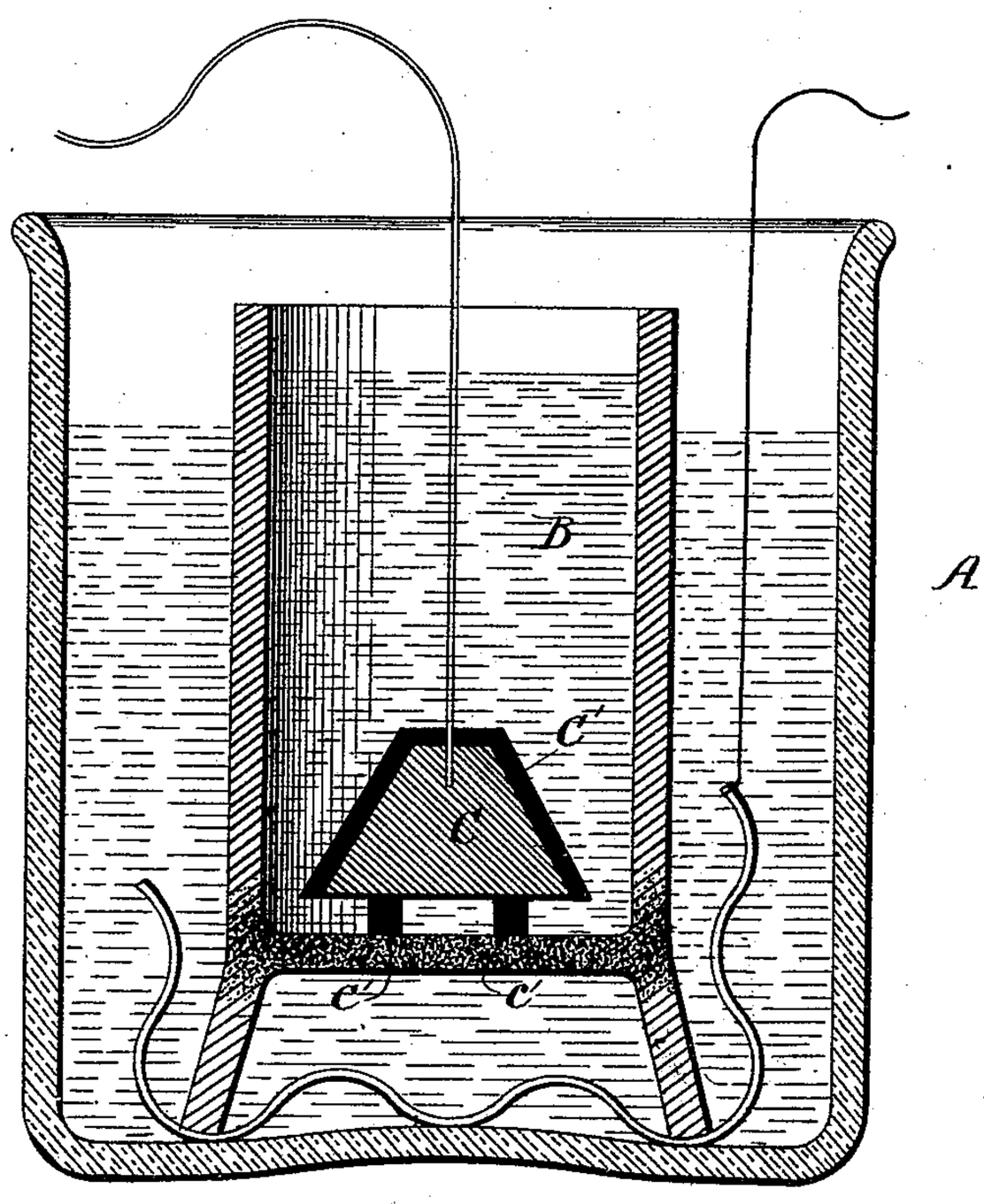
(No Model.)

J. BEATTIE, Jr.

GALVANIC BATTERY.

No. 429,596. Patented June 10, 1890.



WITNESSES:

Thomas K. Sprechard

INVENTOR

John Beattie Jr.

BY

W. J. Johnston

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN BEATTIE, JR., OF FALL RIVER, MASSACHUSETTS.

GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 429,596, dated June 10, 1890.

Application filed January 3, 1890. Serial No. 335,743. (No model.)

To all whom it may concern:

Be it known that I, JOHN BEATTIE, Jr., a citizen of the United States, residing in Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Galvanic Batteries, of which the following is specification.

My invention relates to galvanic batteries, the object being to provide a cell of the "Daniels" type which shall have a low internal resistance, large current, and in which the zinc element shall not be wasted. I attain these objects by means of the apparatus hereinafter described.

In the accompanying drawing the figure represents a central section of my battery-cell.

A represents the outer jar, and B the porous cup standing on legs within the same. The bottom of this cup only is porous, the sides being glazed or otherwise "stopped." In the outer jar the copper is placed in a solution of sulphate of copper, while the zinc and acid are placed in the porous cup.

C represents the zinc, which in this instance is formed as a compact body having a large flat base. Its sides are coated with shellac, asphaltum, or other similar substance to prevent chemical action, but the bottom is left uncovered, and it is here, and here only, that action takes place. The zinc is raised a slight distance from the bottom of the cup, and is supported in that position by blocks of insulating material c', or the zinc may be suspended from above in any desired manner, and thus do away with the blocks c'. The asphaltum coating of the zinc is represented by C'. This construction of cell necessitates that the chemical action shall take place in the lower part, where the solution is strongest, and where the action will also be even.

Having thus described my invention, I claim—

1. In a galvanic battery, a zinc element having a portion of its surface only chemically active, the remaining portion being treated to prevent chemical action, in combination with a cup a portion of whose walls only is porous, the remaining portion being non-porous, or nearly so, the parts being located so that the active portion of the zinc stands opposite or adjacent to the porous portions of the cup, as set forth.

2. In a galvanic battery, a zinc element having all of its surface except the bottom treated to prevent chemical action, in combination with a cup whose bottom only is porous.

3. In a galvanic battery, a zinc element having all of its surface except the bottom treated to prevent chemical action, in combination with a cup whose bottom only is porous, the zinc being located inside the cup, but raised slightly off the bottom.

4. In a two-fluid battery-cell, an outer jar containing the copper and solution, a cup located therein having non-porous sides and a porous bottom, an acid and zinc located in the cup, the zinc rendered active at its bottom only and being raised above the bottom of the porous cup, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN BEATTIE, JR.

Witnesses:
HENRY H. SHERMAN,
HENRY H. EARL.