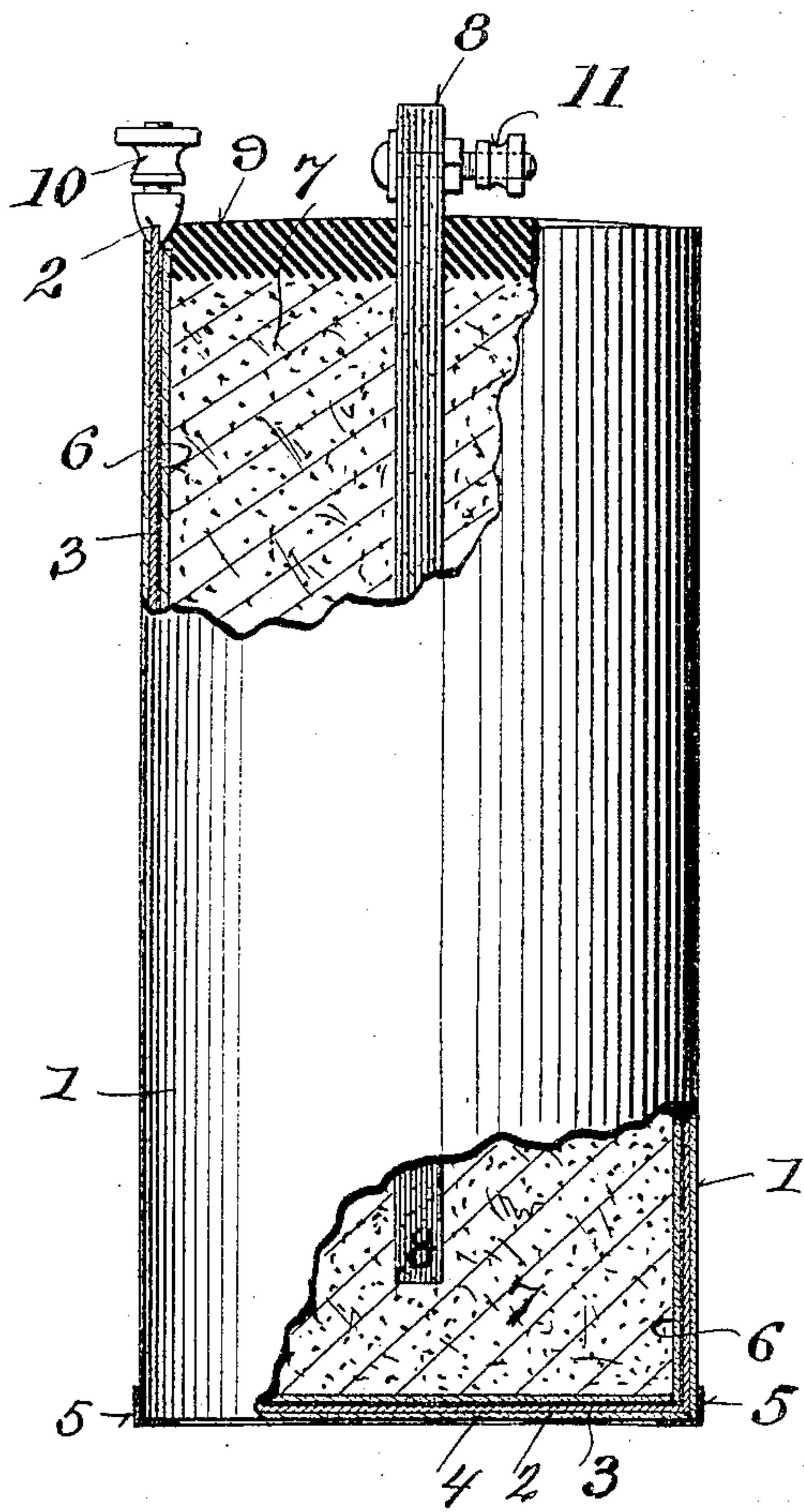


No. 778,653.

PATENTED DEC. 27. 1904.

A. GABRIELSON.
ELECTRIC BATTERY.
APPLICATION FILED JULY 21, 1904.



Witnesses
Geo. W. Young,
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UNITED STATES PATENT OFFICE.

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ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 778,653, dated December 27, 1904.

Application filed July 21, 1904. Serial No. 217,457.

To all whom it may concern:

Be it known that I, ARNOLD GABRIELSON, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Electric Batteries; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has especial reference to dry batteries used for open circuit only; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter, in connection with the accompanying drawing, and subsequently claimed.

The said drawing is a view in elevation of one of my said devices, partly broken away or in section to better illustrate certain details of construction.

Referring by numerals to the said drawing, 1 designates the outer shell of the battery, formed of stout paper or pasteboard rolled into cylindrical form, inside of which is a zinc cup 2, coated on the inner surface with mercury, as indicated at 3. Beneath the bottom of said cup is a disk 4, of paper or pasteboard, secured to the outer cylinder, of the same material, by a strip of fabric 5, securely cemented to said paper or pasteboard. Next to the mercury-coated inner surface of the said zinc cup 2 is a lining of paper 6, which has been soaked in a dilute solution of sulfuric acid, this lining covering both the bottom and the cylindrical wall of said cup. Inside of said lined cup is placed a mixture of coke-dust, powdered graphite, and sal-ammoniac crystals, (marked 7,) and then a battery-carbon 8 is forced down and the mixture 7 packed down tightly and a dilute solution of potash poured in to thoroughly moisten said mixture, and next the top is sealed with tar 9. Binding-posts 10 and 11 are connected to the zinc cup 2 and the carbon 8, respectively, and the outer shell 1 and disk 4 are put on last and cemented, together with the fabric 5, and the battery is complete, ready to be wired, as desired.

In constructing my battery I first make or take the zinc cup 2 and wipe the interior carefully with a cloth and then take a weak solu-

tion of sulfuric acid (about nine-tenths water and one-tenth acid) and thoroughly clean the said inner surface of the zinc with a brush dipped in the acid solution and coat the wet surface with the mercury, spreading the same evenly with the brush until the said surface is all silvered over, and then I take the paper 6 and soak same in the before-named acid solution, which latter is quickly absorbed by the paper, and then put the wet paper at once against the coated surface of the zinc, dropping a disk of this soaked paper on the bottom of the cup and rolling a piece of this paper 6 around the coated cylindrical inner wall of the cup, the paper adhering to the said coated bottom and wall of the cup at once.

The mixture 7 is composed of three-fourths coke-dust and one-fourth powdered graphite, and to a quart of this mixture two ounces of sal-ammoniac crystals are added and all thoroughly stirred together and mixed, and after the zinc cup has been filled with this and the carbon 8 placed therein the mixture is packed down very tightly and more added till the original quart has been reduced in bulk to about one-third of the space it originally occupied, the size of the cylindrical zinc cup for an ordinary battery using the amount of the filling mixture named, being six inches in height by two and a half inches in diameter. After the cup is filled with the mixture 7 it is wet with the said weak potash solution, (about nine-tenths of water to one-tenth potash,) about two fluid ounces of this solution being used. Then the melted tar 9 is immediately applied to form a seal and the binding-posts 10 and 11 are secured to the zinc cup and carbon, and the outer dry paper or pasteboard is wound around the exterior of the zinc cup and the edges of the paper cemented together, forming the shell 1 and the bottom disk 4, applied beneath the cup and secured to the shell 1 by the strip 5 of fabric, forming an outer insulating-covering for the battery.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

An electric battery, comprising a zinc cup, coated with mercury on its inner surface, with

a lining of paper soaked in dilute sulfuric acid, and filled with a mixture of coke-dust, powdered graphite and sal-ammoniac crystals, wet down with a potash solution, and sealed;
5 a battery-carbon supported by and within the filling mixture in said zinc cup; binding-posts on the said cup and carbon, and an insulating-covering around the said cup.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in 10 the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

ARNOLD GABRIELSON.

Witnesses:

H. G. UNDERWOOD,
GEORGE FELBER.