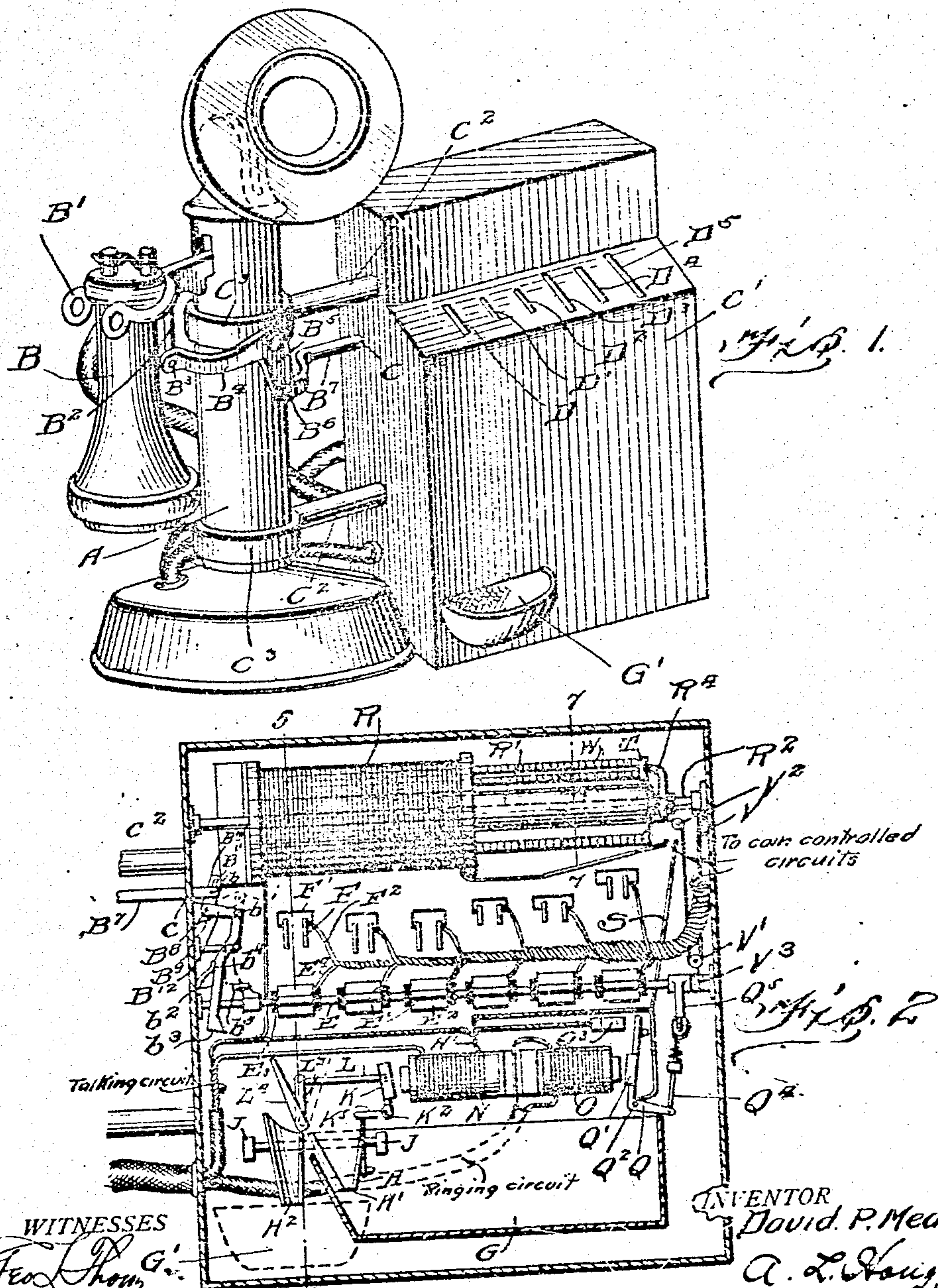


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 COIN CONTROLLED TELEPHONE APPARATUS.  
 APPLICATION FILED DEC. 7, 1910.

985,616.

Patented Feb. 28, 1911.  
 2 SHEETS—SHEET 1.



WITNESSES  
 Geo. L. Thom  
 A. R. Fowler

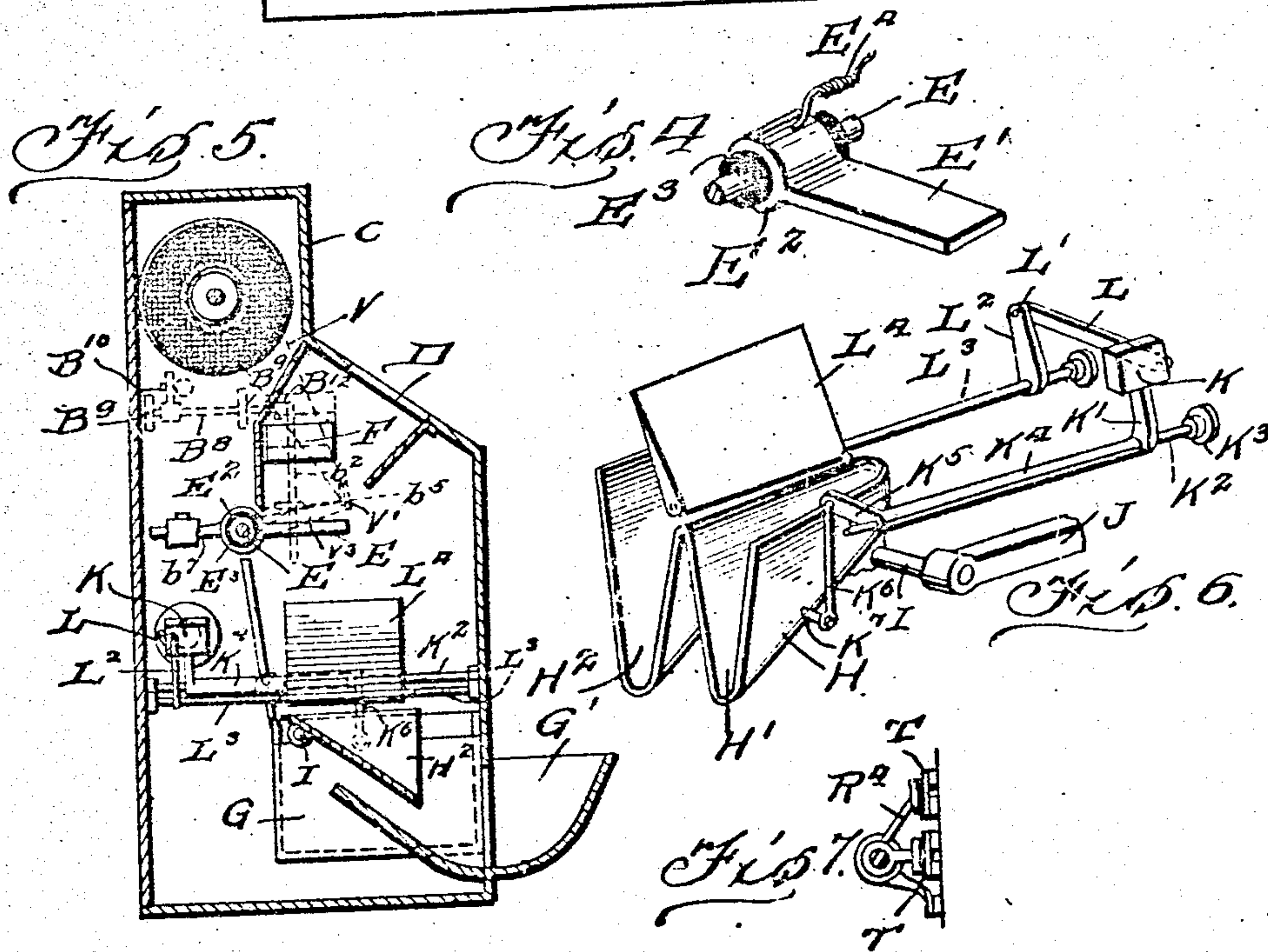
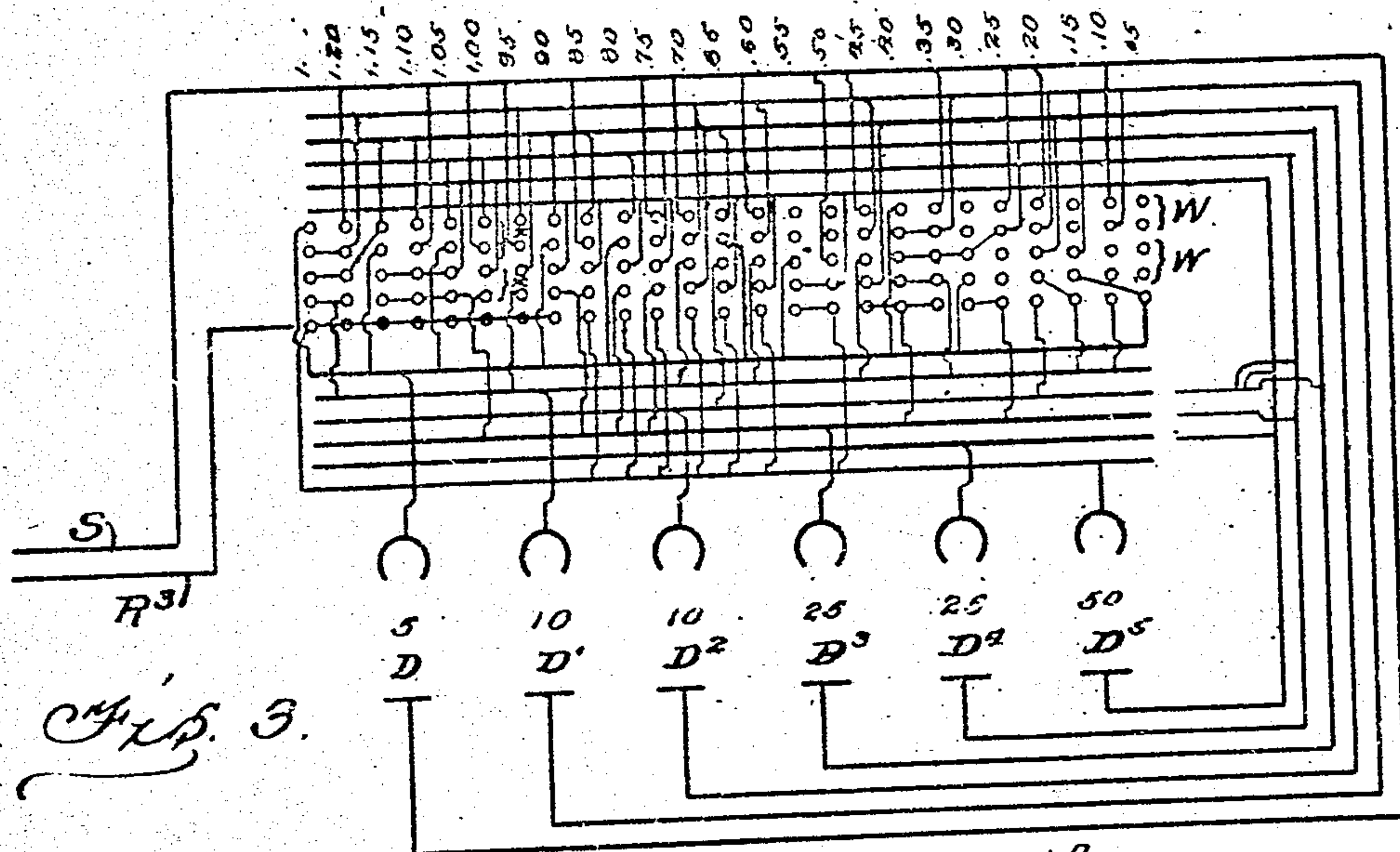
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2 SHEETS—SHEET 2.



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

DAVID PRATT MEADE, OF WHITE POST, VIRGINIA.

COIN-CONTROLLED TELEPHONE APPARATUS.

985,616.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed December 7, 1910. Serial No. 586,159.

*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-Controlled 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 apparatus for telephones and the object in view is to produce a simple and efficient mechanism of this nature so arranged that coins may be returned to a person dropping the same in the slot of the instrument in the event of not getting the person desired to be reached by the 'phone, the coin serving as a means of completing the circuit when the receiver is taken from its hanger.

The invention consists further in an apparatus of this nature so arranged as a toll system for talking with different foreign points requiring the depositing of coins of different denominations before the circuit may be closed for talking at different toll stations.

Another feature of the invention consists in the provision of means whereby, after a coin has been deposited in a slot of the instrument, the circuit may be closed when central is called by taking the receiver from its hanger and the coin may be returned to the person depositing it in the event of additional coins being placed within one of the other slots of the instrument for foreign toll.

Still another object of the invention resides in the provision of means whereby a person may be called up from central office without the dropping in of a coin to close the circuit.

The invention comprises various other details of construction and 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 perspective view of a desk 'phone showing my apparatus as applied thereto. Fig. 2 is a sectional view vertically through the casing shown in Fig. 1 and illustrating the mechanism contained therein. Fig. 3 is a diagrammatic view showing the various circuits. Fig. 4 is a detail perspective view of a contact point for supporting and dumping a coin. Fig. 5 is a vertical sectional view on line 5—5 of Fig. 2. Fig. 6 is a detail perspective view of a tilting coin hopper, and Fig. 7 is a sectional view on line 7—7 of Fig. 2.

Reference now being had to the details of the drawings by letter, A designates a desk telephone of the usual construction and having a receiver B and a hanger B' therefor. Pivotaly connected to the hanger is a link B<sup>2</sup> which is pivoted at B<sup>3</sup> to the end of the curved arm B<sup>4</sup> of the angle lever B<sup>5</sup> which in turn is pivotaly connected at B<sup>6</sup> with the curved end of the bar B<sup>7</sup> which has a longitudinal movement through an aperture C in the casing C'. Rods C<sup>2</sup> project from said casing and have rings C<sup>3</sup> at their ends which round the cylindrical upright portion of the telephone, forming means for holding the casing and telephone together. Said casing is provided with a series of coin slots, designated by letters D, D', D<sup>2</sup>, D<sup>3</sup>, D<sup>4</sup> and D<sup>5</sup> respectively, adapted for the reception of coins of different denominations, which are necessary to pay toll for foreign calls.

Mounted within the casing C', as shown clearly in Fig. 2 of the drawings, is a rock shaft E having a series of coin receiving plates E', one of which is shown in Fig. 4 of the drawings and each of which has a hollow boss E<sup>2</sup> for the reception of the shaft E, a suitable insulation E<sup>3</sup> being interposed between the boss and the shaft E. A wire E<sup>4</sup> is connected with each of said bosses and each slot has contact points F which are electrically connected by means of the wires F' and each pair of contact points F has connected thereto a wire F<sup>2</sup>, the two wires F<sup>2</sup> and E<sup>4</sup> being connected to the coin-controlled circuits, as illustrated in Fig. 3 of the drawings.

Referring to Fig. 5 of the drawings will be seen a rock shaft B<sup>8</sup> mounted in the bear-



ings  $B^0$  and fixed to said shaft is a crank arm  $B^{10}$  which, as shown in Fig. 2 of the drawings, is slotted as at  $B^{11}$  and a pivotal pin  $b$  carried by the bar  $B^7$  has a sliding pivotal movement in said slot. A second crank arm  $B^{12}$  is fixed to the shaft  $B^8$  and disposed at an angle to the crank shaft  $B^{10}$  and is pivotally connected by means of a pin  $b'$  to the upper end of the laterally swinging member  $b^2$ , the lower end  $b^3$  of which is widened and is thrown to the position shown in dotted lines in Fig. 2 by means of a spring  $b^4$ . Fixed to the shaft E is a finger  $b^5$  against which the lower widened end  $b^3$  of the member  $b^2$  is adapted to contact when the receiver is taken from its hanger, the usual spring, which is not shown, connected to the hanger serving to throw the latter to its highest position as the receiver is taken therefrom and, through the connections described, cause the member  $b^2$  to be raised to the position shown in dotted lines in Fig. 2 in readiness to cause the shaft E to be rocked when the receiver is returned to its hanger and the latter drawn down by the weight of the receiver.

Mounted in the lower portion of the receptacle is a coin box G adapted to receive the coins which pay for the use of the telephone. An additional coin receptacle, designated by letter  $G'$ , is provided for the reception of such coins as may have been dropped in the instrument to allow the circuit to be closed but which coins it is desired to be returned to the person dropping them in the slot when the party sought to be reached does not respond to the telephone.

Referring to Fig. 6 of the drawings will be seen a tilting hopper H, having two compartments  $H'$  and  $H''$  with inclined bottoms and mounted upon a rock shaft I mounted in a suitable bearing in the fixed arm J. A pivotal armature, designated by letter K, has an integral angle shank portion  $K'$  mounted upon a shaft  $K^2$ , the end of which is journaled in the bearing  $K^3$  and a sleeve  $K^4$  is journaled upon the horizontally disposed portion  $K'$  of the shank of the armature, and  $K^5$  designates a crank arm fixed to the shank portion  $K'$  of the armature.  $K^6$  is a link pivotally connecting the crank arm  $K^5$  with a pivotal pin  $K^7$  projecting from the tilting hopper H. Pivotaly connected to the armature K is a link L which in turn is pivotally connected at  $L'$  to the crank arm  $L^2$  which is fixed to the rock shaft  $L^3$ , having a wedge-shaped deflecting member  $L^4$  fixed thereto and which is mounted over the central partition between the compartments  $H'$  and  $H''$  of the hopper H. Mounted within the casing A are the two solenoids, designated respectively by letters N and O, the former of which has a winding of wire  $N'$  connected with the talking circuit and also with the shank portion Q

of the armature  $Q'$ , which shank portion Q is mounted upon a pivotal pin  $Q^2$ . The upper projecting end of the armature  $Q'$  has preferably a knife edge and is adapted to contact with the terminal  $Q^3$  when said armature  $Q'$  is drawn into contact with the solenoid O as the latter is energized. The wires  $O'$ , forming the winding about the solenoid O, are connected to the line wires connected to central and affording means whereby, when central desires to call the party, a current may be caused to pass through the wires  $O'$  to energize the solenoid O. The shank portion Q of the armature  $Q'$  has pivotally connected thereto a link  $Q^4$  which is connected to a crank arm  $Q^5$  fixed to the shaft E, as shown clearly in Fig. 2 of the drawings, affording means whereby, as the solenoid O is energized and its armature  $Q'$  drawn in contact therewith, the shank  $Q^5$  may be rocked.

Referring to Fig. 2 of the drawings will be seen a solenoid R having a core  $R'$  mounted to have a longitudinal movement upon the bar  $R^2$  supported on its ends in suitable bearings fastened to the opposite walls of the casing, and  $R^3$  designates a wire forming the winding of the solenoid R which is connected to the bar  $R^2$ . The wire S connects with the shank portion Q of the armature  $Q'$  and forms a part of the circuit shown in diagrammatic view Fig. 3. Secured to and insulated from the core  $R'$  are the bracket members  $R^4$ , shown clearly in Fig. 7 of the drawings, and each of said bracket members carries a shoe T adapted to contact with one or another of the sets of terminals, designated in the diagrammatic view by letter W. A cable V is fastened at one end to the casing and passes underneath a pulley  $V'$  carried by a crank arm  $V^2$  fixed to the shaft E and thence about a pulley  $V^3$  and has its other end connected to the core  $R'$  and serving as means for returning the core to its normal position when the shaft E is rocked.

In operation, when it is desired to call central, a nickel is dropped in the slot D and falls upon the tilting plate  $E'$  and tilts against one or another of the contact points F, thus closing the circuit. As the operator takes the receiver from the hanger, the member  $b^2$  will assume the position shown in dotted lines in Fig. 2 of the drawings, in which position the lower end of said member  $b^2$  will rest upon the finger  $b^5$ . When the receiver is hung up and the hanger drawn down to the position shown in Fig. 1, the free end of the member  $b^2$  will push down upon the finger  $b^5$  and cause the shaft E to rock and the coin will be dumped into the coin receptacle G. The rock shaft is returned to its normal position by means of the adjustable counterbalance weight  $b^7$ .

In the event of central desiring to call up a particular 'phone equipped with my appa-



ratus, it may be done by energizing the solenoid O and the armature Q' will be drawn in contact with the core of the solenoid O and the circuit will be through the solenoid N, wire S, through the pivot of the armature Q' and through the terminal Q<sup>2</sup> and return wire to the talking circuit, this being accomplished without the necessity of utilization of a coin to close a circuit.

- 10 When it is desired to utilize the apparatus in paying toll for foreign calls, the nickel is dropped in the slot D in the usual manner to close the circuit, the receiver taken from the hanger and central called up.
- 15 The central operator in adjusting the apparatus to connect up with a foreign toll office will cause the shoes T to be moved with the core K' of the solenoid R so that the particular pair of shoes will bridge over any two pair of contact points as X, X in Fig. 3, which would designate a toll of \$1.00.
- The apparatus being thus adjusted, the circuit would be as follows:—The fifty cent coin should be dropped in the slot D<sup>2</sup> and twenty-five cent coin in slots D<sup>2</sup> and D<sup>4</sup>. This being done, the proper circuits would be closed to enable a person to talk with the foreign-toll office. In the event of the apparatus being adjusted for toll and there being a nickel previously dropped in slot D in order to close the first circuit to call up central and it is desired to return the nickel to the person calling, the operator will cause an increased current to pass through the winding of the solenoid N to energize the same sufficiently to draw the armature K in contact therewith which, through the mechanism shown, will cause the guiding member L<sup>4</sup> to be swung to the position shown in dotted lines in Fig. 2. When the parts are adjusted in these positions and the operator places the receiver upon the hanger, the shaft E will be rocked in the manner before described and cause the coin to be dumped into the compartment H<sup>2</sup> of the hopper H and fall into the receptacle G' from which it may be withdrawn. As the nickel strikes the lower inclined edge of the compartment H<sup>2</sup>, it will cause the hopper to tilt and, through the connections shown in Fig. 6, the deflecting member L<sup>4</sup> will be returned to its normal position.

From the foregoing, it will be noted that, by the provision of the apparatus shown and described, a simple and efficient means is afforded whereby a person not succeeding in getting the person at the other end of the line desired and having to drop in a nickel for the purpose of making it possible to close the circuit and call up central may have the nickel thus deposited returned without going into the coin receptacle G and means is afforded whereby central may call up a person having a phone equipped with the apparatus without the necessity of

a nickel for closing the circuit. Another advantage which will be apparent for the apparatus shown is that means is provided whereby the apparatus is adapted for toll calls, making it necessary to drop in the particular number of coins to pay for the toll before the circuit may be closed to adapt the line for long distance conversation.

What I claim to be new is:—

1. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper, and means for guiding a coin in said hopper.

2. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, and means for causing the coin to pass into one or the other of the compartments.

3. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, and electrically operated means for causing the coin to fall into one compartment or the other.

4. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, and



a swinging deflecting member mounted over the hopper and adapted to cause a coin to pass into one or another of the compartments in the hopper.

5 5. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, a rock shaft mounted over the hopper, a deflecting member fixed to said shaft, and means for rocking the shaft to cause the deflecting member to cause a coin to fall into one or another of the compartments in the hopper.

25 6. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, a rock shaft mounted over the hopper, a deflecting member fixed to said shaft, means for rocking the shaft to cause the deflecting member to cause a coin to fall into one or another of the compartments in the hopper, and means actuated by the tilting of the hopper for returning said deflecting member to its normal position.

45 7. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, a rock shaft mounted over the hopper, a deflecting member fixed to said shaft, means for rocking the shaft to cause the deflecting member to cause a coin to fall into one or the other of the compartments in the hopper, a solenoid, an armature adapted to be drawn in contact with the latter as the solenoid is energized, and connections between the ar-

mature and said shaft to cause the same to rock and the deflecting member to swing to direct a coin into one or the other of the compartments of the hopper.

8. A coin-operated telephone apparatus 70 comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper having a plurality of compartments adapted to cause a coin to be delivered from the hopper in different directions, a rock shaft mounted over the hopper, a deflecting member fixed to said shaft, means for rocking the shaft to cause the deflecting member to cause a coin to fall into one or the other of the compartments in the hopper, a solenoid, an armature adapted to be drawn in contact with the latter as the solenoid is energized, connections between the armature and said shaft to cause the same to rock and the deflecting member to swing to direct a coin into one or the other of the compartments of the hopper, a crank arm fastened to the shank portion of said armature, and link connections between said crank arm and hopper. 85 90 95

9. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, means actuated by the telephone receiver hanger for rocking the shaft to dump the coin from said projection and break the circuit, a tilting hopper, means for guiding a coin in said hopper, a solenoid, a pivotal armature therefor, and connections between said armature and rock shaft. 100 105 110

10. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against which latter and the points a coin is adapted to contact to close the circuit, a solenoid, a longitudinally movable core therein, contact shoes movable with said core and insulated therefrom, a series of contact points, said shoes adapted to bridge the latter, and means for returning the shoes to their normal positions when the receiver is placed upon the hanger. 115 120 125

11. A coin-operated telephone apparatus comprising a telephone, a slotted casing, a rock shaft therein, projections upon said rock shaft and insulated therefrom, contact points above said projections and against 130



which latter and the points a coin is adapted  
to contact to close the circuit, a solenoid, a  
longitudinally movable core therein, contact  
shoes movable with said core and insulated  
5 therefrom, a series of contact points, said  
shoes adapted to bridge the latter, means for  
returning the shoes to their normal positions  
when the receiver is cased upon the hanger,  
a crank arm fixed to the rock shaft, a cable  
10 fastened to the casing, a pulley upon said

crank arm and about which the cable passes,  
said cable being connected to the core of the  
solenoid and designed to cause the same to  
move longitudinally as the shaft is rocked.

In testimony whereof I hereunto affix my 15  
signature in the presence of two witnesses.

DAVID PRATT MEADE.

Witnesses:

A. L. HOUGH,

A. R. FOWLER.