

U
JEAN ARMAND CALLAUD.

Improvement in Galvanic Batteries.

No. 120,034.

Patented Oct. 17, 1871.

Fig 1

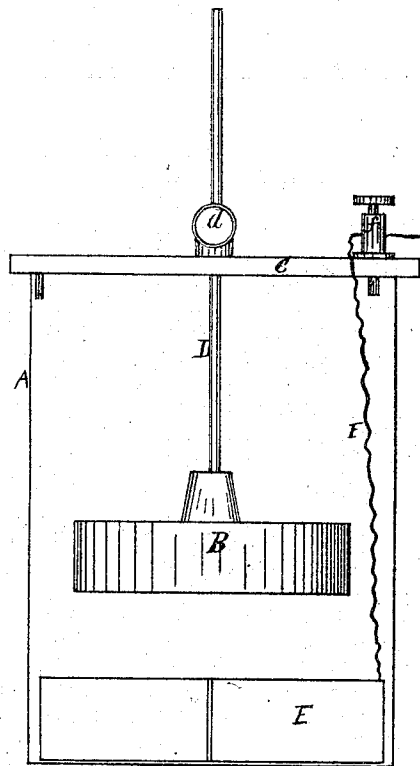
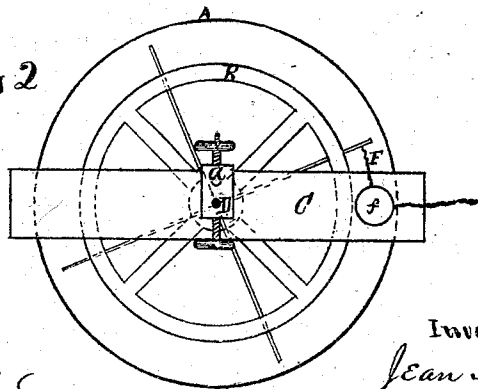


Fig 2



Witnesses
O. P. H. Sherburne
A. C. Lindsey }

Inventor
Jean Armand Callaud
By Darwell Ho
his atty

UNITED STATES PATENT OFFICE.

JEAN ARMAND CALLAUD, OF NANTES, FRANCE.

IMPROVEMENT IN GALVANIC BATTERIES.

Specification forming part of Letters Patent No. 120,034, dated October 17, 1871.

To all whom it may concern:

Be it known that I, JEAN ARMAND CALLAUD, of the city of Nantes, in the Republic of France, have invented new and useful Improvements in Galvanic Battery; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a side elevation of my improved galvanic battery, and Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate like parts in both figures of the drawing.

My invention consists in an annular disk composed of zinc, and provided with a series of arms extending from its center outward to its periphery, and in suspending said disk in such a manner within the center of the cup or jar containing the necessary fluids as to admit of being raised or lowered, whereby the action of the liquid may be graduated thereon; also, in the construction of a copper or other negative plate, E, forming a series of radial wings, and so as to present a great amount of vertical surface to the action of the fluid, and so that the same can be readily removed from the cup or jar without disturbing or mixing the fluids.

In the drawing, A represents a glass cup or jar for containing the necessary fluids. B is the disk or positive element, which is composed of zinc, and is provided with a series of arms, *a*, extending from its center or hub outward to the inner surface of its rim or periphery. C is a bar or strip of wood or other suitable material, which is supported upon the upper edge of the periphery of the jar or cup. D is a copper wire firmly affixed to the center or hub of the disk, and extends upward through a binding-post, *d*, affixed to or resting upon the upper surface of the said bar C. Affixed within said binding-post is a set-screw, *e*, so arranged as to engage wire D, by which means the said disk is secured at any adjusted height within the center of the jar or cup. E is the negative-plate, composed of a piece of sheet-copper, and so folded as to form a series of radial wings, and is placed within and upon the bottom of the cup, thereby presenting a great

amount of vertical surface to the action of the fluid, and so that, when the battery is in action, it can be removed when desired from the jar without disturbing the fluid or mixing the same, and so as to readily peel off the deposit, when desired, and return said plate to its place without disturbing the fluids. F is a copper wire, which is firmly affixed to the periphery of said sheet of copper, and extends upward through a binding-post, *f*, secured to the upper surface of bar C at or near its end.

I do not wish to confine myself exclusively to the construction of the positive-plate or disk B with the arms extending from the center outward at right angles, as parallel bars extending across the disk may be used, the object being to admit of greater surface to the action of the liquid.

To prepare the battery for action the liquids ordinarily used for that purpose are placed within the cup in the usual manner. It is a fact well known that when the battery is first set the resistance of the fluid is greatest; whereas, with the use of my said improvement, this difficulty is practically overcome, as the disk B is adjusted or lowered near to the sulphate of copper, thus facilitating the action; and when the resistance has diminished by the formation of sulphate of zinc the disk is readjusted or raised, thus equalizing the action of the liquid.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is—

1. The zinc disk B provided with arms *a*, and suspended within the center of the cup or jar A, and so arranged as to admit of a vertical adjustment, substantially as and for the purpose described.

2. The combination of disk B, wire D, bar C, and binding-post *d*, the whole arranged substantially as and for the purpose described.

3. The plate E, so folded as to form a series of radial wings, substantially as and for the purpose described.

JEAN ARMAND CALLAUD.

Witnesses:

B. GERRISH, Jr.,
A. SICGAR.

(50)