

No. 616,718.

Patented Dec. 27, 1898.

C. T. MASON.
TELEPHONE GRAVITY SWITCH.

(Application filed May 3, 1898.)

(No Model.)

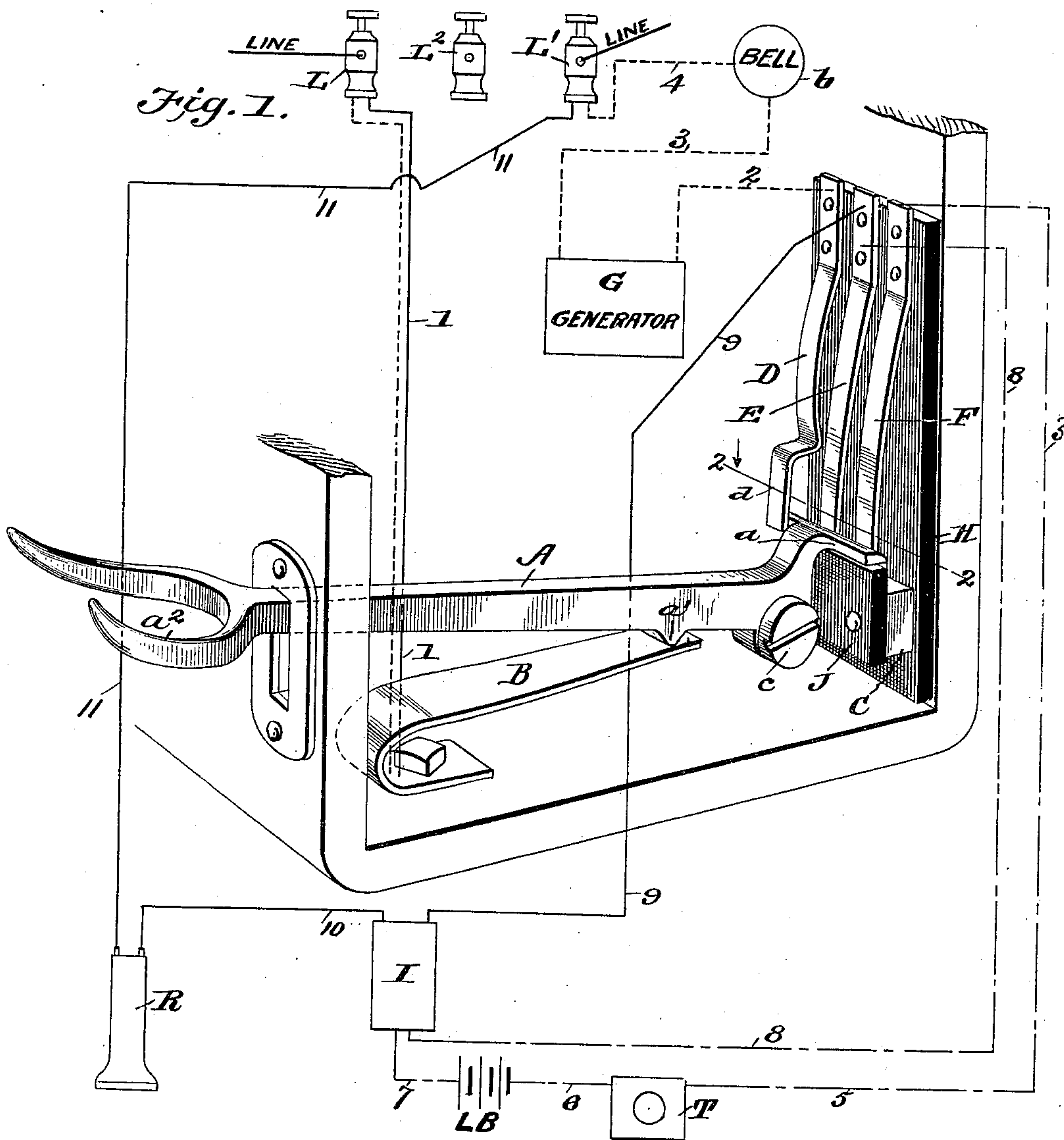
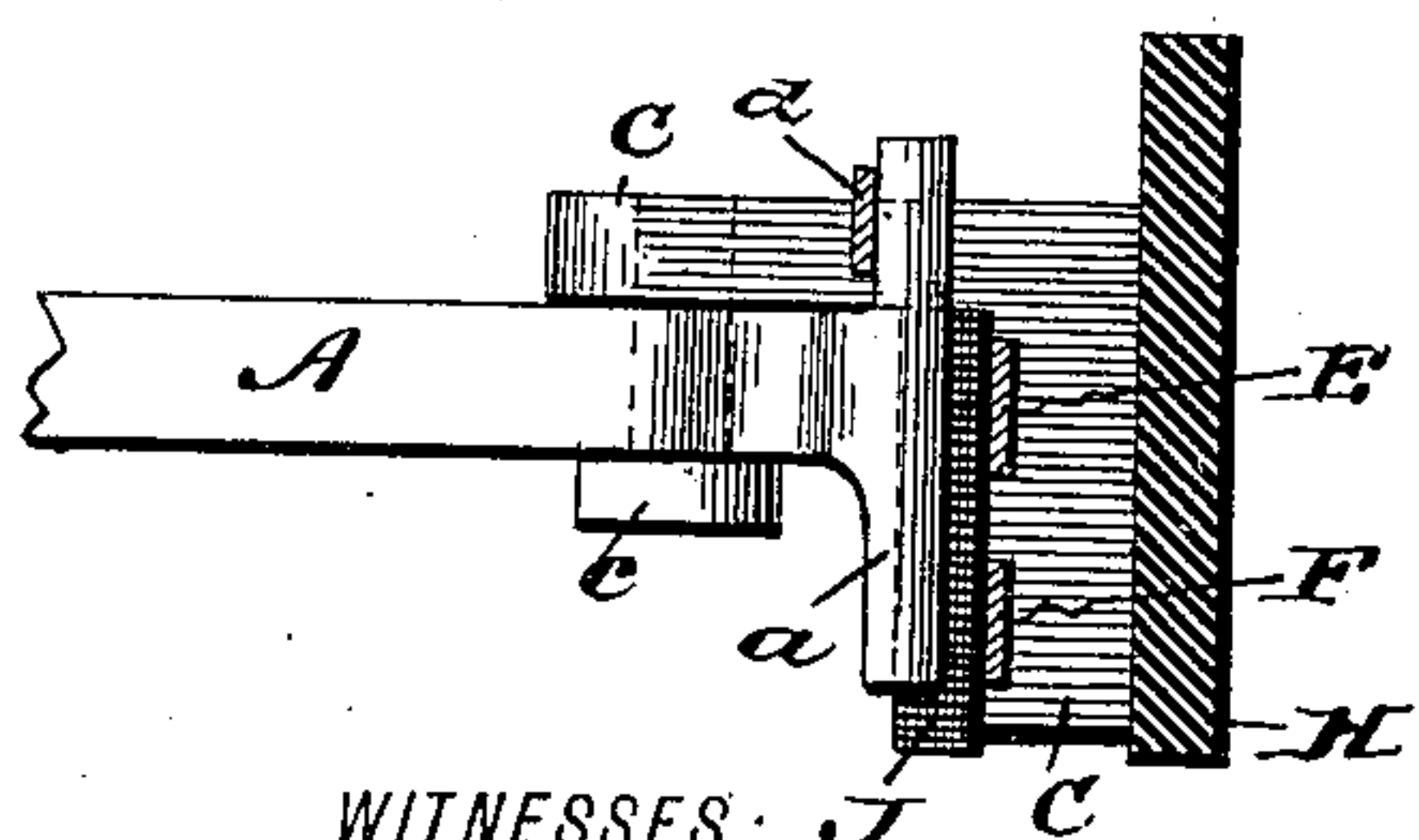


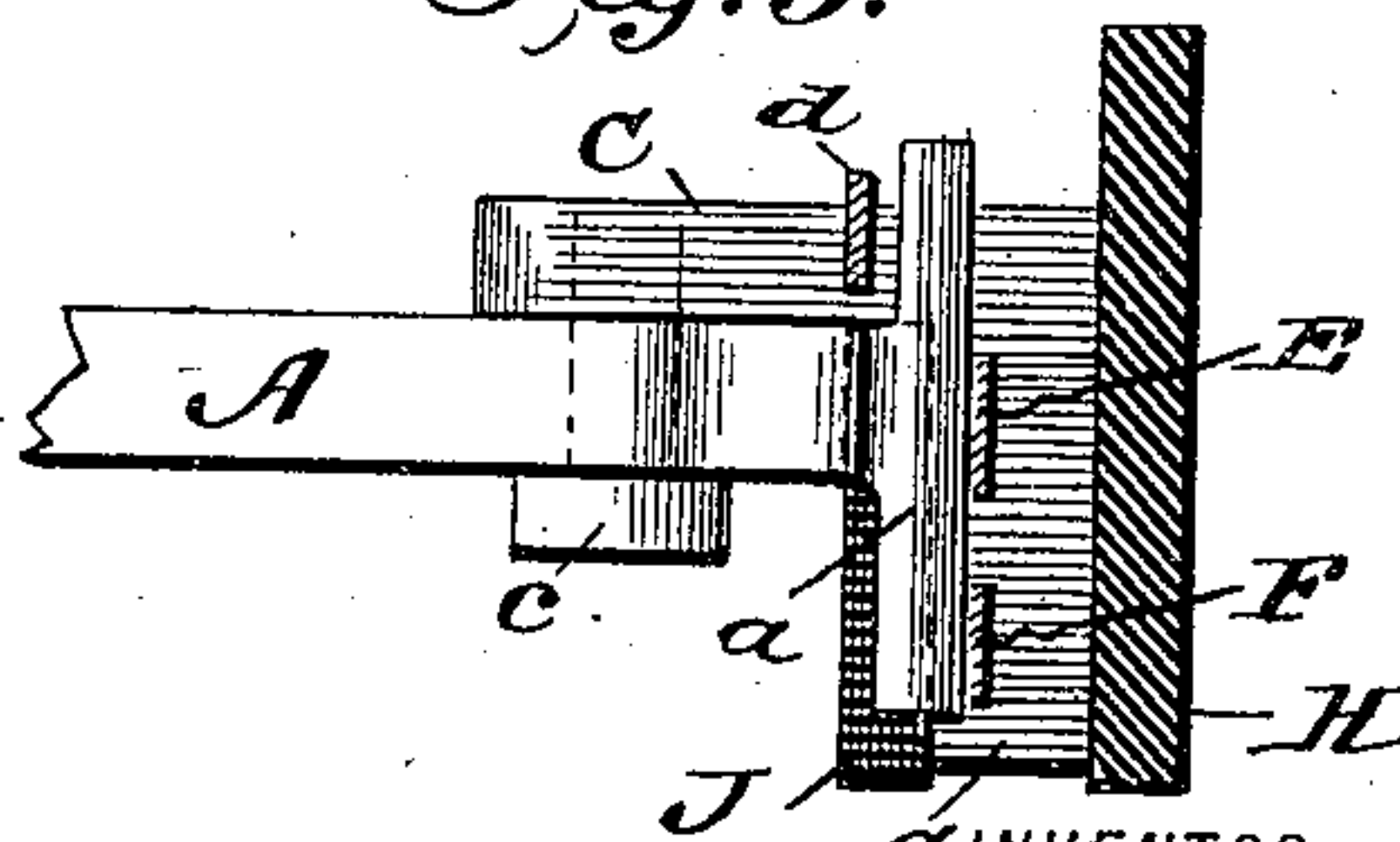
Fig. 2.



WITNESSES:

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Fig. 3.



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CHARLES THOMAS MASON, OF SUMTER, SOUTH CAROLINA, ASSIGNOR TO
THE TELEPHONE MANUFACTURING COMPANY, OF SAME PLACE.

TELEPHONE GRAVITY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 616,718, dated December 27, 1898.

Application filed May 3, 1898. Serial No. 679,627. (No model.)

To all whom it may concern:

Be it known that I, CHARLES THOMAS MASON, of Sumter, in the county of Sumter and State of South Carolina, have invented a new and useful Improvement in Telephone Gravity-Switches, of which the following is a specification.

My invention relates to that form of telephone gravity-switch in which a lever is provided with a forked end for sustaining the telephone-receiver and the weight of which receiver is made by the act of hanging up or taking down the same to adjust the circuits through the agency of the three point-contacts, so as to be either in position for receiving a call or for talking, as the case may be.

My invention consists in the special construction and arrangement of the parts of the switch, whereby its construction is simplified and its action rendered convenient and effective, as will be hereinafter more fully described with reference to the drawings, in which—

Figure 1 is a perspective view of the switch with a diagram of circuits connecting with the same. Fig. 2 is a cross-section on line 2 2, showing the position of parts when the receiver is on the hook in position for receiving a call; and Fig. 3 is a similar view showing the position of parts for talking or when the receiver is off the hook.

In the drawings, A represents the gravity-switch lever, having at its outer end a forked seat a^2 to support and hold the receiver. This lever is fulcrumed by means of a screw c to a metal bracket C, fastened to the inner side of a non-conducting plate H. This plate is secured to the inner side of the telephone-case and bears three spring-contacts D E F, arranged vertically in substantially parallel relation. The spring D at its lower end is offset at d , and between this offset and the springs E and F there plays the T-shaped head a of the switch-lever A.

J is a non-conducting plate secured to the base of the bracket C and forming a non-conducting rest for the lower ends of the springs E and F to bear against whenever the T-shaped head a is not pressing against them.

On the under side of the lever A there is formed a teat or projection a' , which rests upon a bent spring B, screwed down onto the bot-

tom of the case. The tension of this spring serves when the receiver is off the hook to throw the hook up and force the head a away from the spring-contact D and into contact with the springs E and F, as shown in Fig. 3. The tension of this spring is such, however, that when the receiver is on the hook the weight of said receiver overbalances said tension, and the head a of the lever is taken away from the spring-contacts E and F and is made to bear against D.

L and L' represent binding-posts that receive the line-wire, and L² is a ground connection for a lightning-arrester. G is the magneto-generator, R the receiver, I the induction-coil, T the transmitter, L B the local battery, and b the call-bell, all of which are connected in circuits, as shown.

The operation of the switch is as follows: When the receiver is on the hook a^2 of the lever, the head a of the lever bears against the contact-spring D (see Fig. 2) and is removed from E and F, which now rest against the non-conducting plate J, but still under tension. In a call coming now over the line at L the circuit is made as follows: from 1 to spring B, to lever A, spring-contact D, wire 2, generator G, wire 3, bell b , wire 4, and binding-post L' to line. The bell b will therefore be rung. The subscriber then taking the receiver R off the hook a^2 , as shown in Figs. 1 and 3, spring B forces up lever A, throws its head a away from contact D, (cutting out bell and generator,) and the head a presses against and establishes contact between springs E and F. The following circuits are thus made for talking: The primary circuit from local battery L B is closed through wire 7, primary of induction-coil, wire 8, contact-spring E, head a of lever, contact-spring F, wire 5, transmitter T, to the other pole of local battery. The secondary circuit from induction-coil passes on one side through wire 10, receiver R, wire 11 to line L', and from the other side of induction-coil through wire 9, contact-spring E, lever A, spring B, and wire 1, to the other binding-post L of the line. It will thus be seen that the metal head of lever A is in electrical connection by spring B and wire 1 with the same line-terminal L for both positions of the lever, and both the ring-

ing and talking circuits are made through said lever, the ringing-circuit by spring D and the talking-circuit by spring E.

One great advantage of this switch is that the springs D, E, and F are always under tension. Thus while spring D trends toward the head *a* the inner bend of spring D, which rests against the non-conducting plate H, limits the movement of the end *d* toward head *a*, and while springs E and F trend toward the head *a* on the opposite side the non-conducting block J limits the movement of the ends of springs E and F toward the said head *a*. This causes a very slight and definite movement of the head *a* to positively and certainly work the switch-springs.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a telephone-switch, the combination of the gravity-lever having a support for the receiver and a head or projection, means for lifting the gravity-lever upwardly, and for electrically connecting the gravity-lever to the same line-terminal for both the ringing and talking circuits, two insulated contact-springs arranged on one side of the head of the lever to make electrical contact with the head when the receiver is off the lever and to press with a constant tension toward the head, one of said springs closing the primary and the other the secondary circuit through the lever, a fixed non-conducting rest-block

holding said springs insulated and in a definite position to the head of the gravity-lever when said head is out of contact with said springs from the weight of the receiver on the lever, and another insulated contact-spring arranged upon the opposite side of the head of the gravity-lever and having a trend toward the head and a limited range of movement toward the same to come in electrical contact with the head and close the ringing-circuit when the receiver is on the lever substantially as shown and described.

2. The combination of a gravity-lever A having a T-head *a* on the opposite side of its fulcrum from its receiver-support, the lifting-spring B, means for electrically connecting the gravity-lever to the same line-terminal for both the ringing and talking circuits, two insulated contact-springs E F arranged on one side of the head *a* and trending toward the same, a fixed non-conducting rest-block J arranged on the same side of springs E F as the head and limiting the motion of the springs toward the head, and a third spring D arranged on the opposite side of the head from springs E F and having a trend and a limited movement toward the head substantially as and for the purpose described.

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Witnesses:

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