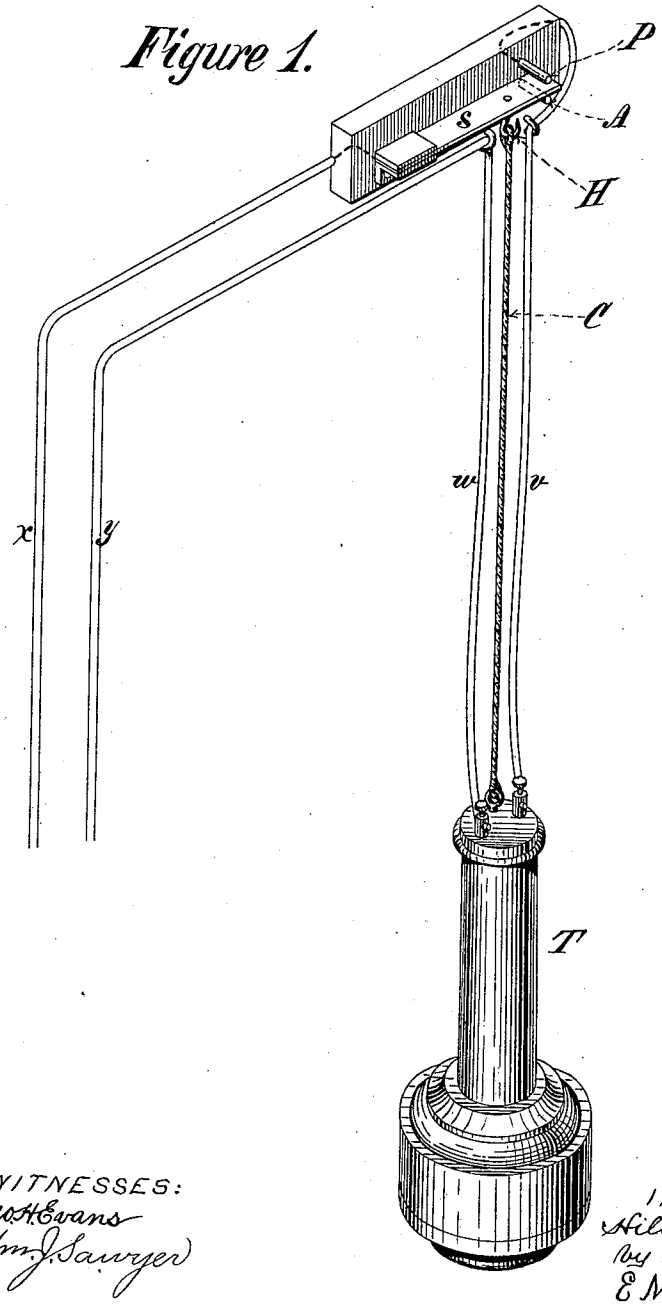
2 Sheets—Sheet 1

H. L. ROOSEVELT.
Telephone Switch.

No. 215,837. Patented May 27, 1879.

Figure 1.



WITNESSES:
Geo. H. Evans
Wm. J. Sawyer

INVENTOR:
Hilborne L. Roosevelt
by his Attorney
E. N. Dickerson Jr.

2 Sheets—Sheet 2.

H. L. ROOSEVELT.
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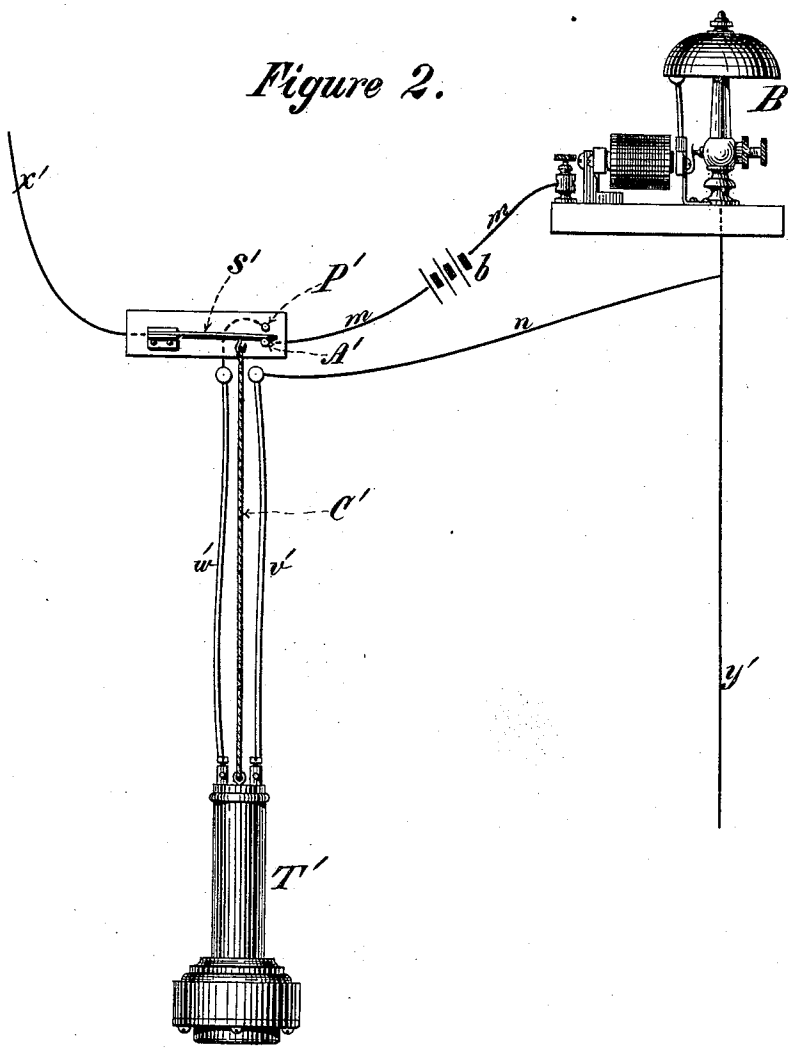
Figure 2.



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UNITED STATES PATENT OFFICE.

HILBORNE L. ROOSEVELT, OF NEW YORK, N. Y.

IMPROVEMENT IN TELEPHONE-SWITCHES.

Specification forming part of Letters Patent No. **215,837**, dated May 27, 1879; application filed October 3, 1877.

To all whom it may concern:

Be it known that I, HILBORNE L. ROOSEVELT, of the city and county of New York, have invented a new and useful Improvement in Telephone-Switches, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

It is a matter of considerable importance in connection with several telegraphic transmitting-instruments, more especially telephones, that the operation of the transmitting-instrument should automatically signal to the receiving-instrument at the other end of the line the fact that a message is about to be transmitted, whereby the receiving-operator is enabled to prepare himself for the reception of such message. This is especially true where the transmitting-operator is not of necessity a skilled person in the electrical art. An instance of this can be readily given: Supposing it is desired to transmit a message to a distant point by means of a telephone or similar transmitting-instrument, it is obviously desirable that the mere fact of the preparation of such transmitting-instrument or telephone for sending the signal should of itself prepare the receiving-operator at the other end of the line for the reception of the message. If, for instance, a telephone were hanging in a position to be raised by the transmitter, it would be very desirable that the mere fact of raising such telephone to the lips should of itself inform the receiving-operator that a message was to be transmitted. My invention is designed to accomplish this result.

Similar letters of reference refer to similar parts in my drawings, in which—

Figure 1 represents the transmitting-instrument; Fig. 2, the receiving-instrument.

In Fig. 1 is represented a telephone, T. This telephone is suspended by means of a cord, C, to a spring-switch, S. This spring-switch S has two contact-points, A P. Attached to the spring S is the hook H, to which the telephone-cord C is attached.

The wires *x y* communicate with the telephone. One of these wires is led directly to the receiving-instrument, the other connects with the ground or the return-wire to the battery.

We will suppose that the wire *x* communicates with the receiving-instrument. This wire is connected to the spring-switch S. The wire *y* connects directly with the telephone by means of its continuation *w*. The upper contact-point, P, connects with the other wire of the telephone by means of the wire *v*. The lower point, A, is a dead-point—that is, it does not communicate with any wire or conductor.

In Fig. 2 is represented the receiving-instrument with its connections. The wire *x'* connects with the spring-switch S', as before. *y'* represents the ground-wire, or it may be a wire connected with *y*. (Shown in Fig. 1.) The contact-point P' connects with one wire of the telephone by means of the wire *w'*. The other side of the telephone, T', connects directly with the ground by means of the wire *v'*, wire *n*, and wire *y'*. The other point, A', of the spring-switch connects by the wire *m* with the bell-call B. In this wire *m* is the battery *b*. The operation of the apparatus can now be understood.

The weight of the hanging telephone, by means of its cord C, draws the spring-switch S downward in contact with the lower points, A, of the spring-switch, Fig. 1. Then the circuit of the battery *b* is broken, for the reason that the spring-switch S is not in communication with any conductor.

If, now, a transmitting-operator raises the telephone T, a circuit will immediately be made as follows: Beginning at Fig. 2, through the wire *y'*, bell-call B, battery *b*, wire *m*, contact-point A', switch S', wire *x'*, spring-switch S, Fig. 1, contact-point P, wire *v*, telephone, wire *w*, and return-wire *y*.

Therefore the bell-call B will sound, and will continue to sound, if it be a reverberator bell-call, till the circuit is broken. This is done by the receiving-operator simply raising the telephone T', Fig. 2, whereby the spring-switch S' comes in contact with the contact-point P, when the circuit will be as follows: Beginning at Fig. 2, wire *y'*, wire *n*, wire *v'*, telephone, wire *w'*, contact-point P', spring-switch S', wire *x'*, wire *x*, spring-switch S, contact-point P, wire *v*, telephone T, wire *w*, and return-wire *y*, which is the circuit necessary for the proper operation of the telephones which do not require a battery for their action.

It is obvious that by this arrangement un-

skillful persons must, as it were, automatically make all the necessary changes and switchings from the signal-battery and bell-call to the transmitting and receiving telephones, and that this is done without the possibility of mistake.

It is evident that the battery *b* might be put at other points in the line without interfering with the action of the apparatus.

It is also evident that both the receiving-instruments might be arranged like that shown in Fig. 2, whereby a message could be transmitted in either direction. In this case a single-stroke bell should be employed. The cord C is shorter than the wires *w* and *v*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a telephone, of a circuit closing or changing portion and screws or points, the circuit-closing portion being arranged to be placed in contact with one screw-point through the influence of the telephone when not being used, and to be placed in contact with the other screw or point when the spring is freed from the influence of the telephone, substantially as described.

2. The combination of a spring-switch, connecting-wire connected therewith, and a transmitting-instrument suspended thereto, substantially in the manner described, whereby the raising of the transmitting-instrument causes the spring-switch to make or break or alter the electric circuit.

3. The combination of a spring-switch and connecting-wire connected therewith, and a transmitting-instrument suspended thereto, combined and connected together, substantially as herein described, whereby a circuit is made through a signaling-instrument when the weight of the transmitting-instrument is on the switch, while the circuit is closed through the transmitting-instrument itself when its weight is removed from the switch.

4. A transmitting-instrument hung on a spring-switch, which spring-switch has two points, the lower one dead, the upper one making a contact with the ground, combined with another transmitting-instrument suspended on a similar switch, which switch has its lower point connected with a signaling-instrument, and its upper point connected to the transmitting-instrument, substantially as described.

5. The combination of a suspended transmitting-instrument, spring-switch, and connecting-cord independent of the connecting-wires, whereby the weight of the transmitting-instrument is taken from the wires, substantially as described.

6. The combination of two telephones, connecting-wire, and battery, and two spring-switches, connected and combined substantially as described, whereby when the weight of the telephones rests on the spring-switches a through circuit is made by means of the battery through the signaling-instrument, while when the telephones are raised a circuit is made through the telephones and the battery is cut out.

7. The combination of a connecting-wire carrying an electric circuit, and attached to the spring-switch having contact-points, and a transmitting-instrument suspended to said spring-switch, connected and combined substantially as described, whereby the weight of the transmitting-instrument upon the switch causes the switch to complete a circuit through itself, and to a ground or a signaling instrument, while when the transmitting-instrument is raised a circuit is made through said transmitting-instrument.

8. A telephone having two connecting conducting-cords and one suspending non-conducting cord, the said non-conducting cord being shorter than the two conducting-cords, whereby the weight of the telephone is taken from the conducting-cords and rests upon the non-conducting cord, substantially as required.

HILBORNE L. ROOSEVELT.

Witnesses:
E. N. DICKERSON, Jr.,
WM. J. SAWYER.