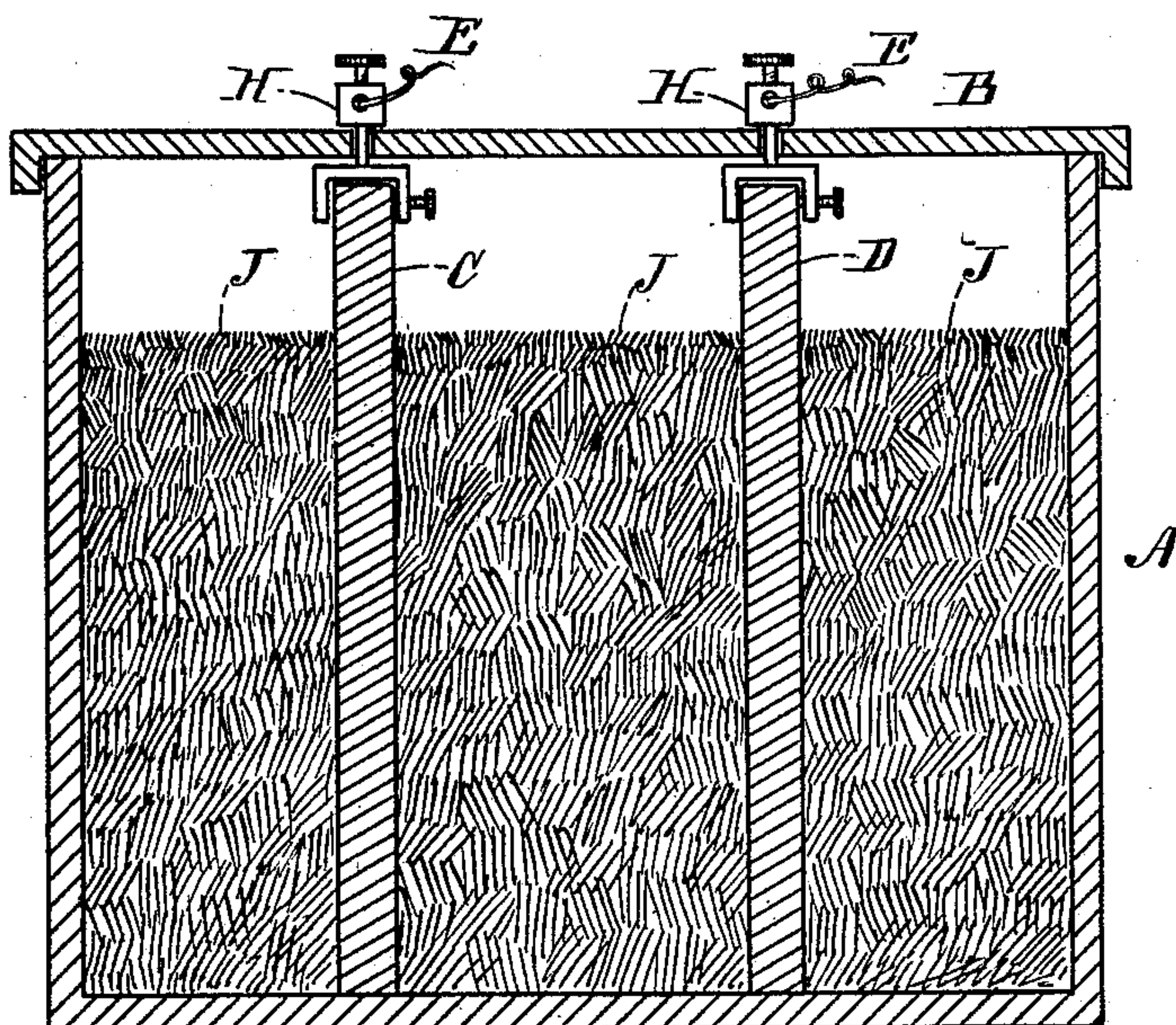


(No Model.)

E. M. HEWETT.  
GALVANIC BATTERY.

No. 387,642.

Patented Aug. 14, 1888.



WITNESSES:

*E. M. Spencey.*  
*Thomas A. Tallon.*

BY

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ATTYS-

# UNITED STATES PATENT OFFICE.

ERNEST M. HEWETT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIRAM G. FARR, OF SAME PLACE.

## GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 387,642, dated August 14, 1888.

Application filed November 17, 1887. Serial No. 255,379. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST M. HEWETT, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and  
5 useful Improvement in Galvanic Elements, 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,  
10 reference being had to the accompanying drawing, forming part of this specification, in which the figure is a vertical transverse section showing my improved elements in use.

My invention relates to that class of galvanic elements in which means are employed for preventing "creeping salts" and polarization; and it consists in a novel combination of ingredients, as hereinafter fully set forth and claimed, the object being to produce more  
15 effective elements of this character than are now in ordinary use.

The nature of the improvement will be readily understood by all conversant with such matters by the following explanation.

25 In the drawing, A represents the containing-jar; B, the cover; C, the zinc plate; D, the carbon plate; E E, the conducting-wires, and H H the screw-caps for connecting the wires with the plates, these parts being all of the  
30 ordinary form and construction and arranged in the usual manner.

The body of the jar around the zinc and carbon plates is filled or partially filled with fine infusorial earth, which is moistened or  
35 wet with an acidulated solution made as follows, to wit:

*Formula for solution.*—Sulphuric acid, one part; water, eight parts. Mix and add sufficient bisulphate of mercury to saturate the  
40 solution.

A sufficient quantity of the solution should be used to render the earth plastic or reduce it to the consistency of thick paste.

45 The employment of the bisulphate greatly increases the electro-motive force of the battery, while the paste composed of earth and the acidulated solution, as described, acts

as a filter which permits the acid to pass freely to the plates, and at the same time prevents the salts (sulphate of zinc) formed by  
50 the action of the acid on the zinc from circulating or "creeping" in the jar, thus enabling all of the acid to be used up gradually and with the best results, and also preventing polarization.

The proportion of the ingredients composing the solution may be varied considerably, or other ingredients of like nature substituted, respectively, therefor, without materially  
60 changing the nature of the solution; and in place of said solution any suitable liquid for generating a galvano-electric current—such as a saturated solution of sal-ammoniac, bicarbonate of potash, or chromic acid—may be  
65 employed.

Instead of the infusorial earth, fullers' earth or any similar absorbent substance adapted to perform the same function may be employed.

For convenience of reference, the infusorial earth moistened or wet with the acidulated  
70 solution is denominated the "paste," J.

Having thus explained my invention, what I claim is—

1. In a galvanic battery, infusorial earth or a similar absorbent substance, sulphuric acid,  
75 water, and bisulphate of mercury, in combination with a jar, a zinc plate, and a carbon plate, substantially as set forth.

2. In a galvanic battery, infusorial earth or a similar absorbent substance, sulphuric acid,  
80 water, and bisulphate of mercury, in combination with a jar, a cover for said jar, a zinc plate, a carbon plate, and conducting-wires connected with said plates, substantially as described.

3. As an improvement in galvanic elements, a paste composed of infusorial earth or similar absorbent substance, sulphuric acid,  
85 water, and bisulphate of mercury, substantially as set forth.

ERNEST M. HEWETT.

Witnesses:

O. M. SHAW,  
E. M. SPINNEY.