

(No Model.)

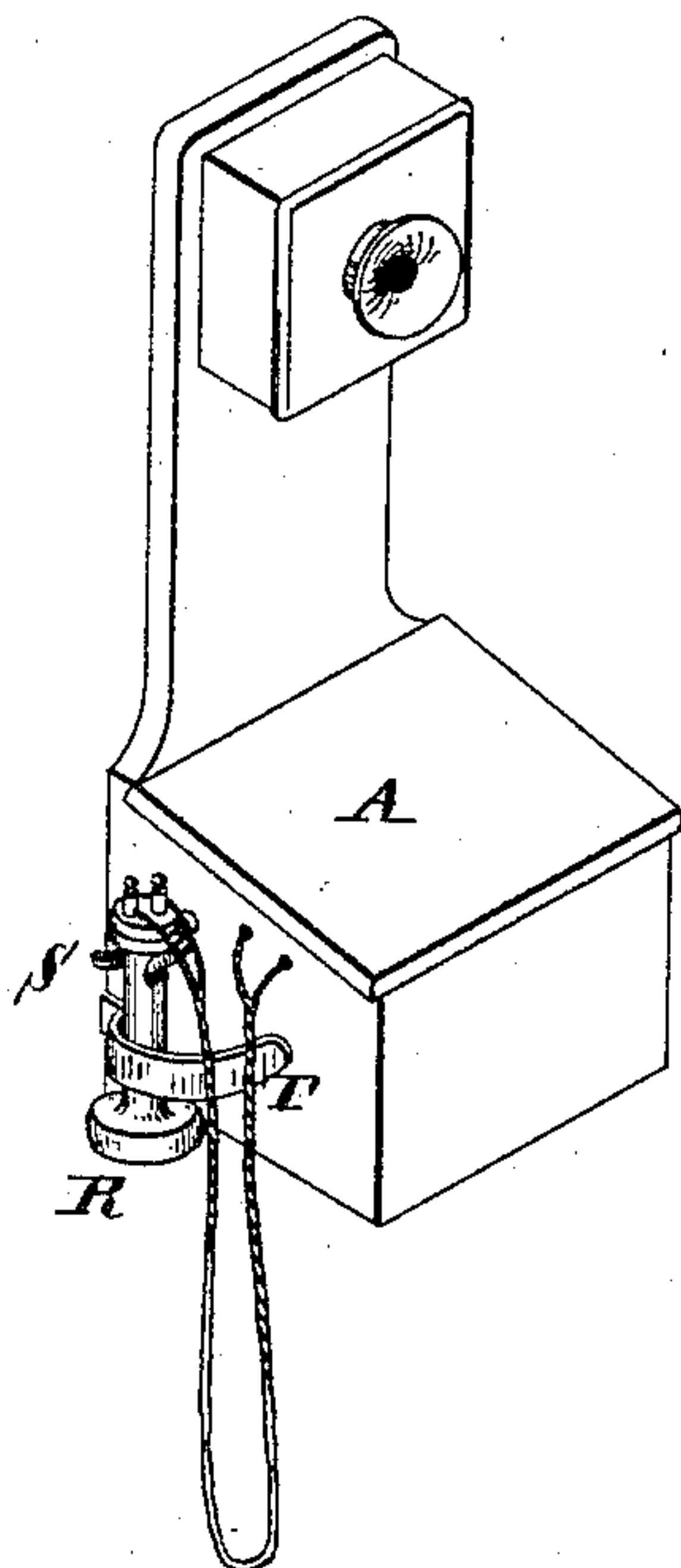
C. A. A. T. DE ST. AUBIN.

GALVANIC BATTERY AND SWITCH FOR TELEPHONE SYSTEMS.

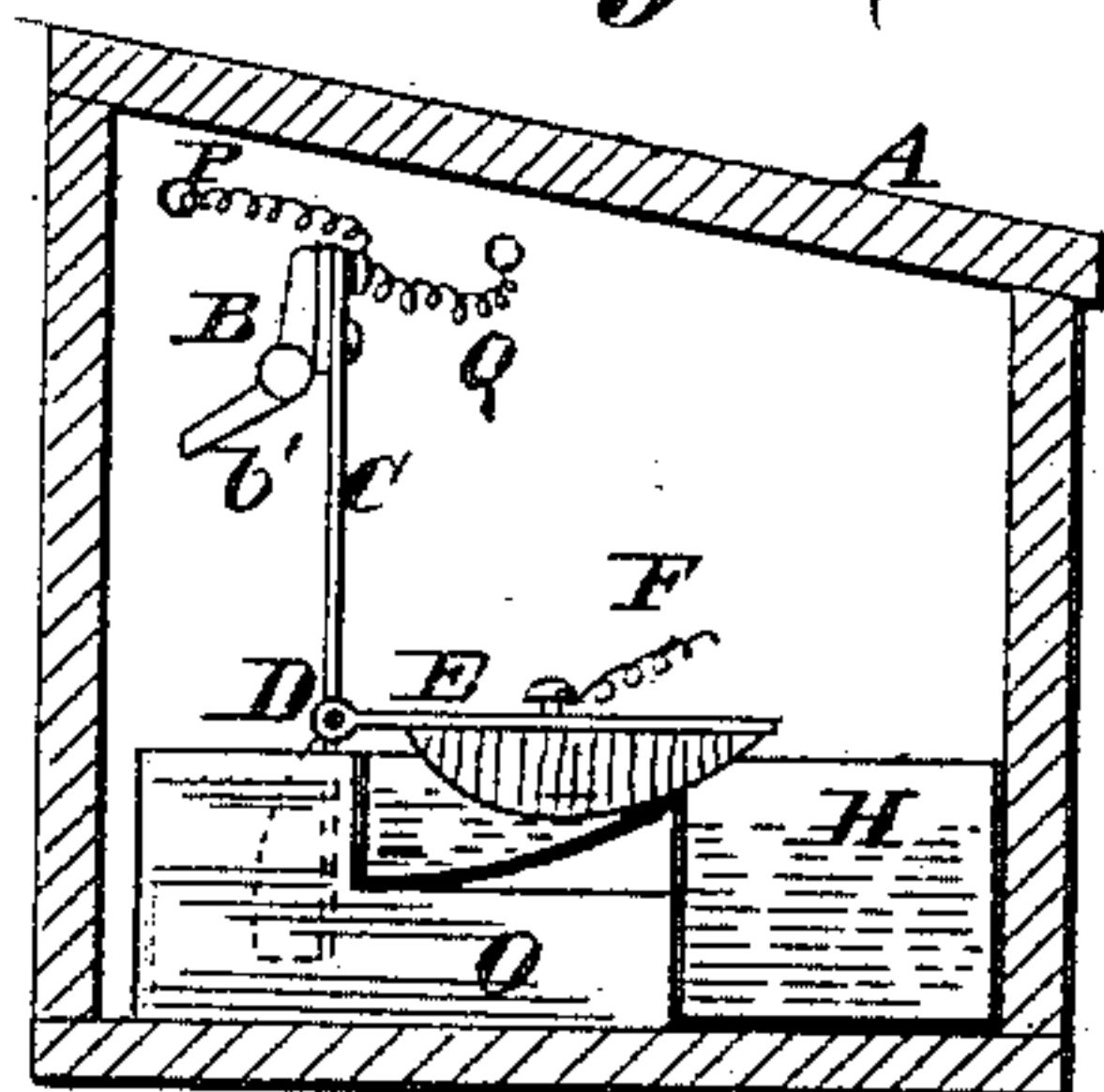
No. 338,938.

Patented Mar. 30, 1886.

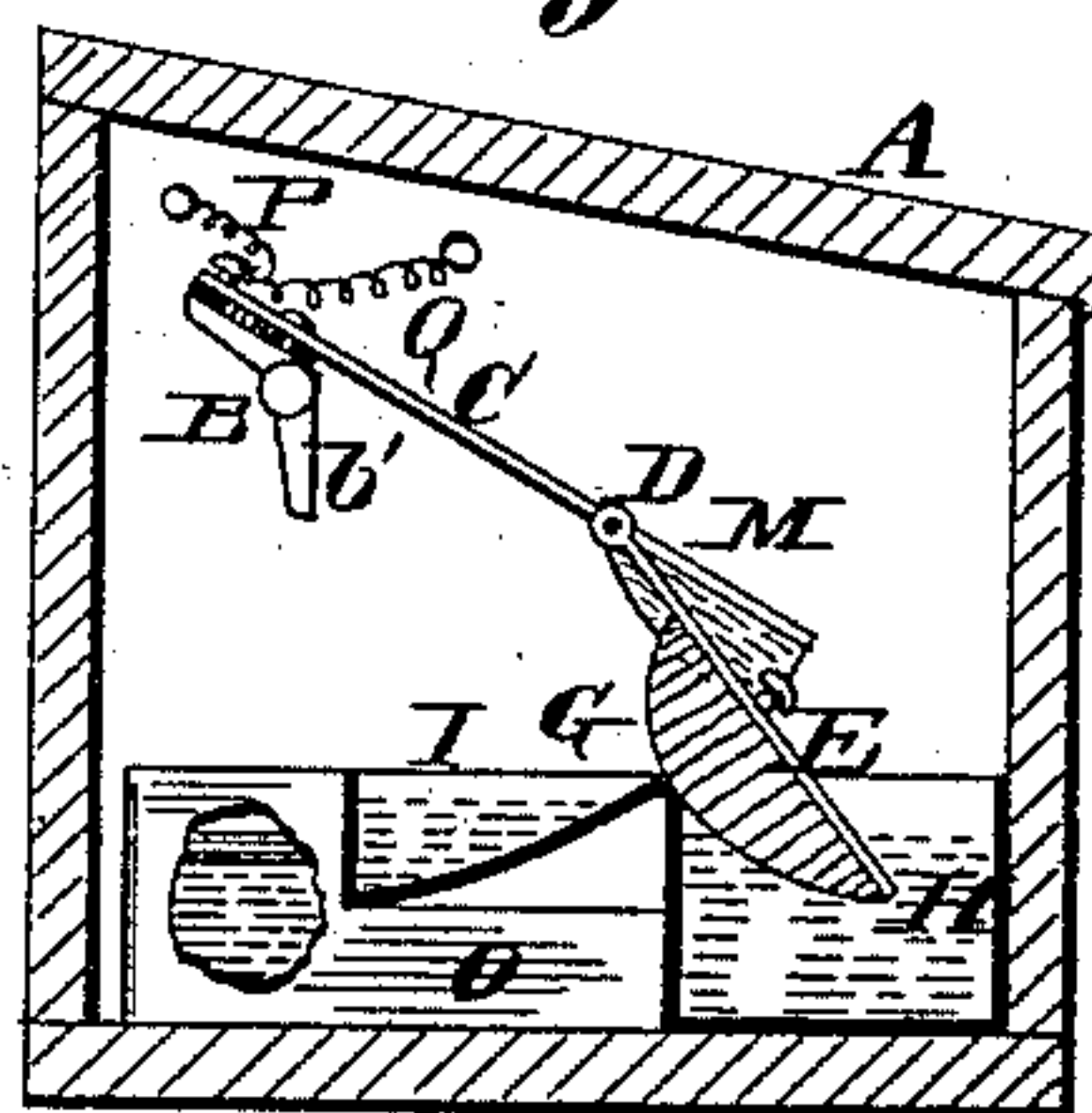
*Fig. 1.*



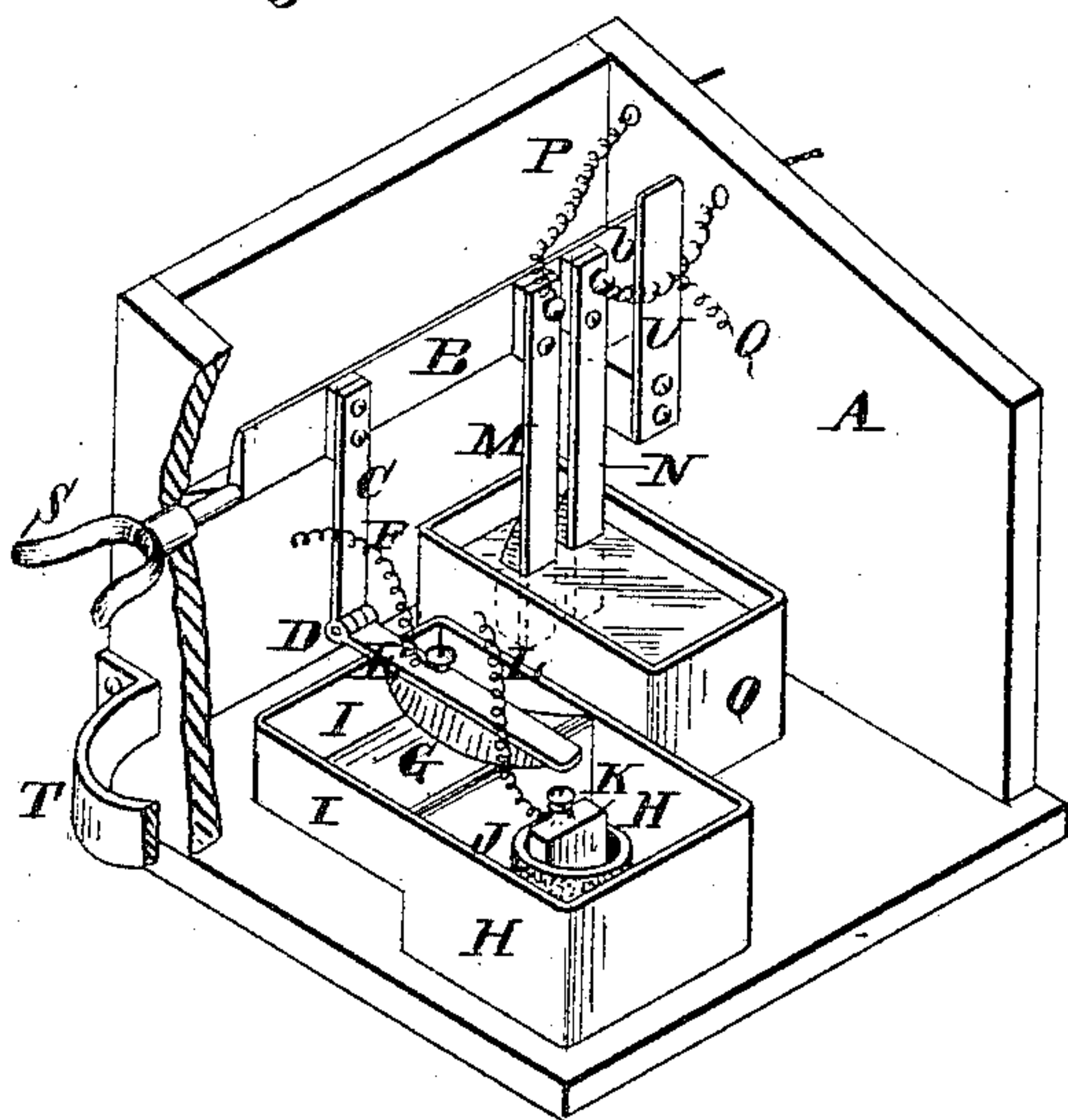
*Fig. 4.*



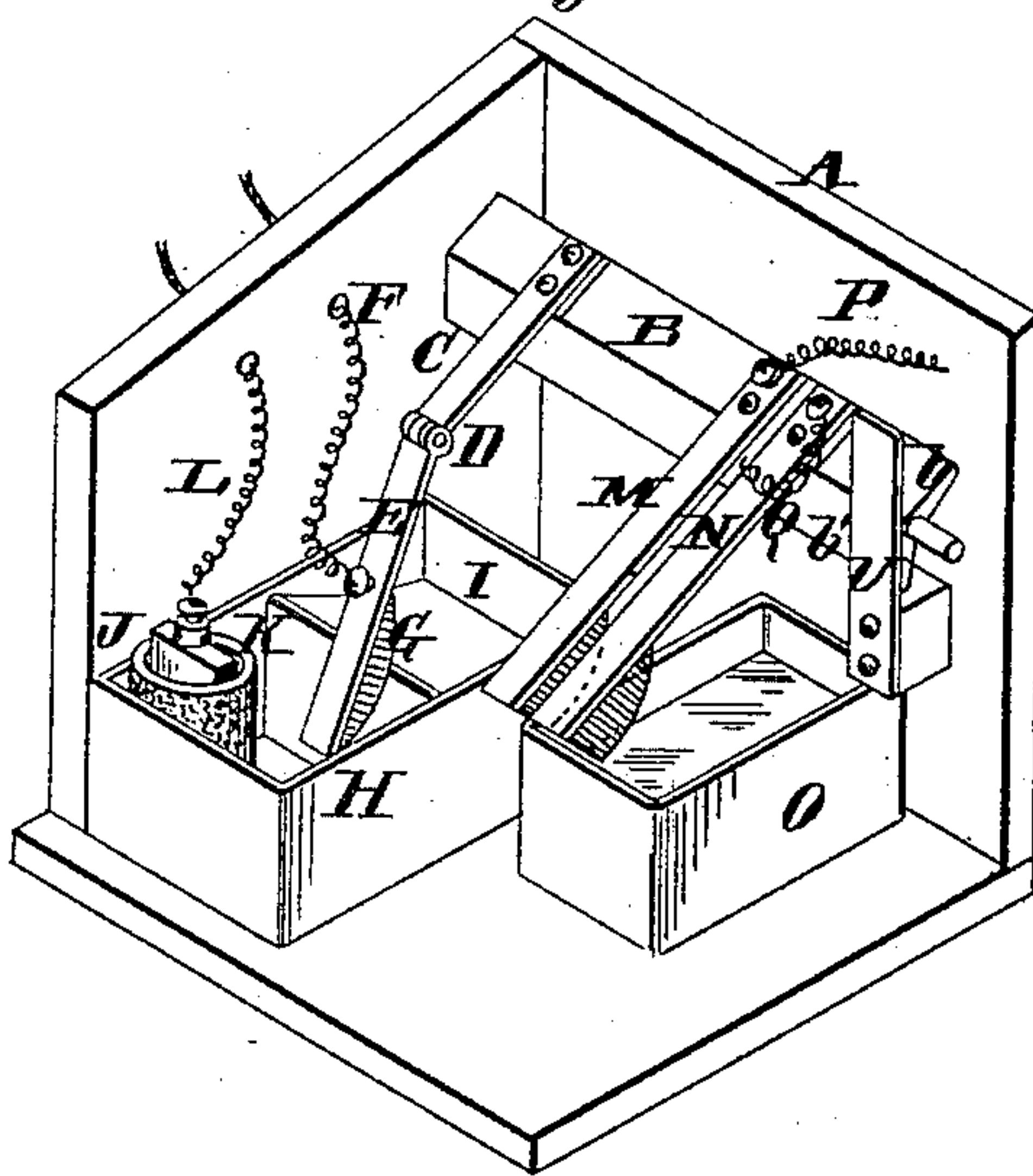
*Fig. 5.*



*Fig. 2.*



*Fig. 3.*



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"

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# UNITED STATES PATENT OFFICE.

CHARLES A. A. T. DE ST. AUBIN, OF ST. LOUIS, MISSOURI.

## GALVANIC BATTERY AND SWITCH FOR TELEPHONE SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 338,938, dated March 30, 1886.

Application filed August 1, 1885. Serial No. 173,265. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. A. T. DE ST. AUBIN, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Galvanic Batteries and Switches for Telephonic Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification and in which—

Figure 1 is a perspective view of a telephone having my improvement. Fig. 2 is an enlarged perspective view illustrating the same with the parts in the normal position. Fig. 3 is a similar view showing the parts in the position for use. Fig. 4 is a vertical section showing the parts in normal position, as in Fig. 2; and Fig. 5 is a vertical section showing the parts in the position shown in Fig. 3.

My invention relates to an improvement in galvanic batteries for telephonic systems; and my improvement consists in features of novelty hereinafter fully described, and pointed out in the claims.

The object of my invention is to obviate the greatest defect in the working of telephones, which is due to the imperfection of frictional contact, the same being dependent on springs, which are liable to relax and always corrode at the point of contact to such an extent as to render the action of the telephone very imperfect in time, and to render it useless until it has been taken apart and cleaned or the springs renewed.

The box A may be of any suitable shape.

B is a rock-shaft, having upon it an insulated arm, C, to which is jointed at D metal arm E, to which is connected a conducting-wire, F. Upon the arm E is a plate, G, of zinc or other metal, which, by the movement of the rock-shaft, is immersed in the liquid in the trough H of the galvanic battery, as shown in Figs. 3 and 5, or drawn therefrom into the trough I, containing any non-corrosive liquid, as seen in Figs. 2 and 4.

J is the porous cup of the battery, and K is a carbon or metal plate therein with a conducting-wire, L, connected thereto. The purpose of withdrawing the plate G from the acid bath into the bath of non-corrosive liquid is to avoid the corrosion of the plate when not in use.

M and N are metal arms attached to the rock-shaft, but insulated therefrom. These arms may be in the same plane as the arm C, or may vary more or less from said plane.

O is a trough containing mercury, in which the ends of the arms M and N are immersed when they are in a vertical position, as shown in Figs. 2 and 4, so that there is electric connection between M and N through the mercury, whereas when the ends of the arms are raised from the mercury bath, as seen in Figs. 3 and 5, there is no electric connection between them. The surface of the mercury is covered with glycerine to prevent the oxidation of the metals beneath it.

P and Q are conducting-wires connected, respectively, to the arms M and N. One of these wires—say P—extends to the central telephone-exchange, if the telephone is one of a number in connection with a central office, or in a private line to the magnetic bell, and the other to the ground.

The wires F and L are the line-wires, one of which passes directly to the telephone-receiver R, which hangs in the fork S of the rock-shaft. The plane of the fork is transverse to the arms C M N. To prevent the removal of the receiver from the fork S when the shaft is in the above position, a guard-arm, T, extends outside the receiver, which extends such a distance that the rock-shaft must be turned into the position shown in Figs. 3 and 5 before the receiver can be taken from the fork. The rock-shaft has two flat faces, *b b'*, against which bears a spring, U, whose office is to hold the shaft in either position in which it may be placed.

I have described the plate G as drawn from the galvanic bath into the non-corrosive liquid, and vice versa, by the movement of the rock-shaft arm C. I do not confine myself to the precise means shown for accomplishing these movements; nor do I regard it as essential that the member G of the battery shall be immersed in the non-corrosive liquid when drawn from the acid bath, for it may be simply drawn out of the acid liquid or otherwise removed therefrom without immersion while removed. Either member G or K may be removed to break connection.

I claim—

1. In combination with a box or case, a rock-



shaft or bar mounted therein, a battery-cell in said case, an electrode mounted on said shaft, and a hook for the receiver without the box on said shaft, substantially as and for the purpose set forth.

2. In combination with a telephone, a main circuit, an alarm-circuit, and a rock-shaft, to which one electrode of the battery of the main circuit and the make and break of the alarm-circuit are secured in such manner that the making of one circuit breaks the other, as set forth.

3. The combination, with a telephone and its circuit, comprising a galvanic battery and a separate alarm-circuit, of a rock-shaft to which is secured one electrode of said battery and a pair of arms forming part of the alarm-circuit, and a cup of mercury into which said arms are dipped, for completing the alarm-circuit when the main circuit is broken, substantially as set forth.

4. In combination with a telephone, a battery-cell in two compartments containing exciting and non-corroding fluids, respectively, an electrode mounted on a hinged arm, and a

rock-shaft whereto said electrode is connected, substantially as set forth.

5. In combination with a battery-cell having a movable electrode, a hook or support for the receiver of a telephone, and connection between said hook and electrode, whereby the latter is operated by removing said receiver from and placing it upon said hook or support.

6. The combination of a shaft with arm C, connected to one element of a galvanic battery, and two arms, M and N, a mercury bath, a spring, U, and two faces, *b b'*, on the shaft, upon which the spring bears, substantially as and for the purpose set forth.

7. The combination, with a shaft connected with an element of a galvanic battery, so as to remove the element from the battery by movement of the shaft, a fork on said shaft supporting the receiver, and an arm, T, preventing the removal of the receiver from the fork when the element is removed from the battery.

CHARLES A. A. T. DE ST. AUBIN.

Witnesses:

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GEO. H. KNIGHT.