

D. P. MEADE.  
 COIN OPERATED TELEPHONE APPARATUS.  
 APPLICATION FILED JULY 29, 1910.

978,774.

Patented Dec. 13, 1910.

3 SHEETS-SHEET 1.

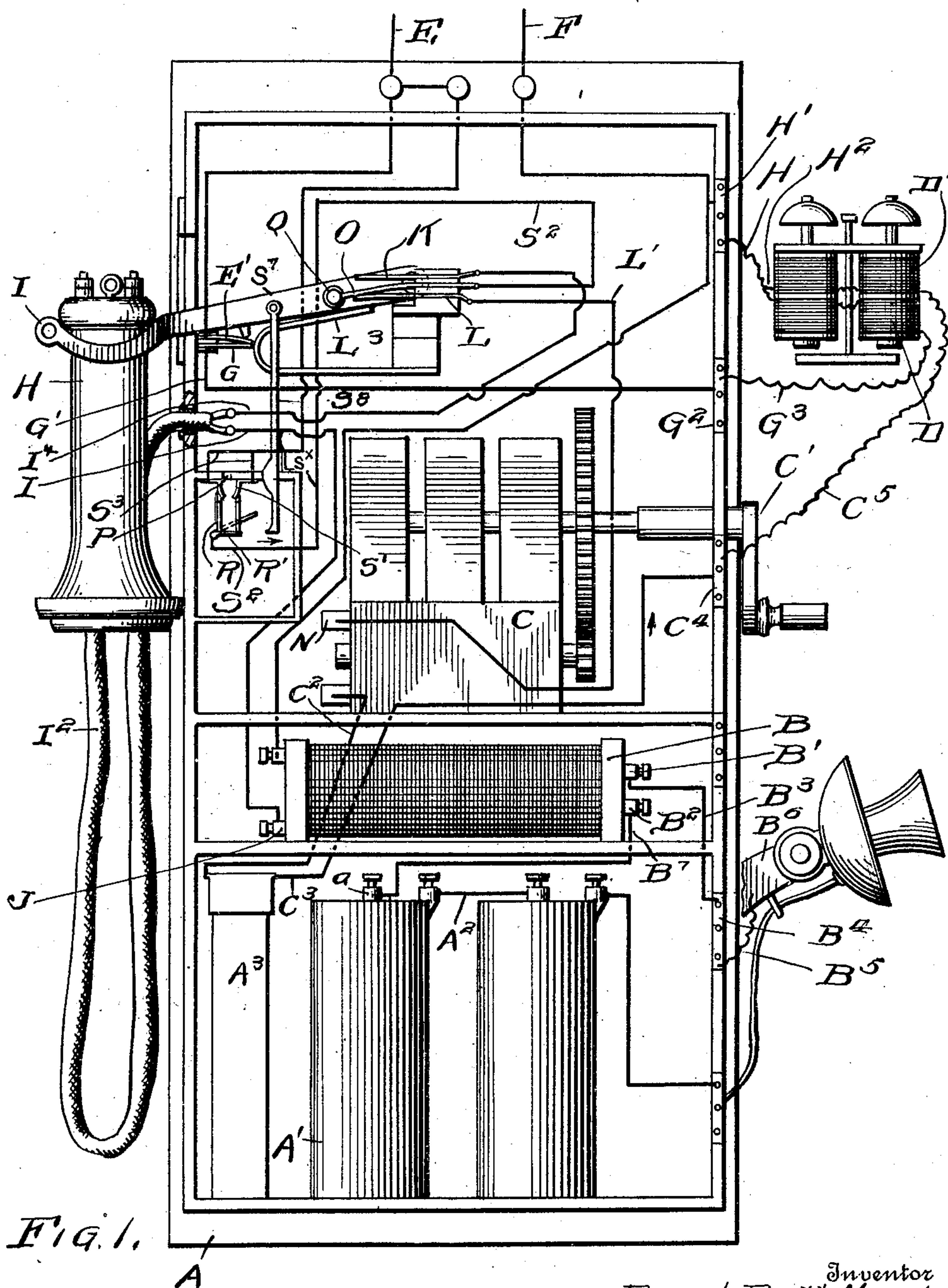


Fig. 1.

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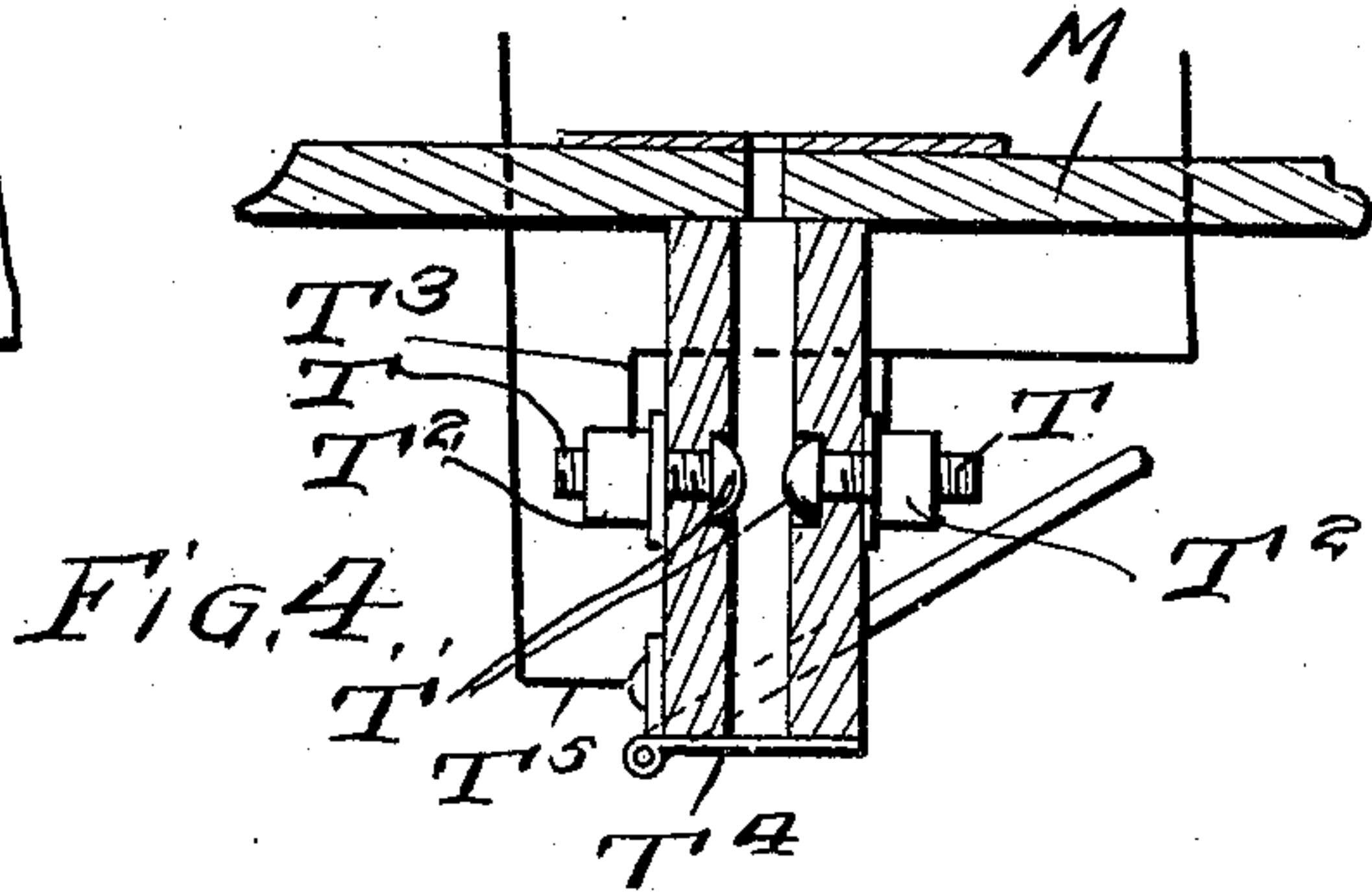
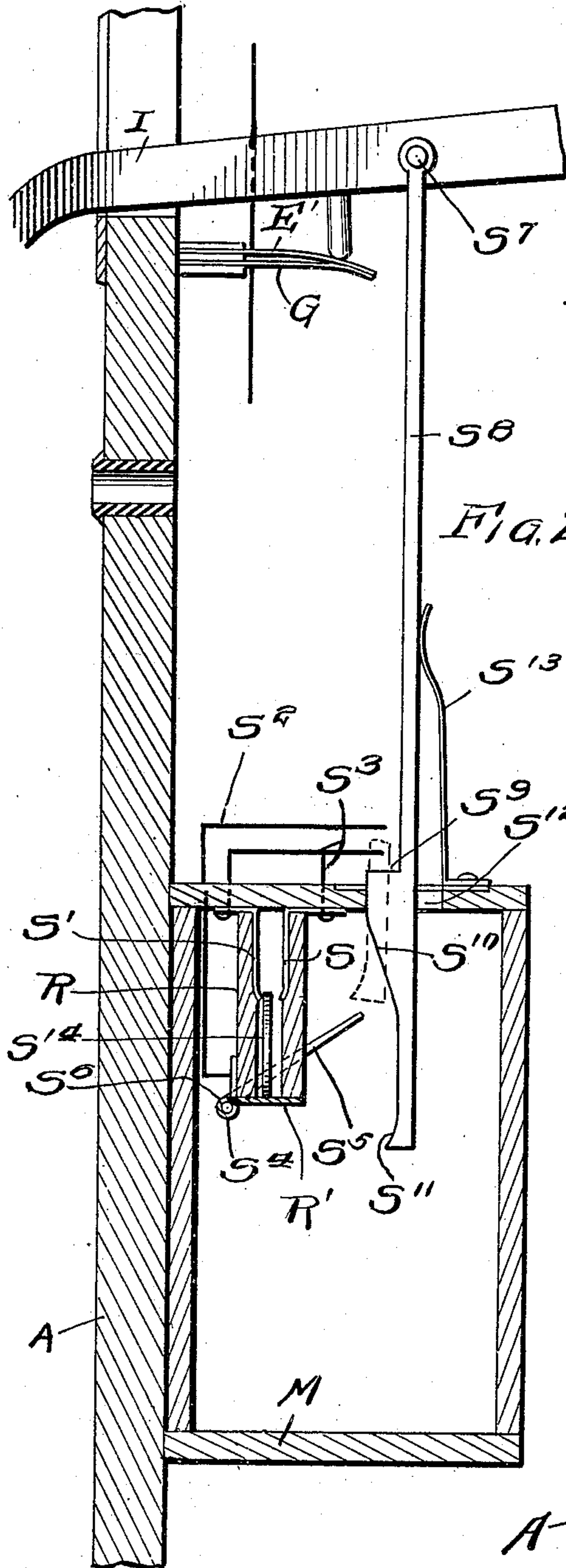


FIG. 4.

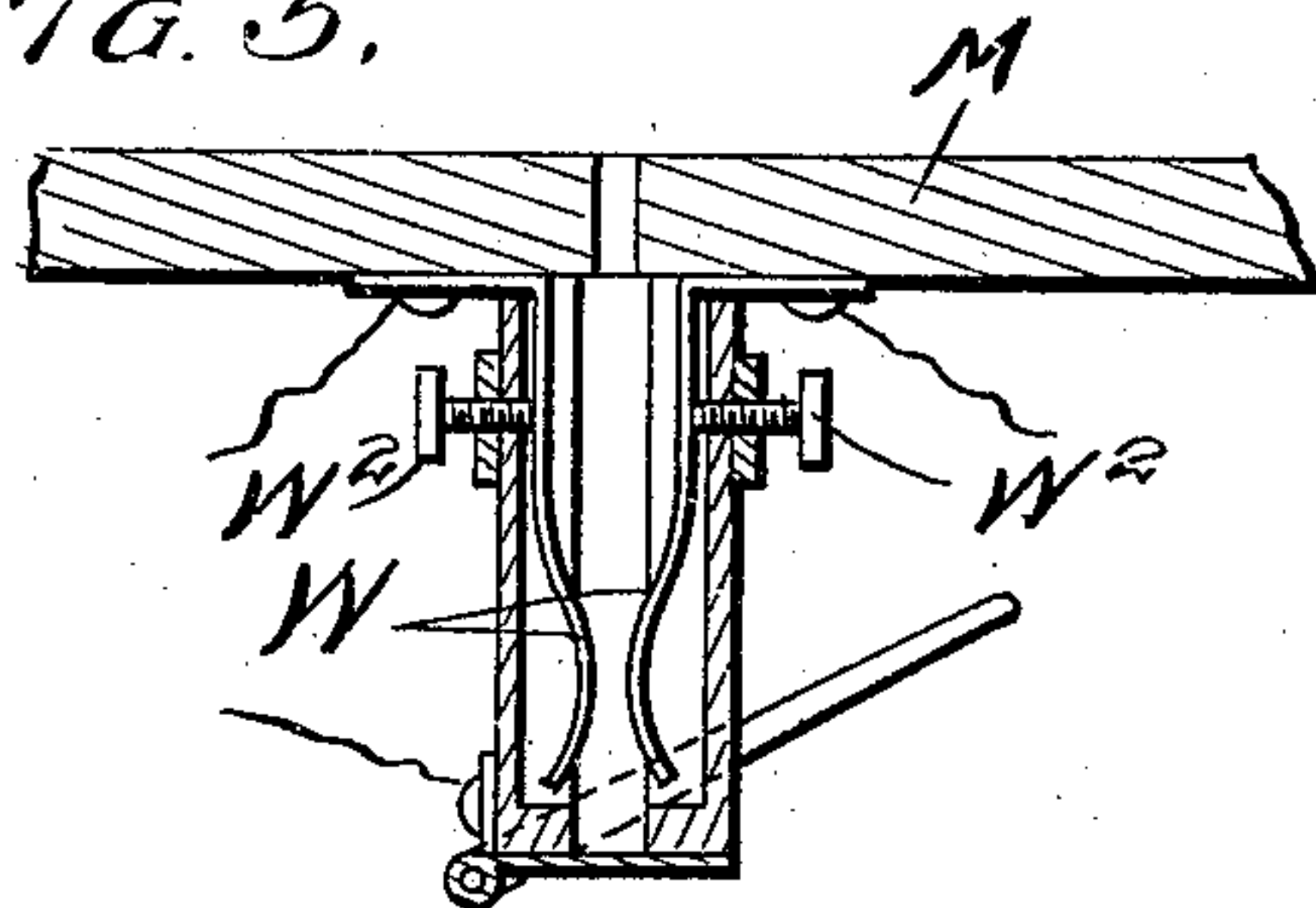


FIG. 5.

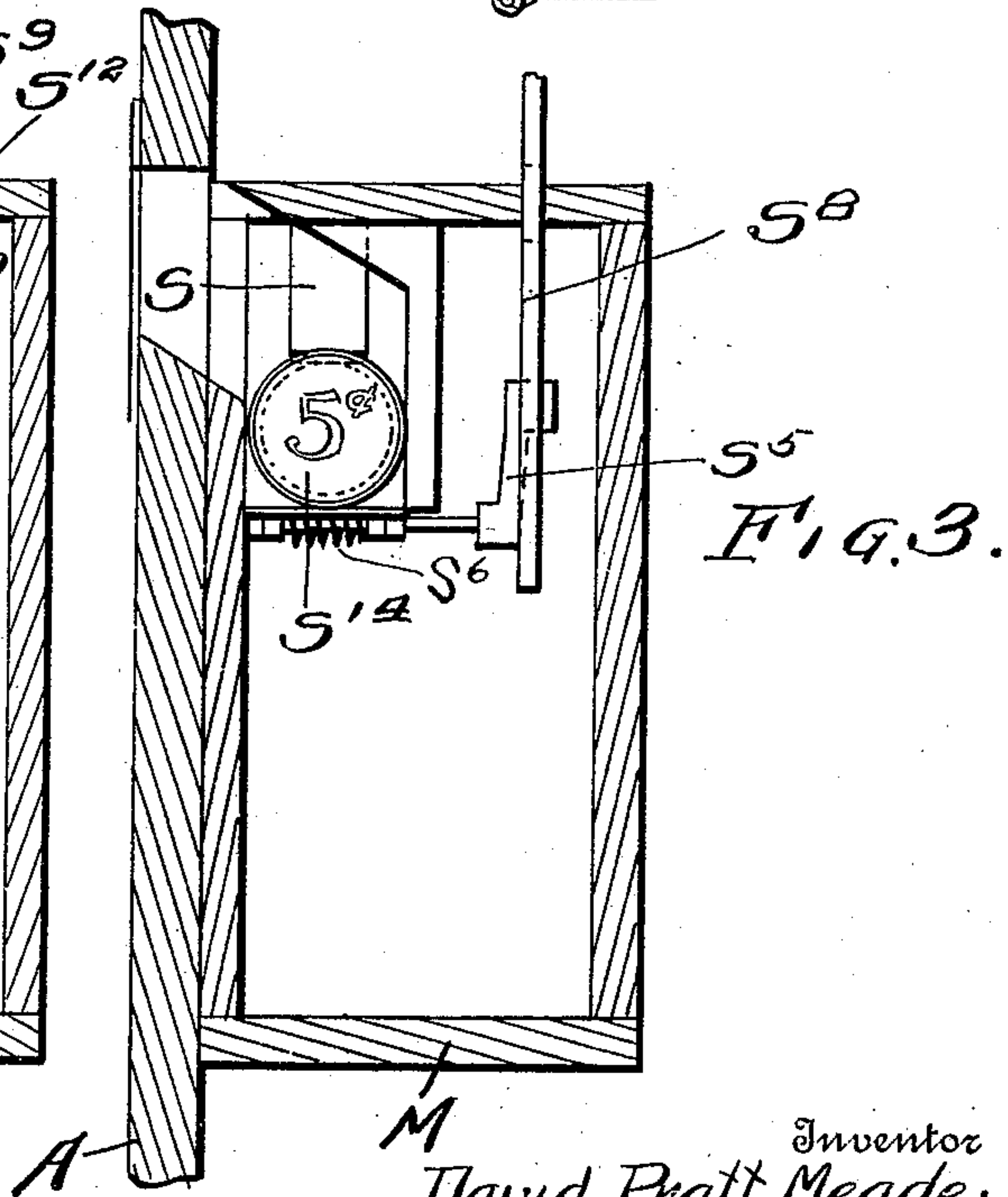


FIG. 3.

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# UNITED STATES PATENT OFFICE.

DAVID PRATT MEADE, OF WHITE POST, VIRGINIA.

COIN-OPERATED TELEPHONE APPARATUS.

978,774.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed July 29, 1910. Serial No. 574,554.

*To all whom it may concern:*

Be it known that I, DAVID PRATT MEADE, a citizen of the United States, residing at White Post, in the county of Clarke and State of Virginia, have invented certain new and useful Improvements in Coin-Operated Telephone Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in coin-controlled attachments for telephones, making it impossible to use the instrument without first dropping a coin in a slot to close the circuit.

The invention comprises a simple and efficient device of this nature having various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a plan view of the mechanism of an ordinary telephone showing my invention as applied thereto. Fig. 2 is an enlarged view in vertical section of the box of a telephone, parts being shown in elevation. Fig. 3 is a sectional view showing a slightly modified form of the coin slot. Figs. 4 and 5 are sectional views of slight modifications of the means of closing the circuit as a coin is dropped in the slot. Fig. 6 is a sectional view of a modified form of the apparatus applying the invention to a desk phone, and Fig. 7 is a diagrammatic view showing means for allowing circuit to be closed, to allow a call signal to be made without use of a coin to close a circuit.

Reference now being had to the details of the drawings by numerals and letters, A designates the ordinary box of a wall telephone in the lower compartment of which are positioned the batteries A', electrical connections A<sup>2</sup> and condenser A<sup>3</sup>. Immediately above the compartment containing the batteries is a second battery containing the induction coil B having binding posts B' and B<sup>2</sup>, the former of which is connected to the primary winding of the induction coil and is connected through the medium

of the wire B<sup>3</sup> with the hinge B<sup>4</sup> of the casing which in turn is connected to the wire B<sup>5</sup> with the transmitter arm B<sup>6</sup> of the usual form common in telephones. The other binding post B<sup>2</sup> of the primary coil is connected through the medium of the wire B<sup>7</sup> with the binding post a of one of the batteries. In the compartment above that containing said induction coil is the magneto C of the usual construction and which is operated by rotating the crank C'. Said magneto is connected through the medium of the wire C<sup>2</sup> with the condenser A<sup>3</sup> and another wire C<sup>3</sup> connects the condenser with the hinge C<sup>4</sup> of the casing which is connected electrically through the medium of the wire C<sup>5</sup> with the upper of the windings D' of the bell.

The main line wires are designated in the drawings by letters E and F, the former of which is electrically connected to the yielding terminal E', which is thrown in contact with the terminal G when the receiver H is normally resting upon the pivotal spring-pressed receiver holder I. A wire G' connects the terminal G with the hinge G<sup>2</sup> upon the casing which in turn is connected through the medium of the wire G<sup>3</sup> with the winding D of the bell. The lower winding D of the bell is connected through the medium of the wire H with the hinge H' and thence connected to the main line wire F, as shown. It will be noted that the upper windings of the bell are connected through the wire H<sup>2</sup> with the wiring H. By this provision of double windings, I dispense with the use of two independent bells.

The receiver has connected thereto the usual electric wires, designated by letters I and I<sup>4</sup>, which are contained within the usual covering I<sup>2</sup> leading from the casing to the receiver. The wire I is connected with the binding post J of the secondary winding of the induction coil and the other wire I<sup>4</sup> is connected to the terminal K. The terminal L is mounted parallel with the terminal K and is connected by means of the wire L' with the terminal N of the magneto. Intermediate the two terminals K and L is a strip of yielding conducting material, designated by letter O, which is fastened to the lug Q projecting from the receiver holder, said strip O being adapted, when the receiver is hanging normally upon the holder, to contact with the terminal L but, when the receiver is taken from the holder and the



latter is thrown to its highest position by means of the usual spring  $I^3$  connected therewith, said strip  $O$  will contact with the upper terminal  $K$ .

5 A suitable coin-receiving box, designated by letter  $M$ , is mounted at any suitable location, in the present instance the same is illustrated as being contained in the casing  $A$  and  $R$  designates a slot box therein having a slot  $P$  and a hinged bottom  $R'$  and two suitably insulated contact members  $S$  and  $S'$  are mounted one upon each side of the slot box and branching wires  $S^3$  are electrically connected therewith. Said wires  $S^3$  are connected with the main line wire  $E$ , as shown in Fig. 1 of the drawings. Fixed to the pintle  $S^4$  of the hinge, as shown clearly in Fig. 2 of the drawings, is an arm  $S^5$  which is held normally in its highest position by the spring  $S^6$  which also serves to normally hold the hinged bottom  $R'$  closed. The member  $S^4$  of the bottom  $R'$  is electrically connected to the contact strip  $O$  upon the receiver holder through the medium of the wire  $S^x$ . Pivotally mounted upon a pin  $S^7$  upon the receiver arm  $I$  is a bar  $S^8$  which has a shouldered portion  $S^9$  beneath which said bar is contracted, having an inclined or cam edge  $S^{10}$ , while the extreme lower end of said bar is widened having a blunt hook shape portion  $S^{11}$ . Said bar  $S^8$  is movable through a slot  $S^{12}$  formed in the top of the coin receptacle  $M$  and is wider than the widest portion of said bar in order to allow the latter to have a lateral play caused by the spring  $S^{13}$  which is fastened at the top of the coin receptacle and bears yieldingly against the bar and serves to normally hold the same at its farthest limit toward the box  $R$ .

In Fig. 2 of the drawings, I have shown a coin, designated by letter  $S^{14}$ , which is in contact with the terminal  $S'$ . It will be noted that in Figs. 1 and 2 of the drawings I have shown the lower ends of said terminals  $S$  and  $S'$  at such a distance from the bottom of the box  $R$  that a coin, preferably a nickel, will, when dropped into said box and which coin will naturally tilt to one side of the box, contact with one or another of the terminals. If a coin of smaller diameter, such as a one cent piece, is dropped within the slot, it will be inoperative as it will fail to close the circuit which will be necessary before the telephone may be used.

In Fig. 4 of the drawings, I have shown a slightly modified form of the contact terminals within the slot box in which, instead of the terminals shown in Fig. 2, I have illustrated two screws  $T$  having rounded heads  $T'$  seated within recesses formed in the adjacent faces of the slot box and projecting toward each other substantially to contact with the coin which is dropped in the box. Said screws may be held in ad-

justed positions by means of the nuts  $T$ , each of which is adapted to have connection with the terminal wires while the hinged bottom  $T^4$  is adapted to have electrical connection through the wire  $T^5$  with a strip similar to the one before described and as illustrated in Fig. 1 of the drawings and identified by letter  $O$  and which is connected to the receiver holder.

In Fig. 5 of the drawings, I have shown a still different modification of the contact points in the slot box in which I have shown two yielding terminals  $W$  which are held in adjusted positions by means of the screws  $W^2$  and electrically connected in the manner described as in Fig. 4.

In Fig. 6 of the drawings, I have shown the application of my invention for use in connection with a desk phone, in which numeral 2 designates a desk or table upon which the receiver 3 rests and fastened to the casing of the receiver 3 is a tubular shell or housing, preferably of metal, and designated by numeral 4, which is open ended and held to the stand of the receiver by means of the straps 5. Pivotally connected to the receiver holder 6 upon which the receiver 7 is normally held is an angled bar 8 having a widened shouldered portion 9 beneath which is an inclined or cam edge adapted to be held by gravity against the upper marginal edge of the shell and the lower end of said bar 8 is shouldered as at 11. Mounted to move longitudinally within said shell is a plunger 12 which is shouldered as at 13 and normally held at its highest position by means of a coiled spring 14 which fits over the lower contracted end 15 of the plunger and a shoulder formed in the insulation filling 16. A terminal 17 is mounted within said insulation and held in an adjusted position by means of the screw 18 which has wire connection 19 with the battery 20 and a wire 21 connects the lower of the straps 5, which is electrically in contact with the shell and through the same with the plunger 12, with one pole of the electro-magnet 22 which in turn is connected through the means of the wire 23 with the battery 20. In the modified form shown in Fig. 6 of the drawings, I have illustrated a boxing, designated by numeral 24 and mounted upon the desk 2 and having a slot 25<sup>x</sup> through which coin is dropped into slot box 26. Said slot box has a hinged bottom 25 having a pintle to which a crank arm 26<sup>x</sup> is pivotally connected which in turn is connected by means of a link 27 with the tilting lever 28 of the armature 29, said lever being mounted upon the pivot pin 30. A coin storing receptacle 31 is mounted in such position as to receive the coins as they are dropped from the slot box 26. Said slot box is provided with the contact terminals 32 and 33 which are adapted



to be connected through the medium of the wire 34 with one of the main line wires, while the hinged bottom 25 is adapted to be connected through the wire 35 with the contact strip secured to the receiver holder, as shown in Fig. 1 of the drawings.

In Fig. 7 of the drawings, I have shown a diagrammatic view illustrating a circuit closing means without the use of a coin whereby a person at a distant point may cause the telephone bell to be sounded by the energizing of an electro-magnet which closes the circuit and in which 40 designates an electro-magnet mounted upon a base 41, and 42 is a wire connected to said magnet and also to the bell 44 which in turn has connection through the wire 45 with the line wire 63, said wire 44 also being electrically connected with the terminal 46 mounted upon the swinging armature 47 which is journaled upon said base 41. 58 designates a second terminal which is electrically connected by means of the wire 59 with the secondary winding 65 of the induction coil, thence connected to the receiver 62. A transmitter 61 has connections with the battery 60 in the usual manner. 54 designates a coin slot box and is provided with a hinged bottom 56<sup>x</sup>, the shaft 52 of which is journaled in suitable bearings and to which an arm 52<sup>x</sup> is fixed. 50 designates an arm rigidly held to the shaft 52 and is pivotally connected to the link 48 by means of a pin 50<sup>x</sup>. Said arm 50 has a shoulder 51 and against which a pin 49 is adapted to contact when said arm and link may be lifted together for the purpose of releasing the shouldered end of the link 48 from the armature 47 to allow the latter to fall to the position shown in Fig. 7 of the drawings after the circuit passing through the electro-magnet is broken. The slot box is shown as having a wire 55 connecting one of the terminals thereof with the wire 59, the two terminals being connected with a wire 55<sup>x</sup>.

The operation of the apparatus shown in Fig. 7 is as follows:—A call coming from the line wire 63 is passed through the wire 45, rings the bells 44, energizes the electro-magnet 40 which will cause the armature 47 to be drawn in contact therewith, thus closing the terminals 46 and 58. As the armature draws toward the electro-magnet, the shouldered end of the link 48 will fall against the upper free edge of the electro-magnet and hold the latter in contact with the electro-magnet. When the receiver is raised, the circuit will be through the receiver, through the secondary winding 65, the wire 59, terminals 58 and 46, wire 45 to the line wire 63. As the receiver is raised, the bar 57 rises with it in the same manner as shown in Fig. 6. As the receiver is hung up, the lower free end of the bar 57 will come in contact with the arm 52<sup>x</sup> and

cause the shaft 52 to be rocked and the arm 50 with its shouldered portion fulcruming against the pin 49 will cause the link 48 to be raised out of contact with the armature 47 and the latter will assume the position shown in Fig. 7. By this means, it will not be necessary to utilize a coin to close the circuit, thus allowing a person from a distance to call up and sound the telephone bell and allow a person to talk while the circuit is closed. When the terminals 46 and 58 are closed against each other, the terminals in the slot box will be bridged.

The operation of the apparatus as applied to a wall phone and as illustrated in Fig. 1 of the drawings is as follows:—The parts being in their normal positions as therein shown, the bell may be rung in the usual manner by breaking the circuit at the other end of the line, the circuit being through the main wire E, terminals E' and G, wire G', hinge G<sup>2</sup>, wire G<sup>3</sup>, one of the windings D of the bell, thence through the wire H, hinge H' and terminal F. When it is desired to use the telephone, it will be necessary to drop a nickel in the slot box which, as it falls to the position shown in Fig. 2 of the drawings, will contact with one or the other of the terminals S or S', accordingly as the coin may tip to one side or the other. In the present instance, the coin is shown in contact with the terminal S' which will close the circuit between the terminal S' and the hinged bottom R'. As the receiver is raised from its holder I', the terminal points E' and G separate and the strip O will come into contact with the terminal K after breaking contact with the terminal L. The circuit will then be from the main line wire E through the branching wire S<sup>3</sup>, through the terminal S', through contact with the marginal edge of the opening in the shell 4, the shouldered portion 11 will move laterally from contact with the plunger and assume the position shown in Fig. 6, thus leaving the apparatus in readiness for use again. Before hanging up the receiver, the lower end of the bar S<sup>8</sup> will assume the position shown in dotted lines in Fig. 2 and, when the receiver is hung up, the holder I will be drawn down and the point S<sup>11</sup> coming in contact with the arm S<sup>5</sup> will cause the bottom R' to tilt and discharge the coin into the receptacle below. After the point S<sup>11</sup> has passed by the arm, the spring S<sup>6</sup> will return the bottom to its normal or closed position. By the provision of the second winding of the bells, means is afforded whereby the bells may be rung up to call up a person at a foreign point when the circuit is closed by the insertion of a coin within the slot box.

From the foregoing, it will be noted that, by the provision of the various forms shown, it will be absolutely necessary to first drop



a coin within the slot box to close the circuit before it will be possible to use the telephone, the windings of the call bell being in circuit when the receiver is in position upon the holder.

What I claim to be new is:—

1. In combination with a telephone, a coin circuit closing attachment comprising a slot box having a movable hinged bottom of electrical conducting material, electrical terminals within said box, electrical connections between said terminals and bottom and the wiring of the telephone, an arm fixed to said bottom, a bar pivotally connected to the receiver holder and adapted to tilt said arm to cause said bottom to open to allow the coin to drop from the box.

2. In combination with a telephone, a coin circuit closing attachment comprising a slot box having a movable hinged bottom of electrical conducting material, electrical terminals within said box, electrical connections between said terminals and bottom and the wiring of the telephone, an arm fixed to the pintle of the hinged bottom, a bar pivoted to the receiver holder and adapted to contact with and swing said arm to tilt the hinged bottom as the receiver holder is moved down by the weight of a receiver placed thereon, and means for releasing said bar from the arm.

3. In combination with a telephone, a coin circuit closing attachment comprising a slot box having a spring-actuated hinged bottom of electrical conducting material, an arm fixed to the pintle of said bottom, electrical

terminals within said box, electrical connections between the terminals and the bottom and the wiring of the telephone, a laterally swinging depending bar pivotally mounted upon the receiver holder, movable through an opening in the slot box and having a cam edge, a spring bearing against said bar and adapted to throw the cam edge of the bar against the marginal edge of said opening, said bar adapted to contact with said arm as the receiver holder is swung downward, thereby causing the hinged bottom to open and allow the coin to fall from the slot box.

4. In combination with a telephone, a coin circuit closing attachment comprising a slot box having a movable hinged bottom of electrical conducting material, electrical terminals fastened to the opposite side walls of the slot box with their free ends extending toward each other, a spring-actuated bottom hinged to the box, a laterally extending arm fixed to the pintle of said hinged bottom, electrical connections between said bottom and terminals and the wiring of the telephone, a depending bar pivotally mounted upon the receiver holder and adapted to contact with said arm to cause the bottom to swing open to allow a coin to drop from the slot box as the receiver is hung upon its holder.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

DAVID PRATT MEADE.

Witnesses:

A. L. HOUGH,  
D. MEADE, Jr.