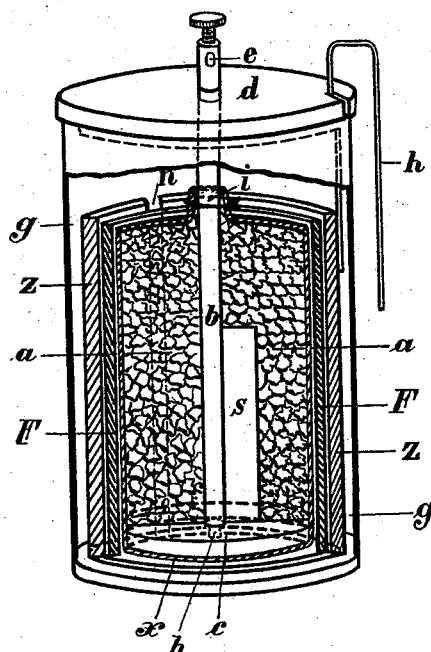


(No Model.)

A. HEIL.
GALVANIC ELEMENT.

No. 523,892.

Patented July 31, 1894.



WITNESSES.

Edgar Tate
Edgar Tate

INVENTOR:

A. Heil
BY *Munn & Co*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBRECHT HEIL, OF CRUMBACH, GERMANY.

GALVANIC ELEMENT.

SPECIFICATION forming part of Letters Patent No. 523,892, dated July 31, 1894.

Application filed September 27, 1893. Serial No. 486,642. (No model.)

To all whom it may concern:

Be it known that I, ALBRECHT HEIL, watch-maker, of Ober-Strasse, Fränkisch Crumbach, in the Empire of Germany, have invented a new and useful Galvanic Element, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to galvanic elements and it has for its object to render the element proof against oxidation of the binding screws, small and convenient in shape with relatively powerful action, hermetically closed to prevent evaporation of the liquid, cleanly and nice in appearance and easy to make.

The invention will be described with reference to the accompanying drawing, forming part of this specification, representing a vertical section, wherein—

b is a lead rod or support having at its lower end a projection *b'*, extending into a wooden base or disk *c*, its upper end being permanently fixed in the hermetically closing cover *d* and provided with a terminal *e*. A plate *s* of silver is soldered to the leaden support, and the conducting support *b* and plate *s* are embedded in a mass of pounded carbon *a* and peroxide of manganese in small pieces, inclosed in a linen bag *x* whose mouth is tied tightly at *i* around the support *b*.

F, is a cylindrical diaphragm of felt surrounding the linen bag, and the zinc *Z* is bent to cylindrical form around the felt, a vertical slit *n* being left for access of the liquid to the

felt, and the exterior surface of the zinc is coated with an acid proof covering. The whole is contained in a glass jar *g* together with the electrolyte. A tinned copper wire conductor *h* is soldered to the zinc cylinder and passes out of the cell through a slit in the wooden cover *d*.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A galvanic element consisting of a negative electrode attached to a conducting support made of a base metal, a depolarizing compound in which the said electrode is embedded, a bag containing the said depolarizing compound and tightly fitted around the said conducting support, a felt diaphragm surrounding the bag and a positive electrode located exteriorly of the diaphragm, substantially as specified.

2. A galvanic element consisting of the combination of parts hereinbefore specified, viz: a silver electrode attached to a lead support sealed through the cover and embedded in a mixture of carbon and peroxide of manganese, inclosed in a linen bag, a felt cylinder or diaphragm surrounding the same, and adapted to be saturated with a suitable liquid, and a zinc electrode, substantially as specified.

Fränkisch Crumbach, Hesse, July 1, 1893.

ALBRECHT HEIL.

Witnesses:

PHILIPP SCHÄFER,
W. F. HÖRR.