

(No Model.)

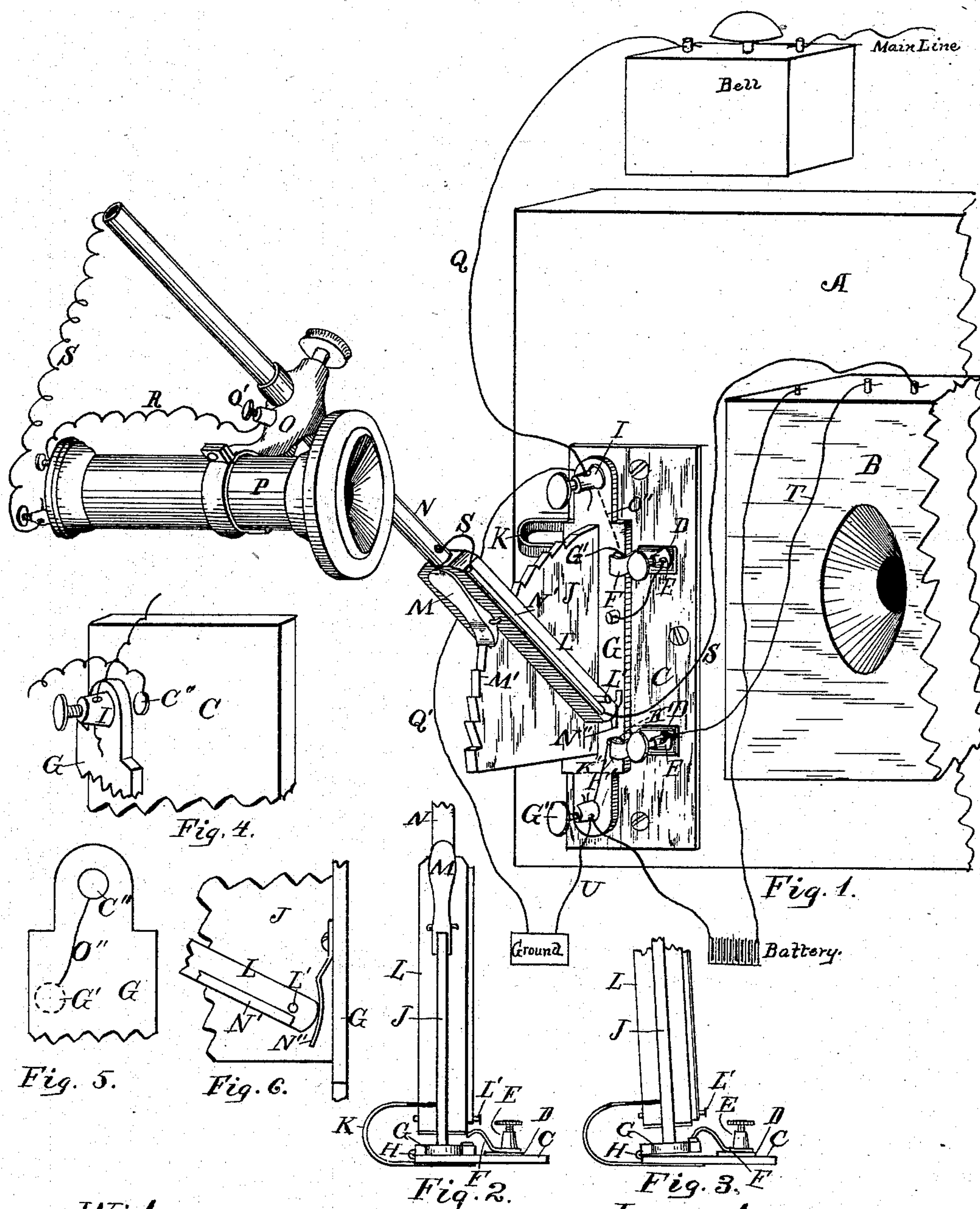
2 Sheets—Sheet 1.

W. H. ECKERT, J. A. SEELY & E. A. ECKERT.

# ADJUSTABLE TELEPHONE HOLDER AND AUTOMATIC CIRCUIT BREAKER.

No. 288,320.

Patented Nov. 13, 1883.



*Witnesses:*

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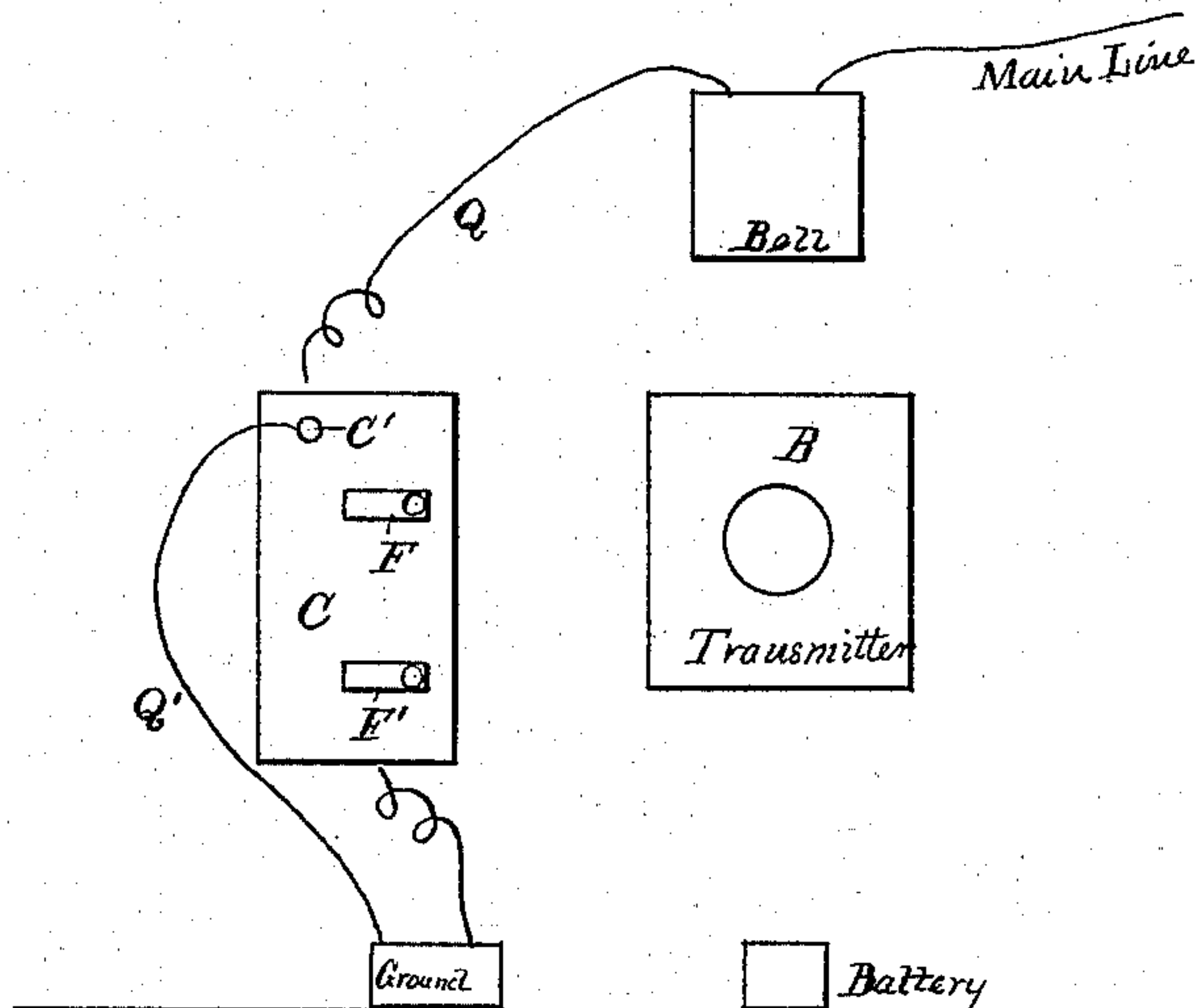


Fig. 7.

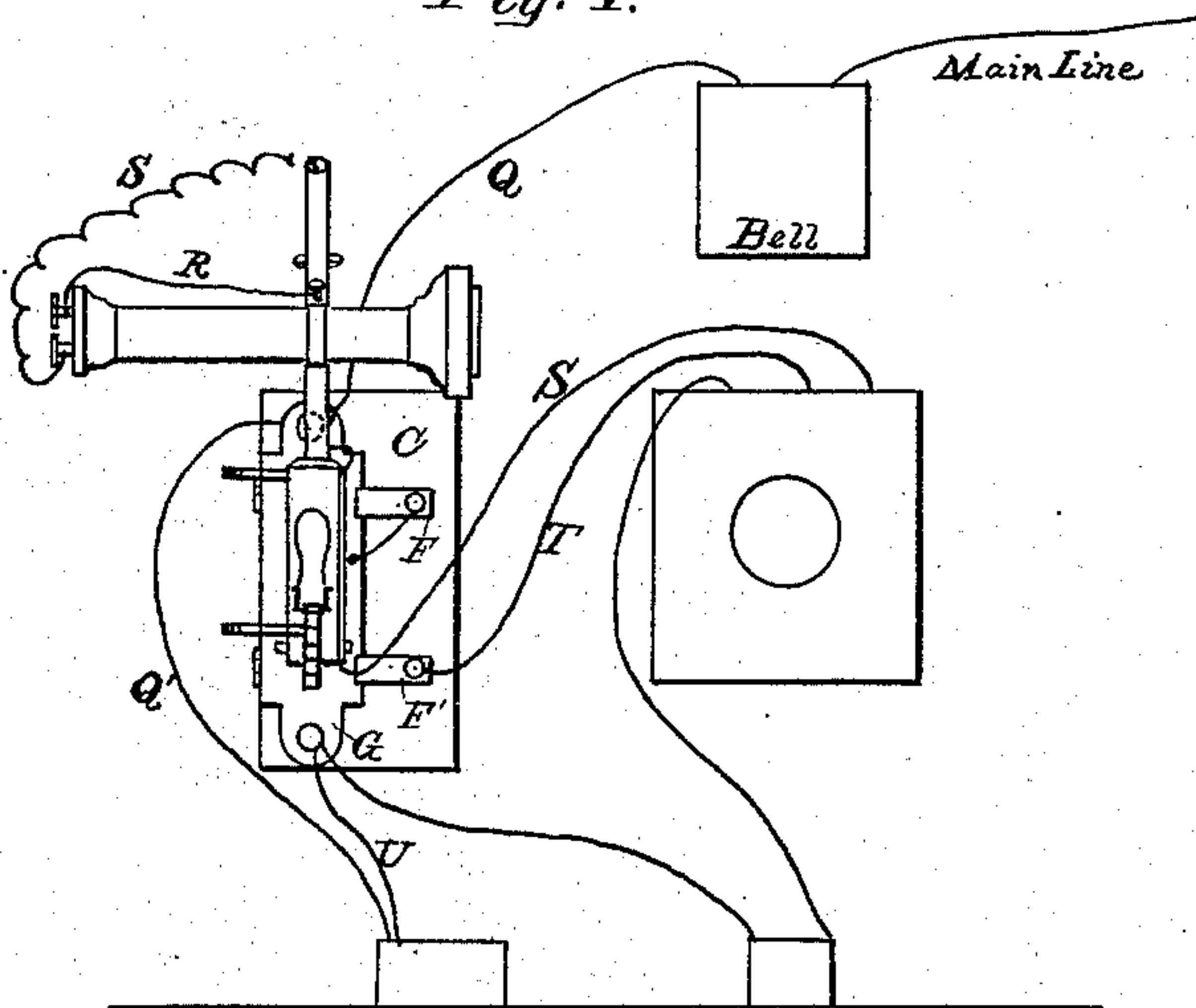


Fig. 8.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. ECKERT, JOHN A. SEELY, AND EDWARD A. ECKERT, OF  
CINCINNATI, OHIO.

## ADJUSTABLE TELEPHONE-HOLDER AND AUTOMATIC CIRCUIT-BREAKER.

SPECIFICATION forming part of Letters Patent No. 288,320, dated November 13, 1883.

Application filed February 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM H. ECKERT, JOHN A. SEELY, and EDWARD A. ECKERT, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in an Adjustable Telephone-Holder and Automatic Circuit-Breaker, which improvement is fully set forth in the following specification and accompanying drawings, in  
10 which—

Figure 1 is a perspective elevation of the adjustable telephone-holder and automatic connections. Fig. 2 is a view of the lower end of the telephone-holder. Fig. 3 is a view of the same, illustrating the side movement of arm to make connections with the transmitter and receiver. Fig. 4 is a perspective view of the upper end of the arm-plate, showing attachment of ground-connection; Fig. 5, view of rear side of the plate to which the telephone-arm is attached; Fig. 6, side view of hinged end of telephone-arm, showing connection with permanent plate; Fig. 7, view of the permanent plate, with adjustable arm removed to  
20 show connection of main line with ground; Fig. 8, front view of adjustable arm and permanent plate with full connections.

In operating telephones connected with a central exchange several serious objections are found to exist, which, if obviated, would greatly enhance the speed and facility with which communications could be made. The most serious of these is the fact that the subscriber is compelled, in answering a call or in ringing up the exchange by the present method, to first remove the receiver from the supporting-hook, thus making connections, and afterward place it to the ear. It frequently happens that the person so using the receiver neglects to replace it on the hook, thus keeping  
35 the circuit open. To obviate this the receiver is secured to an arm which has a slight side-wise or vibrating movement controlled by a spring, so that the person using the instrument, instead of handling the receiving-telephone, simply places his ear against the mouth of the instrument and presses against it slightly, which movement is sufficient to throw the receiver and the transmitter into the cir-

cuit with the line-wire. Again, the receiver thus secured to an arm would not at all times be at the proper elevation for the users; and to obviate this a segment rack-bar is provided, to which the telephone-arm is hinged, a pawl on the arm being used to engage with the rack-bar, so as to enable the user to readily adjust the receiver to suit the height of any one using the instrument. The operator is therefore enabled to use the instrument without touching either the transmitter or receiver, and the moment he leaves the receiver the circuit is closed. It further provides for keeping the current from passing through the transmitter unless when in use, thus avoiding the dangers from lightning.

Referring now to the accompanying drawings, A represents the wall or stationary object to which the transmitter and bell are attached. No change is contemplated in the transmitter B.

C represents a permanent plate, either of metal or wood, secured to the wall at a point near the side of the transmitter B. This plate is provided near its upper end with a button, C', by means of which connection is made with the ground. On the face of the plate C are two metallic fingers, F F', insulated by means of the gutta-percha plates D from the plate C in case the permanent plate C is not composed of insulating material. Binding-posts E are attached to fingers F F', as shown.

G is a metallic plate somewhat narrower than the permanent plate C, having its edge which is farthest from the transmitter flush with the other and hinged thereto, so that the plate G will open and close on the plate C. At the upper end of the plate G is a binding-post, I, which projects through the plate, so as to come in contact with the button C' on plate C.

The ends of the fingers F F', it will be observed, project over the plate G, but are not in contact with the plate except when the plate G is turned on its hinges H. At the point of contact of the upper finger, F, is a button, G', insulated from plate G, and connected by an insulated wire, O'', with the binding-post I. The lower end of the plate G has



also a binding-post, G'', by means of which the plate G is connected with the ground and the battery. The lower binding-post, G'', as well as the binding-post I at the upper end of plate G, is insulated from said plate. At the point of contact of finger F' with the plate G is an insulated button, K', connected with binding-post G'' by means of the insulated wire K''.

The plate G has permanently attached thereto and projecting therefrom a segment of a rack-bar, J. Curved springs K, with one end attached to the permanent plate beneath, have their opposite ends resting against the side of the rack, so that the tension of the springs forces the plate G down onto the permanent plate C.

Hinged to the segment J at L' is an arm, L, and a pawl, M, secured to this arm, engages with the teeth M', so that the operator is enabled to raise or lower the arm and secure it at any desired elevation. The upper end of this arm N is tubular, as shown; or the entire arm may be tubular, so as to be used for conducting insulated wires. The tubular form of this arm is not, however, an essential feature of our present invention, since it is obvious that the arm may be in the form of a solid bar or rod, and the wires otherwise disposed than through the arm. The form here shown is, however, more preferable, and for the present purpose will best illustrate the operation about to be described. The small tube N' on the lower solid limb of the arm is here designed as a continuation of the tube N above. The arm thus equipped has a rubbing-connection at its lower end with the hinged plate G by means of the spring N'', as shown more clearly in Fig. 6.

The receiver P is attached to the tubular arm N by means of the sliding arm O, enabling the operator to adjust the telephone at any point to or from the transmitter. It will thus be observed that the hinged arm has three-fold uses: first, to make and break connections by a side movement of the head without being touched by the hand; second, to be adjusted for the height of the operator; and, third, to enable users to move the receiver a limited distance to or from the transmitter.

We will now describe in detail the circuit-connections, whereby we dispense with the automatic circuit-breaker or switch in the bell, as now used, to cut out the transmitter when messages are not being sent.

In Fig. 1 the wire Q proceeds from the bell, which is directly connected with the main line, to the binding-post I on hinged plate G and permanent plate C. The current passes through the wire Q', which is connected with button C', to the ground. The circuit is thus closed. When a message is to be transmitted, the ear of the operator is placed against the mouth of the receiver, and a slight movement of the head tilts the arm and plate to assume the position shown in Fig. 3, thus bringing the raised part of the hinged plate in contact

with the fingers F F', the former of which, F, strikes the button G', thereby making connection with the line-wire Q, since it will be noted that the contact between the binding-post I and button C' was broken by the raising of plate G. The current, therefore, passes through the connecting-wire E to the hinged plate G, and thence up through rod N to arm O, binding-post O', thence to telephone through line S, which passes through the tubular arm N and tube N', and thence to the transmitter, from which it proceeds, through line T, to finger F', then through wire K to the ground, over line U. When by the motion of the head the receiver is released and the hinged arm and plate permitted to return to the position shown in Figs. 1 and 2, the transmitter and receiver are again cut out of the circuit, as before.

It will be observed by this system the current passes through the bell and the receiver before passing through the transmitter, and, further, that all the apparatus in the bell-box except the engine and magnets are dispensed with. The improvement herein shown is interposed at a point between the bell and the transmitter, thus making a separate complete apparatus in itself.

It is obvious that the hinged arm containing the receiver might be attached to either the transmitter or the bell-box to accomplish the same purpose; but such disposition is contemplated in the spirit of our invention, and is only one of the various forms that may be adopted.

We are aware that it is not new, broadly, to secure a receiver to a hinged arm, whereby said arm, when raised or lowered, opens and closes the telephone-circuit; but in such devices as heretofore made the operator is compelled to first raise the receiver and the arm to adjust it before communicating, and is also required to release the arm and return it to its original position after the message has been delivered. It is obvious, therefore, that the operator will be as likely to neglect to turn down the arm as to hang the receiver on the hook. In either case the hands must be employed both before and after the message is transmitted. In our device this is absolutely avoided, since the transmitter is thrown into the circuit the moment the head moves the receiver-arm, and automatically cut out when the operator leaves the instrument.

Having described our invention, what we claim is—

1. A telephone-holder composed of a hinged plate, G, having permanently secured thereto and projecting therefrom a rack-bar segment, J, in combination with an arm, N L, carrying a receiver, P, the said arm being held at any desired angle by means of the pawl M, substantially as and for the purpose herein shown and set forth.

2. A telephone-holder having an arm to which the receiver is secured, hinged to a sidewise-vi-



brating hinged base-plate, in combination with springs K, which hold the plate in proper position, and with the fingers F F', so as to form contact-points when the plate is raised on the hinges, substantially as and for the purpose herein set forth.

3. A telephone-holder composed of a hinged and adjustable arm, N, combined with the plate G, carrying the binding-post I, button C', fingers F F', and receiver P, adjustably secured to the arm N, and a transmitter and battery, whereby the said arm may be adjusted to the height of the operator and have a side vibratory movement, and the ground-connections opened or closed and the receiver thrown in or out of the circuit, substantially as described.

4. A telephone-holder consisting of an adjustable arm hinged to a base-plate and having a side vibratory movement, and the binding-post I on the said base-plate, the button C', and the fingers F F' on the permanent plate C, combined with a telephone, substantially as described.

5. In a telephonic apparatus, the adjustable

and swinging support pivoted to swing in both directions, combined with the means, substantially as described, for completing the circuit.

6. In a telephone-holder, the base-plate C, having the button C', to form connection with the ground, the fingers F F', and the springs K K, in combination with a plate, G, hinged thereto but insulated therefrom, having the binding-post I for main-line connections, and button G', in connection with said binding-post, and the binding-post G' for making connections with the ground, and provided with the rack-bar segment J, having hinged thereto the arm L N, supporting the receiver P, substantially as and for the purpose herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands, this 27th day of January, 1882, in the presence of witnesses.

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JOHN A. SEELY.

EDWARD A. ECKERT.

Witnesses:

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