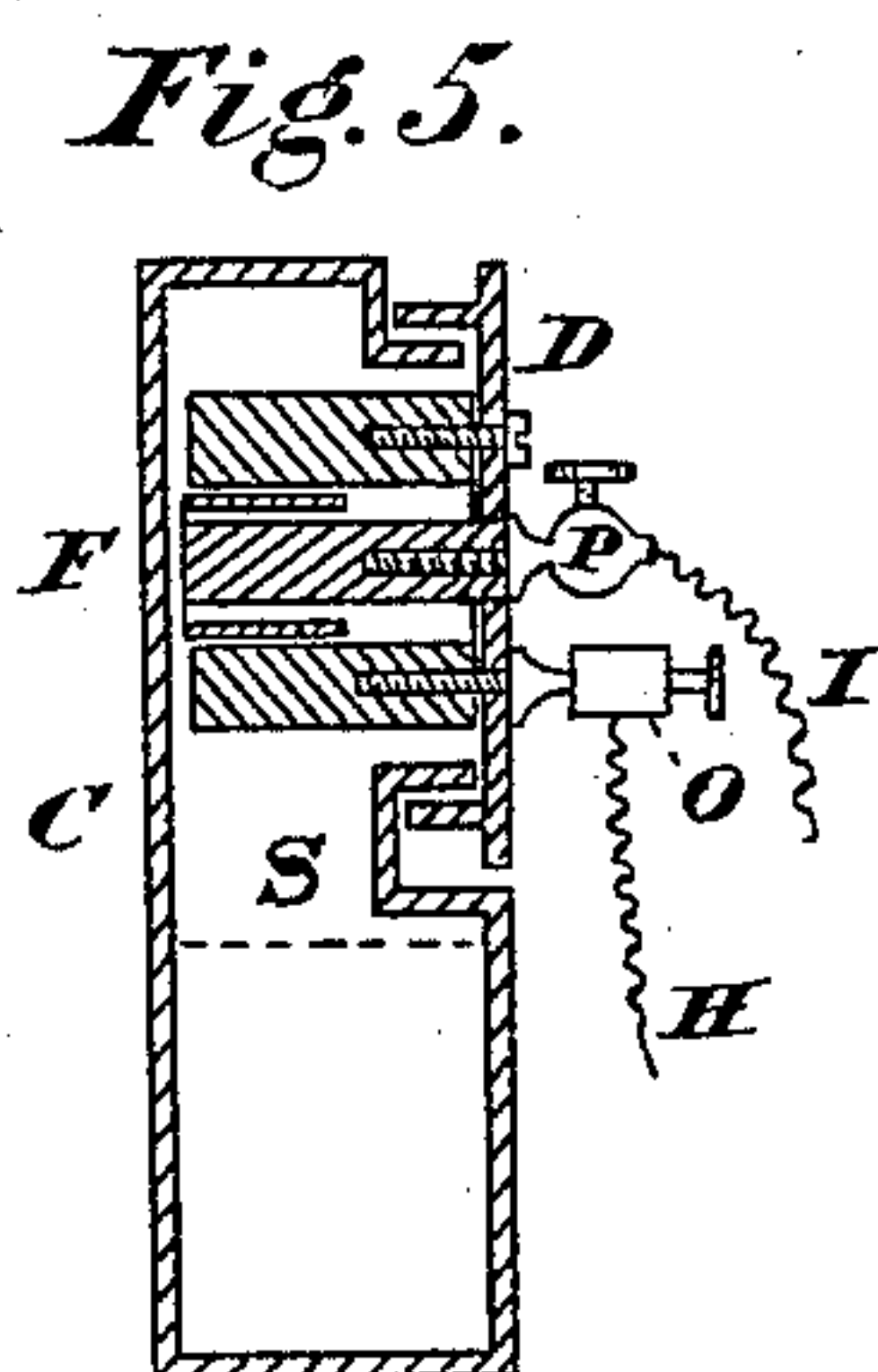
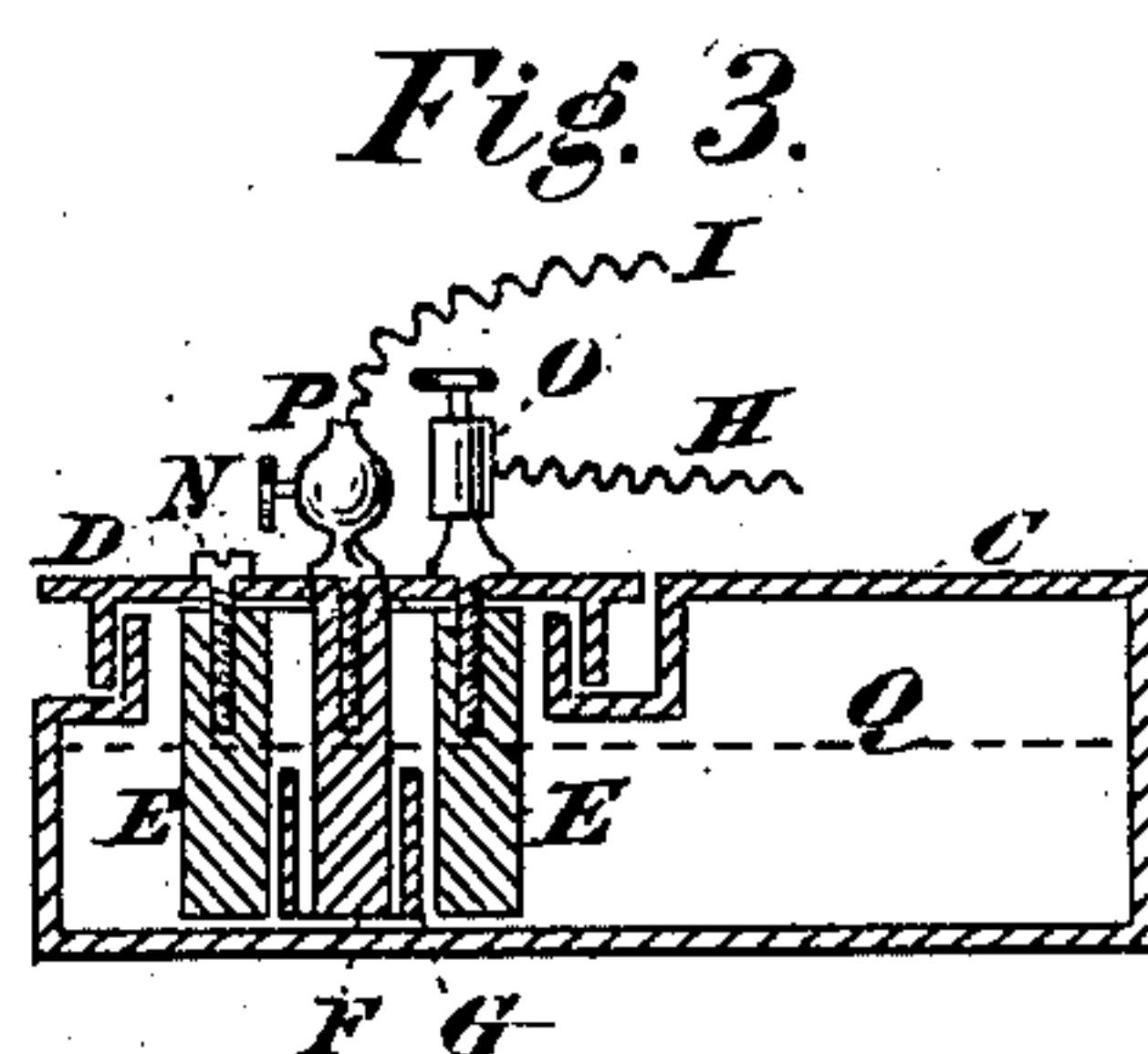
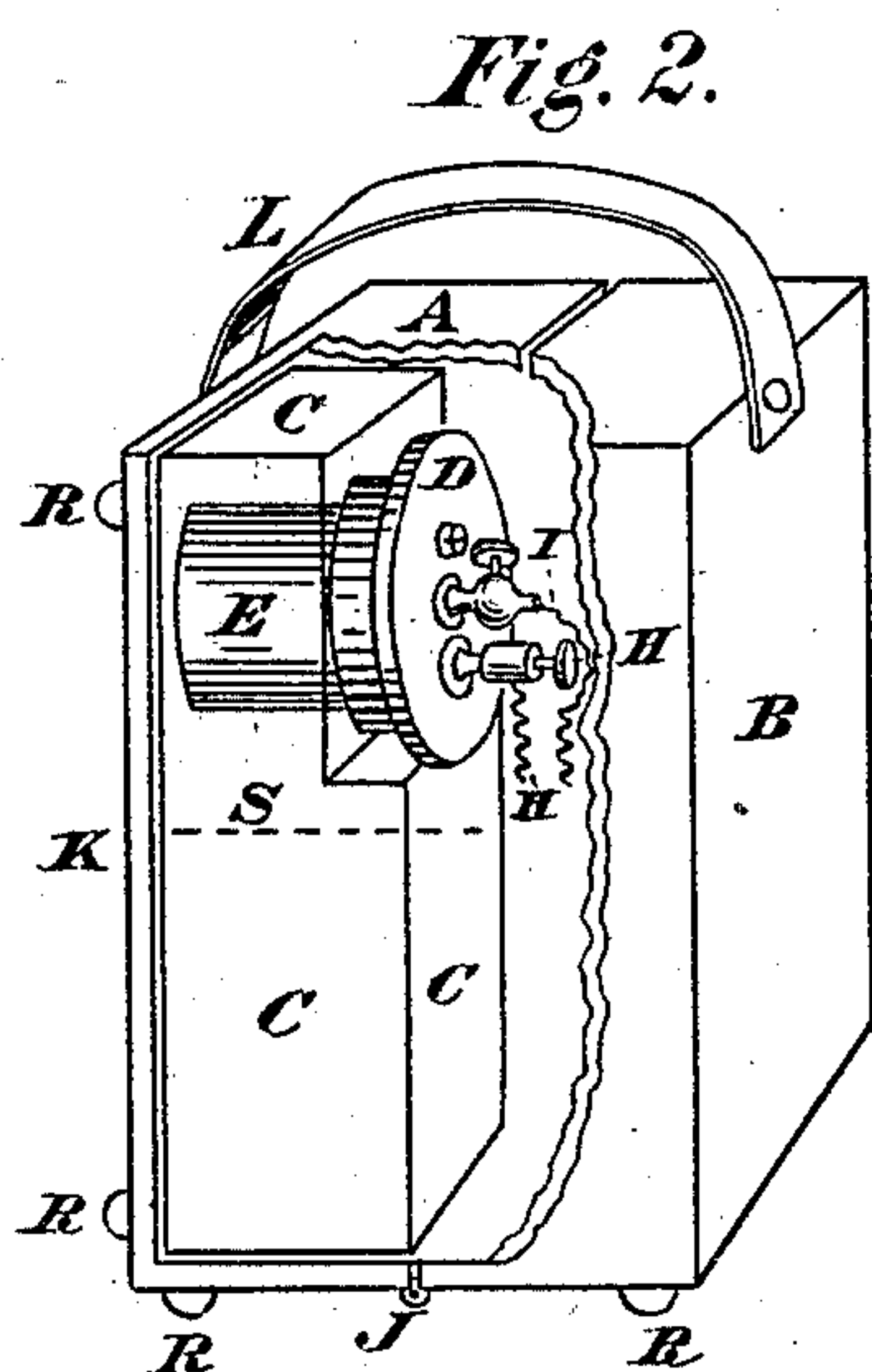
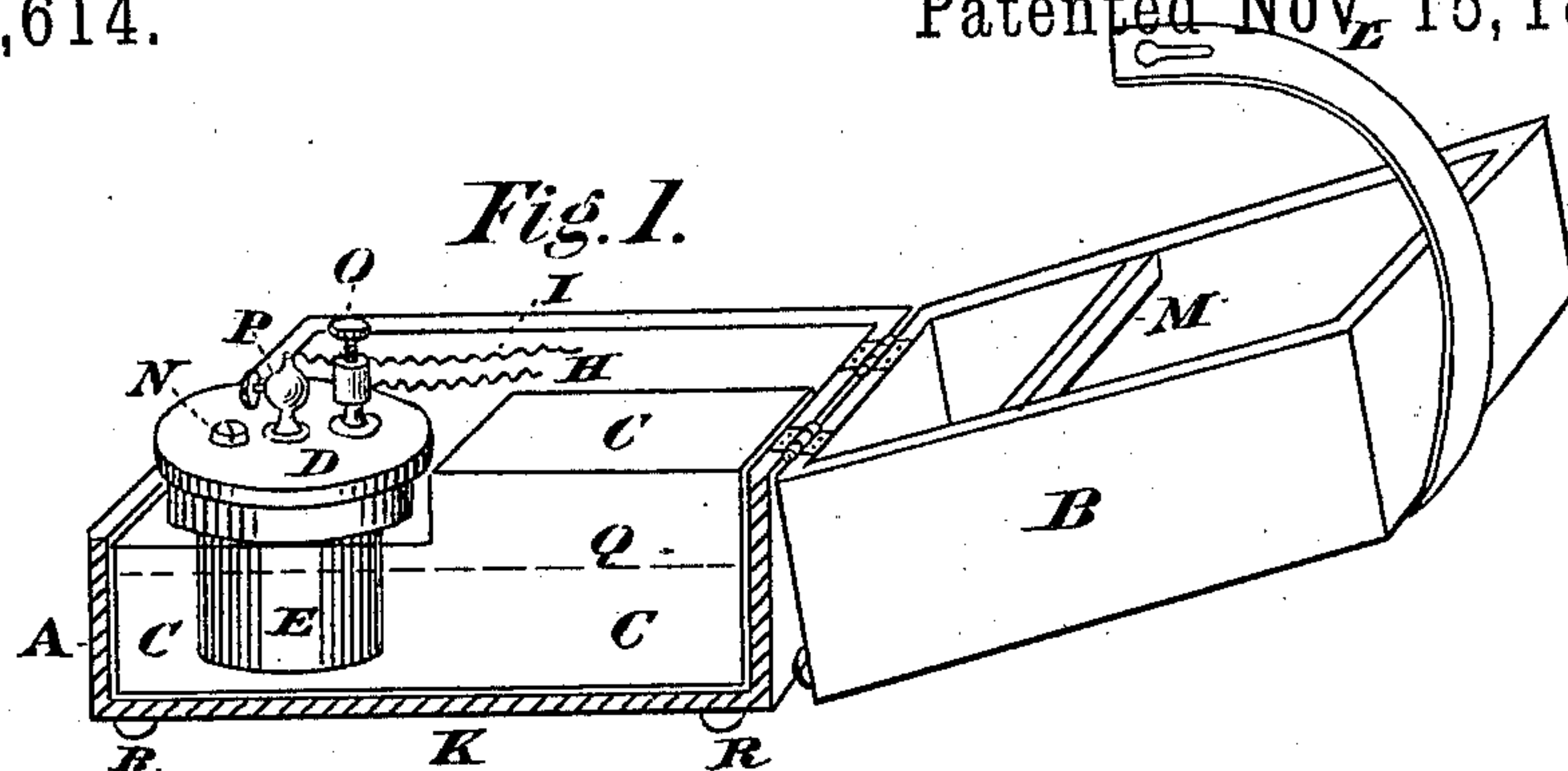


(No Model.)

A. C. HARRIS.  
GALVANIC BATTERY.

No. 249,614.

Patented Nov. 15, 1881.



WITNESSES.

John Curry Miller  
Frank Pardon.

INVENTOR.

Alonzo C. Harris

# UNITED STATES PATENT OFFICE.

ALONZO C. HARRIS, OF LOUISVILLE, KENTUCKY.

## GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 249,614, dated November 15, 1881.

Application filed May 27, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO C. HARRIS, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and  
5 useful Improvements in Galvanic Batteries, of which the following is the specification.

The object and result of my improvement is to produce an electro-medical battery of more economical and more efficient construction than  
10 those heretofore in use. These results are attained by the means illustrated in the annexed drawings, making part of this specification.

Figure 1 is a perspective of my improvement, showing the side of the lower half of the inclos-  
15 ing-case removed and the top thrown open to give a complete view of the position of the fluid-cell and its attachments in their relation to and connection with the other parts of the apparatus. Fig. 2 represents a perspective view of  
20 my battery with a portion of the walls removed, showing the interior. Fig. 3 represents a longitudinal vertical section of the battery; Fig. 4, a detached view of the positive and negative elements in horizontal section; and Fig.  
25 5, a section, showing the position of the parts when the battery is not in use.

The letters A and B refer to the case inclosing and protecting its mechanism. The inclos-  
30 ing-case, by reason of its construction, is also used to govern the action of the apparatus, as will be hereinafter more fully described and explained.

The fluid-cell, referred to by the letters C in Figs. 1, 2, 3, and 5, is an oblong glass with a  
35 recessed end having a flange or circular projection therefrom, for attaching the fluid-cell inclosing-piece, referred to by the letters D in Figs. 1, 2, 3, and 5.

In my improvement the carbon or negative  
40 connection is made in the form of a cylinder, as shown at E, which incloses the round zinc bar and the cylindrical carbon or positive and negative connections between the fluid and the other parts of the apparatus. The round  
45 zinc bar connects with the fluid by passing through the cylindrical carbon E, as shown at F in Figs. 3 and 5, being more fully illustrated and referred to by the same letters in Fig. 4, which is a transverse section and end  
50 elevation of the cylindrical carbon E, the round zinc bar F, and the gutta-percha lining

G. The office of the lining G is to prevent the zinc and carbon from touching, and thus neutralizing each other's action on the fluid. By means of the screw-connections, referred to by  
55 the letters N and O, Figs. 1, 2, 3, and 5, the cylindrical carbon has an air-tight connection with inclosing-piece D. The screw marked O forms the negative pole of the apparatus. By reason of the air-tight connection of the car-  
60 bon with the cell-inclosing piece D an air-tight chamber is formed within the cylinder E when the zinc bar is in position, and, because of the necessity of first compressing the air contained therein, the fluid is prevented from rising to  
65 its full level around the zinc bar, which is therefore largely protected against corrosion and decomposition by the electric fluid.

The round zinc bar F is inserted through the inclosing-piece D, as shown in Figs. 1, 2, 3, 4,  
70 and 5, and forms the positive pole of the apparatus. These parts are connected with the other parts of the battery or apparatus by means of the electrodes, referred to by the letters H and I in Figs. 1, 2, 3, and 5.  
75

By reason of the arrangement of the inclosing-case A B the apparatus has an active base and a neutral base. To use the apparatus it must be set upon its active base, as shown at  
80 K in Fig. 1, which brings the fluid horizontally across and in connection with the zinc and carbon poles of the apparatus, and the current will be thus put in motion.

By closing the case A B and bringing the cross-bar M against the fluid-cell, (marked C,) 85 the apparatus may be set upon its neutral base J, and the fluid thus thrown in horizontal line with and away from the zinc and carbon connections with the apparatus, whereby the current and action of the apparatus will be stopped. 90

The horizontal fluid-line crossing and connecting with the zinc and carbon is referred to by letters Q in Figs. 1 and 3. The location of the fluid thrown in horizontal line with and therefore away from the zinc and carbon by be- 95 ing placed upon the neutral base of the apparatus is shown at S in Figs. 2 and 5.

The active and neutral bases of the apparatus, referred to by the letter K in Fig. 1 and J in Fig. 2, are provided with bosses, as shown at  
100 the letters R, to protect the case from damage.

The hinged cover B is provided with a cross-



bar, M, for the purpose of firmly securing the fluid-cell in position when the apparatus is closed and set upon its neutral base J, as shown in Fig. 2.

5 The inclosing-case A B is provided with an adjustable handle or strap, (marked L,) for the more convenient transportation of the apparatus.

10 Having thus fully described and explained the construction and operation of my improved electro-medical apparatus, what I claim as new, and desire to secure by Letters Patent, is as follows:

15 In a portable electro-medical battery, the fluid-cell constructed with a depressed end,

having a hole through it surrounded by a flange, the cap fitted tightly on said flange, the annular carbon and zinc elements, the interposed gutta-percha cylinder, the fastenings which secure the carbon and zinc to said cap, 20 and an inclosing case or box, all combined and arranged in the manner shown and described.

In testimony that I claim the foregoing I have hereunto affixed my hand this 14th day of May, 1881.

ALONZO C. HARRIS.

Witnesses:

JOHN CURRY MILLER,  
FRANK PARDON.