

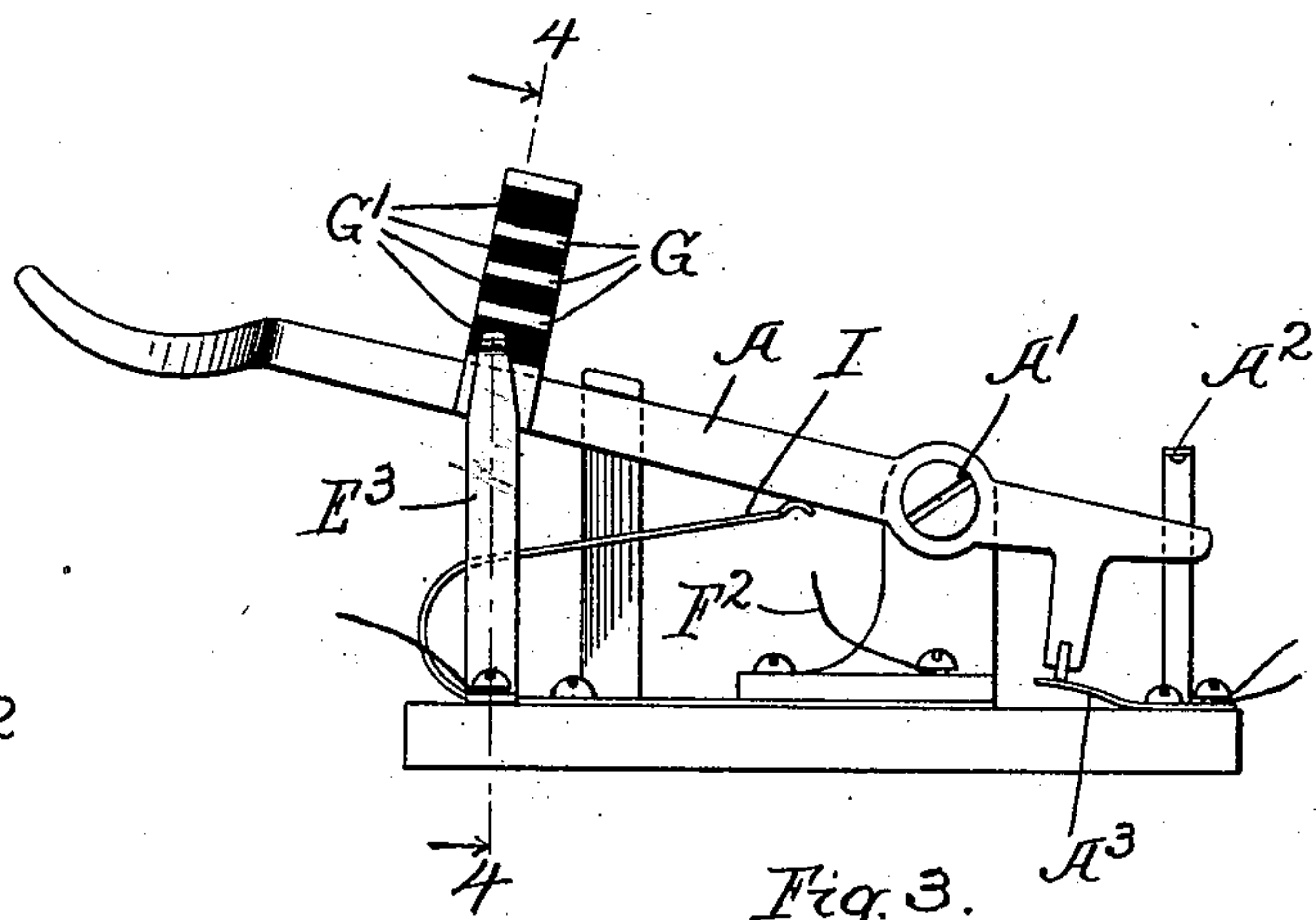
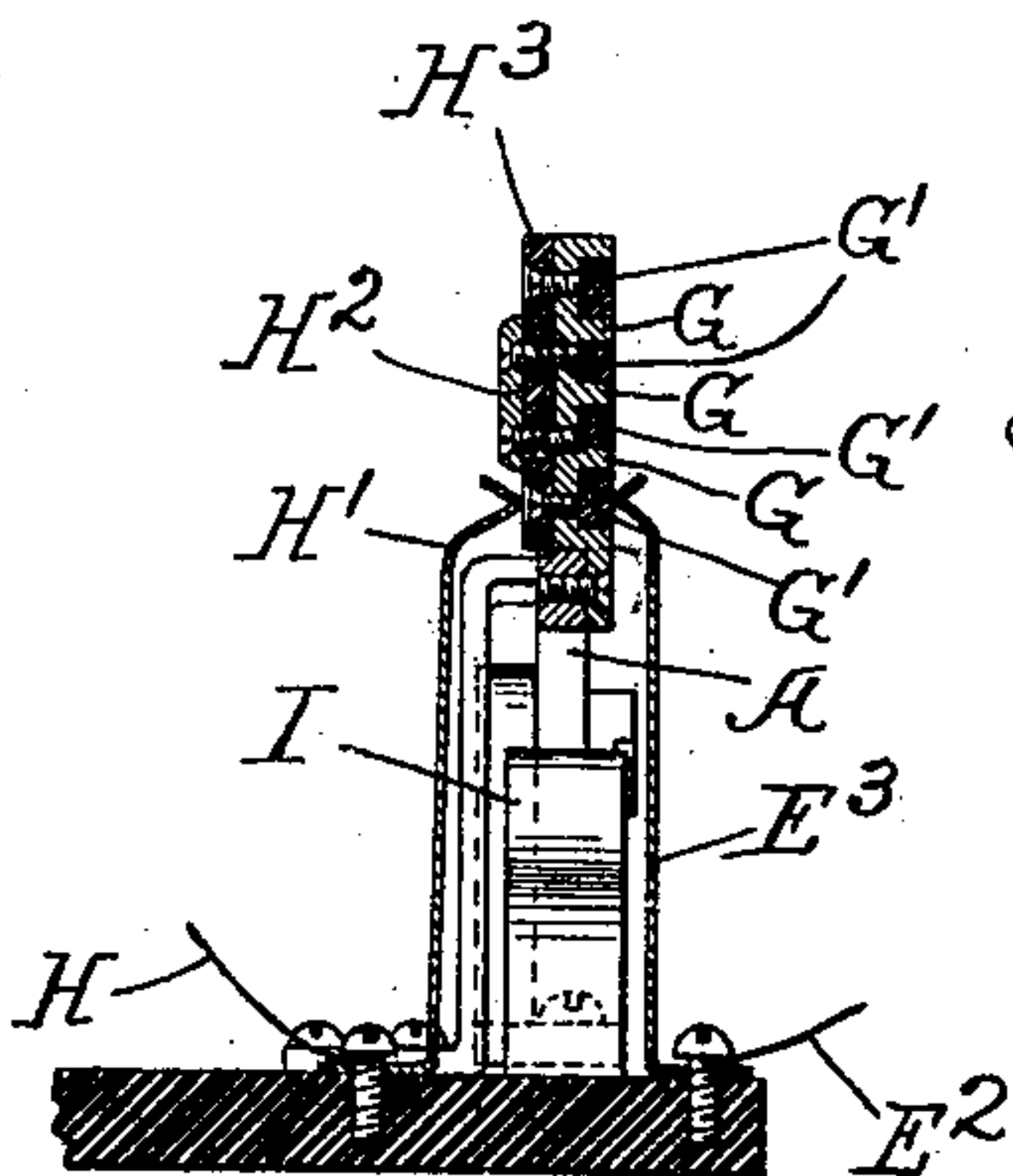
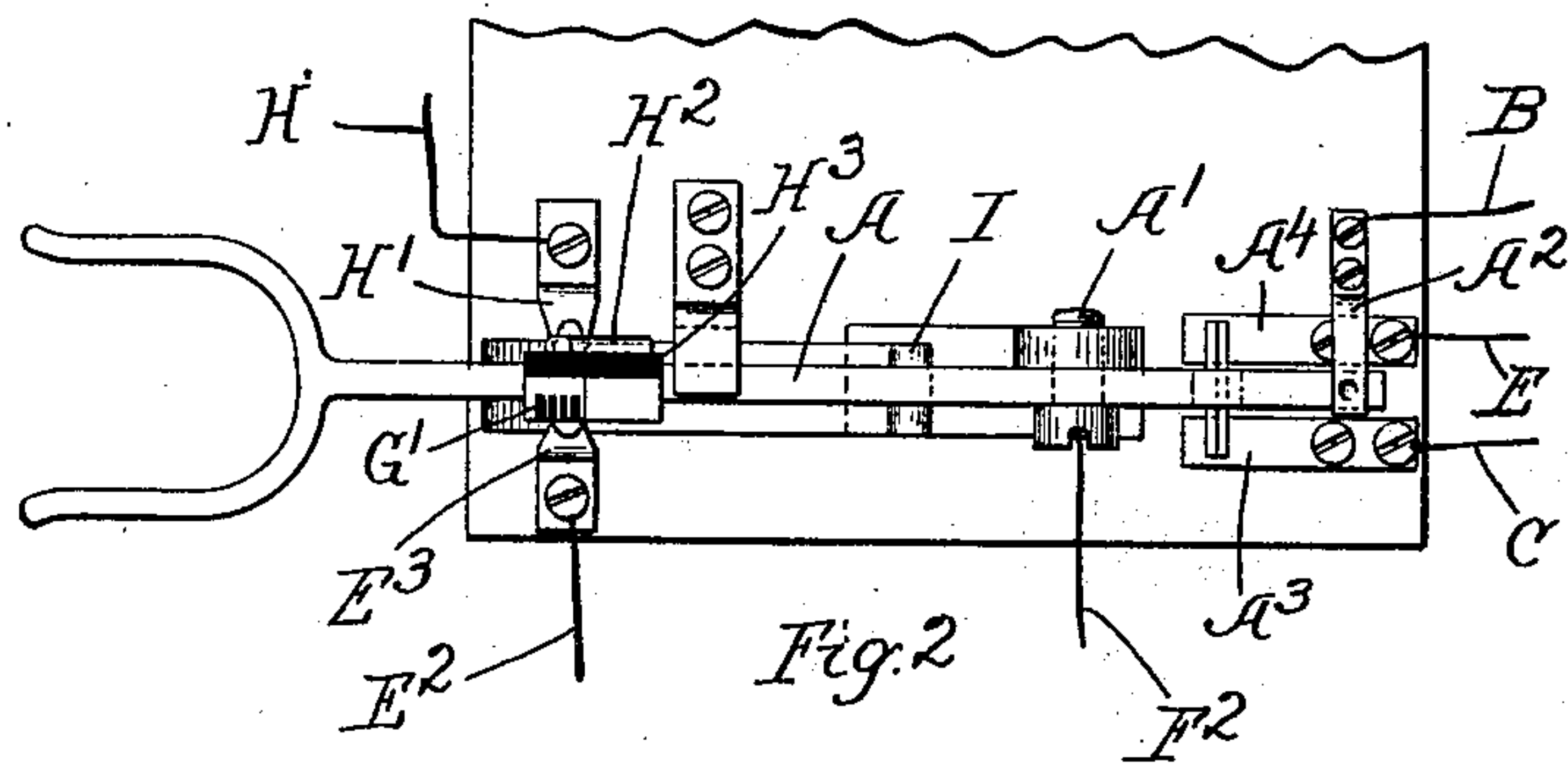
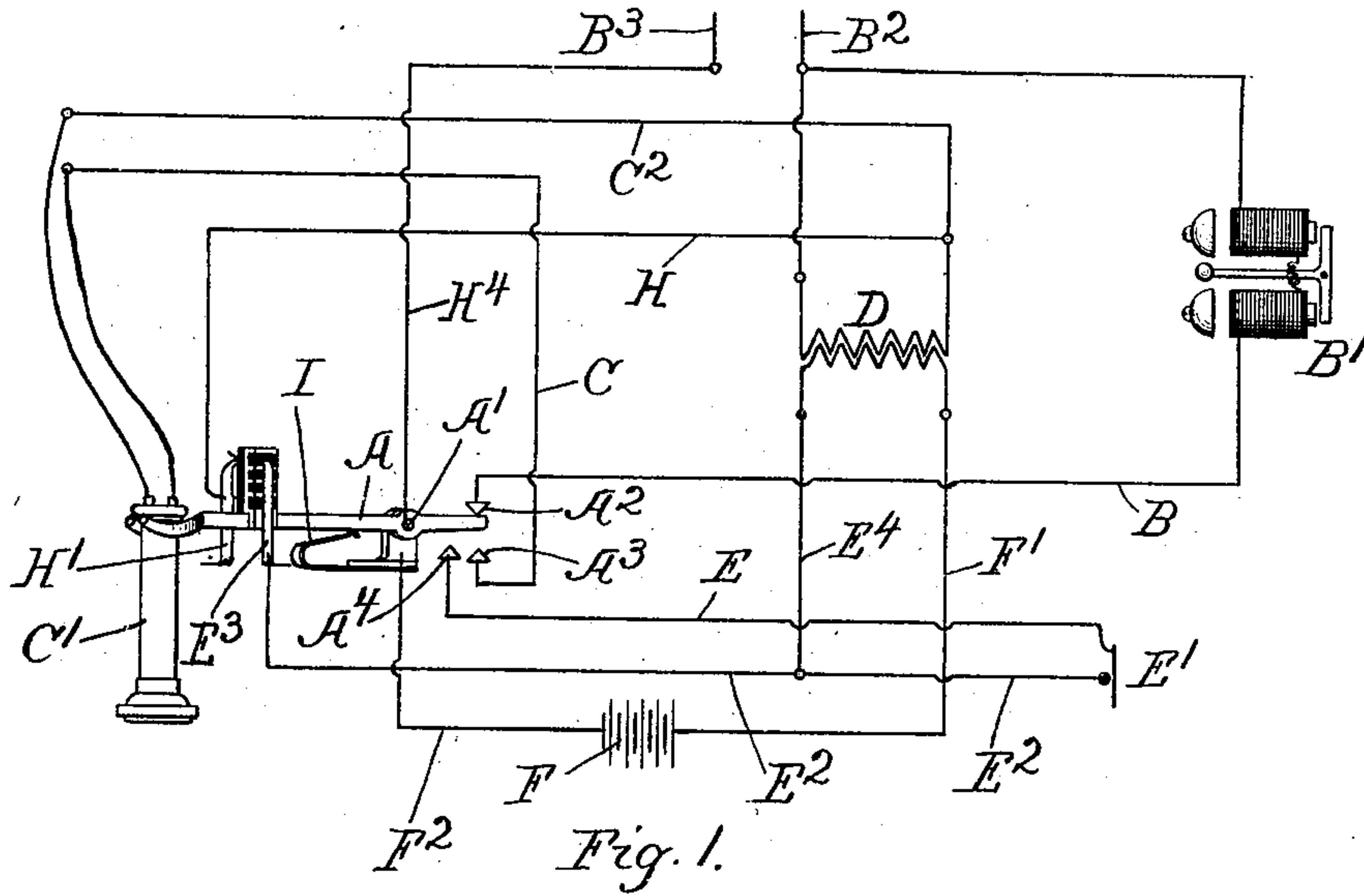
No. 668,653.

Patented Feb. 26, 1901.

W. O. MEISSNER.
TELEPHONE SIGNALING DEVICE.

(Application filed July 5, 1898.)

(No Model.)



Witnesses.

Edward T. Wray.
Donald M. Carter,

Inventor.

William O. Meissner.
by James W. Parker, atty.

UNITED STATES PATENT OFFICE.

WILLIAM O. MEISSNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO PETER C. BURNS, OF SAME PLACE.

TELEPHONE SIGNALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 668,653, dated February 26, 1901.

Application filed July 5, 1898. Serial No. 685,078. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. MEISSNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Telephone Signaling Devices, of which the following is a specification.

My invention relates to signaling devices for telephones, and has for its object to provide a new and improved device of this description.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a diagrammatic view of a portion of a telephone system embodying one form of my invention. Fig. 2 is a plan view of the receiver-hook and associated parts. Fig. 3 is a side elevation of the device shown in Fig. 2. Fig. 4 is a section on line 4 4, Fig. 3. Like letters refer to like parts throughout the several figures.

Referring now to Fig. 1, I have shown diagrammatically the several parts of a telephone system at one end of the line. In this view the receiver-hook A is pivoted at A' and is provided with a suitable actuating-spring I, which moves it to a predetermined position when the receiver is removed therefrom. Associated with this receiver-hook are the contacts A² A³ A⁴, so positioned that when the receiver is in position the contact A² engages the receiver-hook and when the receiver is removed the contacts A³ and A⁴ engage said hook, while the contact A² is free therefrom. The contact A² is connected by conductor B with the signaling device B', said signaling device being connected with the line-wire B². The contact A³ is connected by conductor C with the receiver C', which in turn is connected by conductor C² with the secondary coil of the induction-coil D, said induction-coil being connected with the line-wire B². The contact A⁴ is connected by conductor E with the transmitter E', said transmitter being connected by conductor E² with the contact E³, associated with the receiver-hook, and by the conductor E⁴ with the primary coil of the induction-coil D. A battery or other source of electrical supply F is connected with the primary coil of the induction-coil by conductor F' and with the re-

ceiver-hook A by conductor F². Associated with the receiver-hook is a suitable circuit-varying device, which varies the circuit when the receiver-hook is moved, so as to vary the current in the primary coil of the induction-coil, and thus induce a current in the secondary coil of said induction-coil and actuate the signal of the party called. It is of course evident that constructions for producing this result may be of various forms, one of which I have illustrated in the drawings. In the construction shown I associate with the receiver-hook a series of contacts G, separated by the insulation G', the contacts G being opposed to the contact E³. Any suitable construction may be used for this purpose. As illustrated, the several contacts are connected with the receiver-hook A. It is of course evident that any number of these contacts may be used, and I do not limit myself in any manner in this respect. I prefer to have several of these contacts, so that there will be several makes and breaks in the circuit during the movement of the receiver-hook, thus producing a sufficient actuation of the signaling device to attract the attention of the called party. I prefer also to cut out the receiver, for example, or other instruments at the signaling-station while the signaling apparatus is operating. As illustrated in the drawings, I obtain this result by means of the conductor H and the contact H', the parts so arranged that the desired instruments are cut out while the contact E³ is moving over the contacts G.

As illustrated in Figs. 2, 3, and 4, wherein I have shown the receiver-hook mounted upon a suitable base, a plate H² is electrically connected with the contacts G, and the parts are so arranged that the contact H' is in contact with the plate H² while the contact E³ is moving over the contacts G. When the receiver-hook is at either limit of its movement, the contact H' engages the insulation H³. The hook A is connected by conductor H⁴ with the line-wire B². When the receiver C' is removed from the hook A, said hook is moved by means of the spring I, thus automatically operating the signal.

By means of the construction herein shown I am enabled to do away with the ringing apparatus, such as a magneto or the like, and

I use the induction-coil in the transmitter-circuit for producing the ringing-current.

I have described in detail a particular construction, so as to make my invention clear; but it is of course evident that the several parts may be varied in form, construction, and arrangement without departing from the spirit of my invention, and I therefore do not wish to be limited to the construction shown.

The use and operation of my invention are as follows: When the parts are in the position illustrated in Fig. 1 and the signaling device at the other end of the line is operating, the current will pass along the line B² through the signaling device B', thence through conductor B, contact A², and conductor H¹ to line-wire B³. If it is desired to call up central, for example, or another subscriber, the receiver C' is removed from the hook A. The spring I then forces the hook A and the contacts G upwardly, so as to move the contact E³ past the contacts G. This movement successively makes and breaks a circuit through the primary coil of the induction-coil and the source of electrical supply, which may be traced as follows: from the source of electrical supply F by conductor F' to the primary coil of the induction-coil D, thence by conductor E⁴ and conductor E² to contact E³, and thence through contacts G, hook A, and conductor F² back to the source of electrical supply. The varying of this circuit generates a series of impulses or currents in the secondary coil of the induction-coil, which may be traced as follows: from the induction-coil through conductor H to contact H', and thence through plate H², contacts G, hook A, and conductor H¹ to line-wire B³. The current then passes out on the line to the signaling device of the called party, which circuit is not herein shown. The current then passes back through line-wire B² to the secondary coil of the induction-coil. It will be seen that the contact H' and associated parts form a shunt during the operation of the circuit-varying device which cuts out the receiver C'. When the hook A has completed its movement, as shown, for example, in Fig. 3, the hook engages the contacts A³ and A⁴ and completes the talking-circuit. When the parts are in this position, the circuit through the transmitter may be traced as follows: from the source of electrical supply F through conductor F' to the primary coil of the induction-coil, thence through conductors E⁴ and E² to transmitter E', thence through conductor E to contact A⁴, and thence through hook A and conductor F² back to the source of electrical supply. The line-circuit will be traced as follows: from the secondary coil of the induction-coil through conductor C², receiver C', conductor C, contact A³, hook A, conductor H¹ to line-wire B³, thence to the instrument of the called subscriber, and thence back through line-wire B² to the induction-coil. After the telephone has been

used sufficiently the receiver is placed upon the hook A and moves it downwardly, again bringing the contacts G successively in circuit with the contact E³ and actuating the signaling device so as to ring off.

It will be seen that by this arrangement I have an automatic signaling device actuated at the proper times by the ordinary use of the telephone.

I claim—

1. The combination in a telephone system of an induction-coil, a receiver, a transmitter, a signaling device and a source of electrical supply connected together by suitable conductors, a movable hook for said receiver, and a circuit-varying device associated with said hook so as to be operated by the movement thereof, said circuit-varying device adapted to be connected in circuit with the primary coil of the induction-coil and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

2. The combination in a telephone system of an induction-coil, a receiver, a transmitter, a signaling device and a source of electrical supply connected together by suitable conductors, a movable hook for said receiver, a circuit-varying device associated with said hook so as to be operated by the movement thereof, said circuit-varying device adapted to be connected in circuit with the primary coil of the induction-coil, and a shunt for cutting said receiver out of circuit while the circuit-varying device is operating and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

3. The combination with a telephone system of a signaling device, comprising a circuit-varying device in circuit with the primary coil of the induction-coil of the system, means for moving said circuit-varying device so as to vary the current in the primary coil, thus inducing a current in the secondary coil which actuates the signaling device, and a shunt associated with said circuit-varying device and adapted to cut the receiver out of circuit while the circuit-varying device is being operated and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

4. A telephone system, comprising an induction-coil, a source of electrical supply, a receiver, a transmitter and a signaling device suitably connected in circuit, a movable support for said receiver, a circuit making and breaking device associated with said movable support comprising a series of contacts supported upon said arm and separated by insulating material and adapted to be connected in circuit with the primary coil of the induction-coil, said circuit making and breaking device adapted to be actuated by the movement of the support when the re-

ceiver is removed therefrom, so as to make and break the circuit in the primary coil of the induction-coil and induce a signaling-circuit in the secondary coil of said induction-coil and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

5. A telephone system, comprising an induction-coil, a source of electrical supply, a receiver, a transmitter and a signaling device suitably connected in circuit, a movable support for said receiver, a circuit making and breaking device associated with said movable support and consisting of a stationary contact opposed to a series of movable contacts attached to said arm, said contacts adapted to be connected in circuit with the primary coil of the induction-coil, said circuit making and breaking device adapted to be actuated by the movement of the support when the receiver is removed therefrom, so as to make and break the circuit in the primary coil of the induction-coil and induce a signaling-circuit in the secondary coil of said induction-coil, and a shunt-circuit operated by the movement of said support and adapted to cut the transmitter out of circuit while the circuit making and breaking device is in operation and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

6. The combination with a telephone system, comprising an induction-coil, a source of electrical supply, a receiver, a transmitter and a signaling device, of one or more contacts mounted upon the receiver-hook adapted to be electrically connected with the induction-coil of the system, an opposed contact also connected in circuit with said induction-coil, the parts so arranged that when the receiver is removed from the hook the circuit in the primary coil of the induction-coil is alternately made and broken, so as to induce a signaling-circuit in the secondary coil and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

7. The combination with a telephone system, comprising an induction-coil, a source of electrical supply, a receiver, a transmitter and a signaling device, of one or more contacts mounted upon the receiver-hook adapted to be electrically connected with the induction-coil of the system, an opposed contact also connected in circuit with said induction-coil, the parts so arranged that when the receiver is removed from the hook the circuit in the primary coil of the induction-coil is alternately made and broken, so as to induce a signaling-circuit in the secondary coil, and a shunt-circuit actuated by the movement of said receiver-hook and adapted to cut the receiver out of circuit while the circuit making and breaking device is being operated and a series of insulated contacts on a movable arm

adapted to successively engage an opposed contact as the arm is moved.

8. A telephone system, comprising a signaling-circuit associated with a supporting-hook for the telephone-receiver, said signaling-circuit adapted to be actuated by the movement of said hook and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

9. As an article of manufacture, a device for telephone systems, comprising a pivoted arm upon which the receiver is supported, a series of contacts connected with said arm so as to be moved thereby and adapted to be connected in circuit, and an opposed contact adapted to successively engage the contacts on said arm when the arm is moved, and means for moving the arm when relieved of the weight of the receiver and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

10. A telephone system, comprising a source of electric supply, a receiver, a transmitter and a signaling device suitably connected in circuit, a movable support for said receiver, a series of contacts connected with said arm and separated by insulating material, means for moving said arm when the receiver is removed, an opposed contact adapted to successively engage the contacts on said arm when the arm is moved, the contacts on the arm and the opposed contact being connected by suitable conductors with the source of electric supply and the primary coil of the induction-coil, so as to produce a series of makes and breaks in the primary circuit each time the receiver is removed from the arm and induce a signaling-circuit in the secondary coil and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

11. As an article of manufacture, a device for telephone-circuits, comprising a pivoted arm adapted to support the receiver, a spring associated with said arm and adapted to move it when the receiver is removed, a series of contacts separated by suitable insulation and connected with said arm so as to be moved thereby, all of said contacts adapted to be connected in circuit, an opposed contact adapted to successively engage the contacts on the arm when the receiver is removed, and a second circuit-controlling device associated with said arm and adapted to cut the receiver out of circuit while the arm is being moved and connect it in circuit when the arm reaches the limit of its movement and a series of insulated contacts on a movable arm adapted to successively engage an opposed contact as the arm is moved.

WILLIAM O. MEISSNER.

Witnesses:

DONALD M. CARTER,
HOMER L. KRAFT.