No. 675,378. Patented June 4, 1901.

C. E. EGAN.

PAY TELEPHONE.

(Application filed Mar. 15, 1901.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 2.

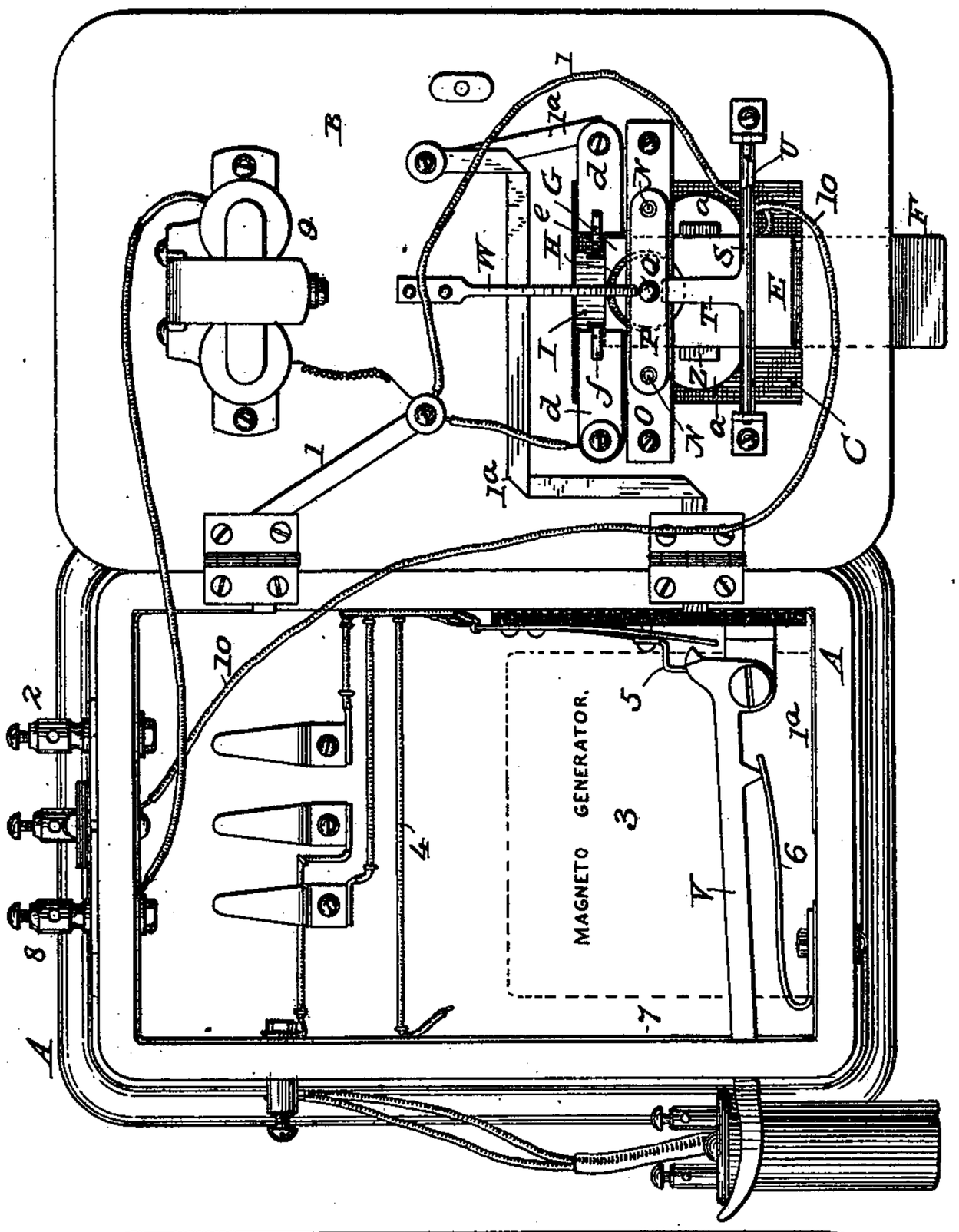

Fig. 1.

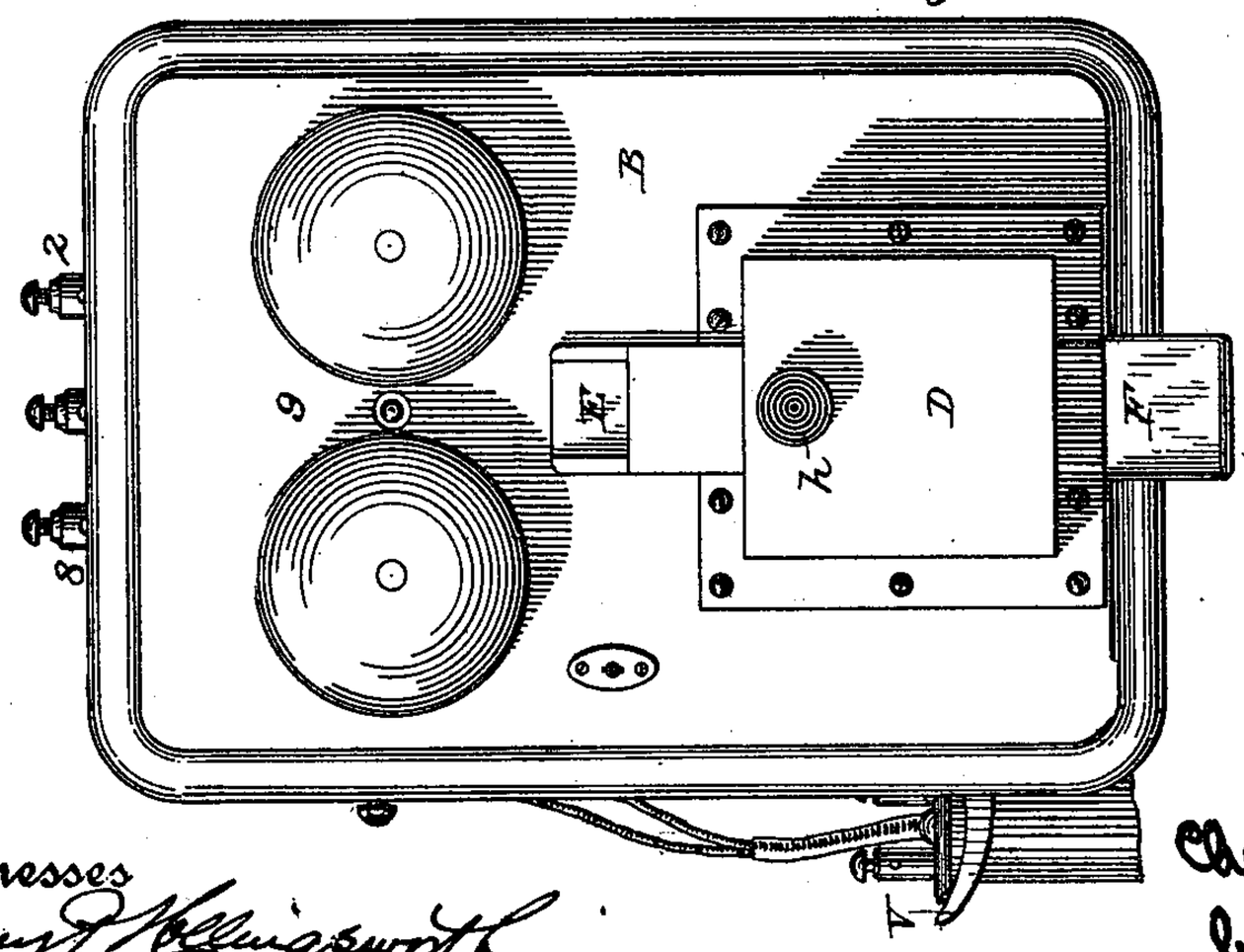

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Fig. 4.

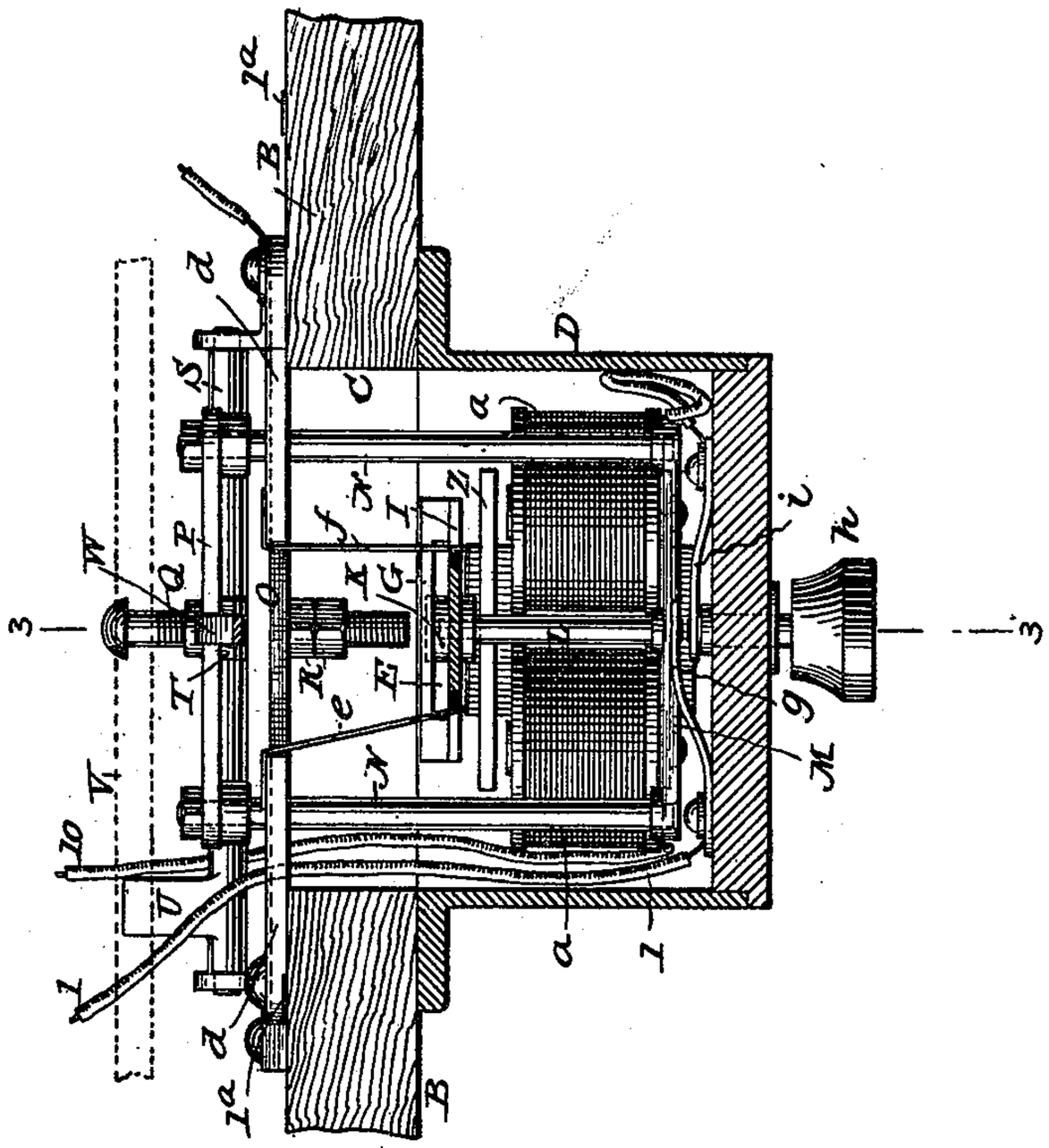
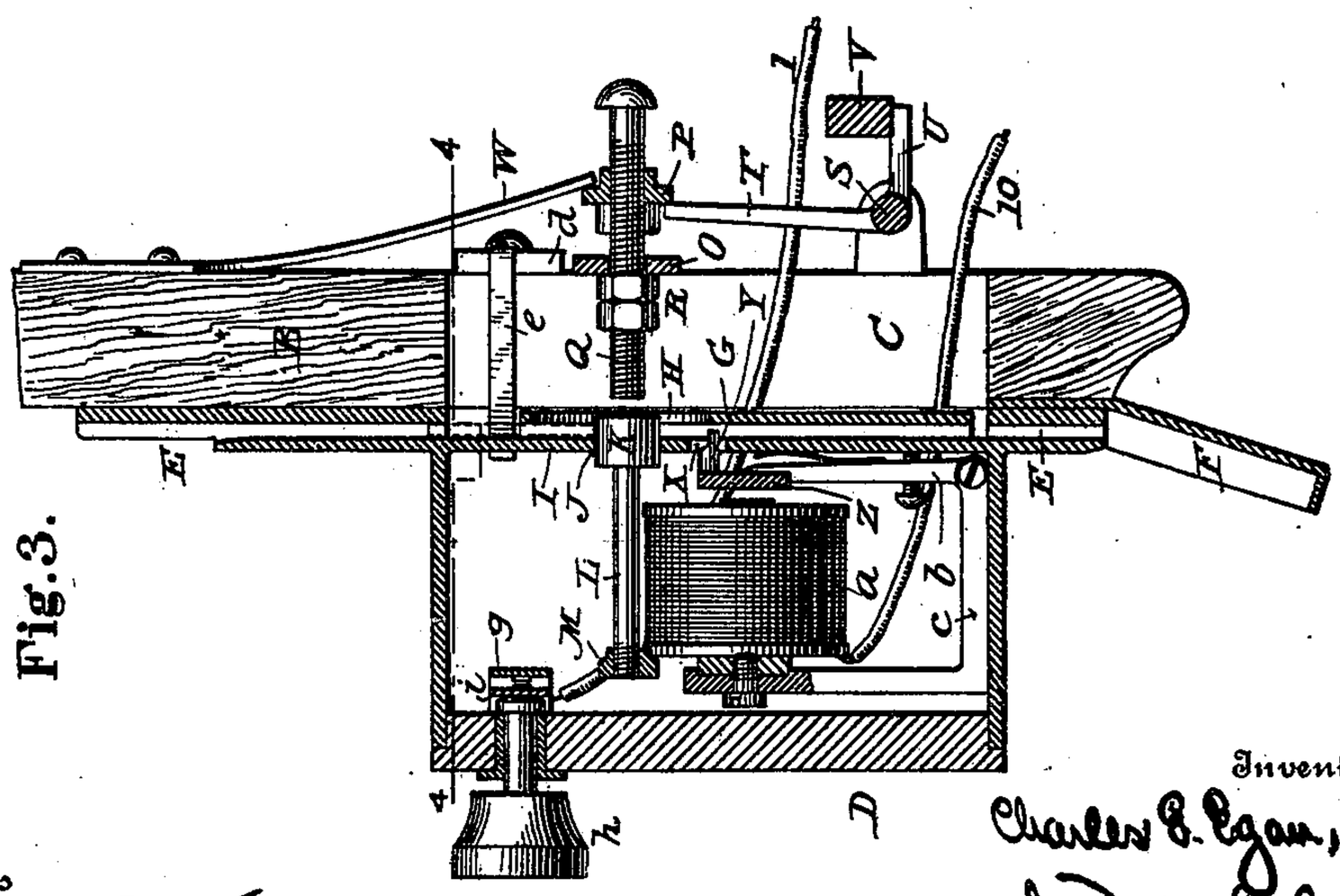


Fig. 3.



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(No Model.) 4 Sheets—Sheet 3.

Fig. 6.

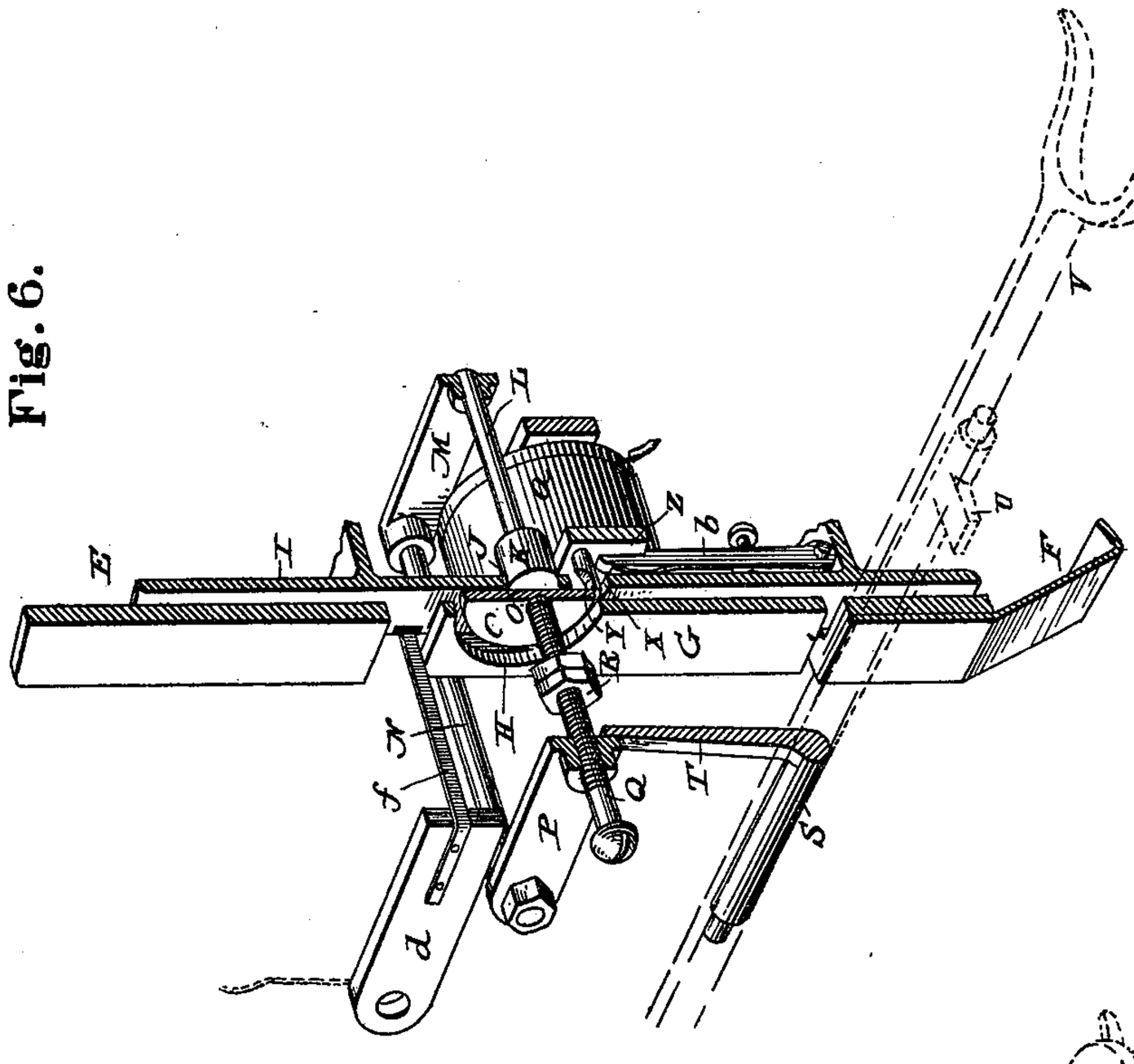
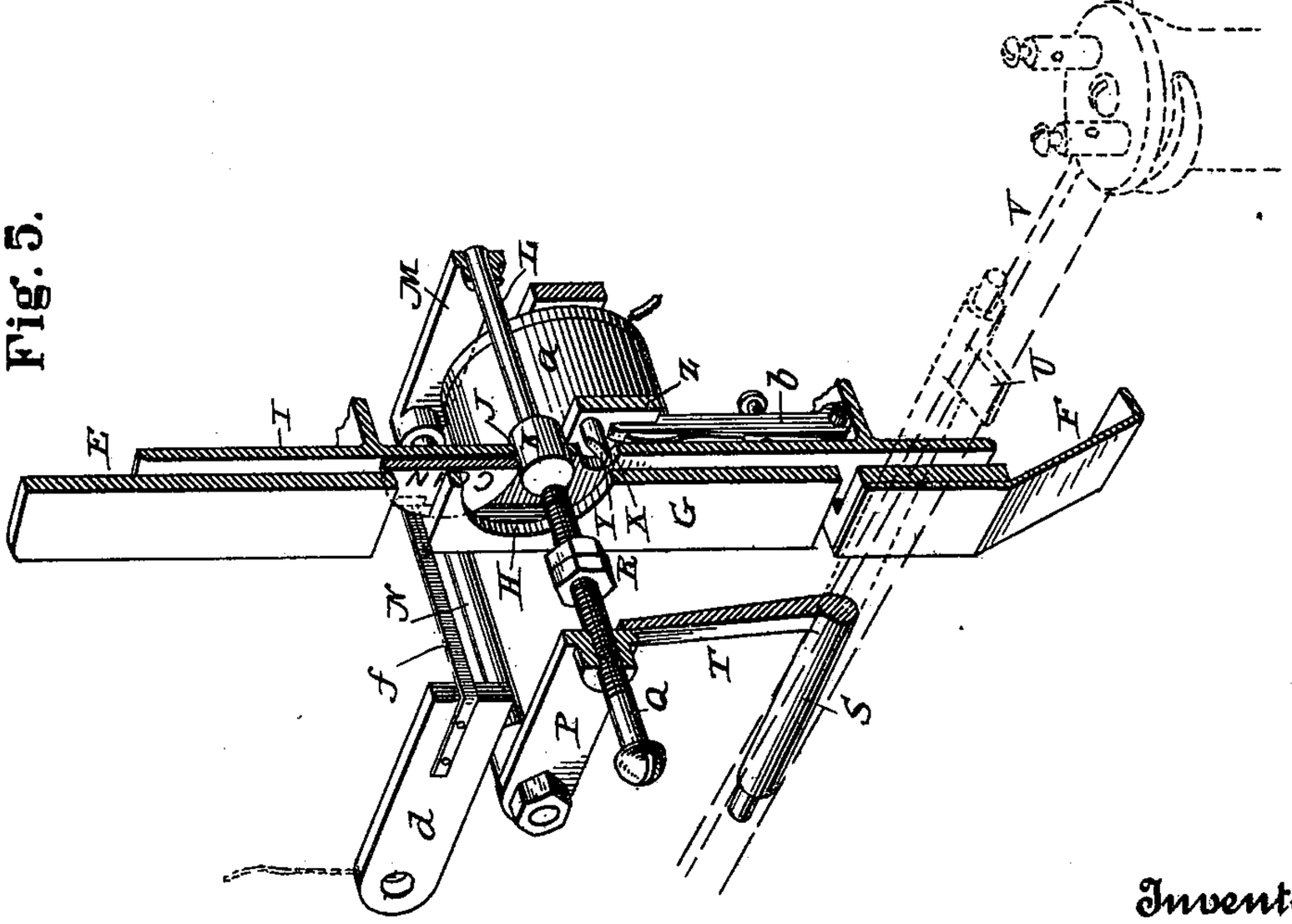


Fig. 5.



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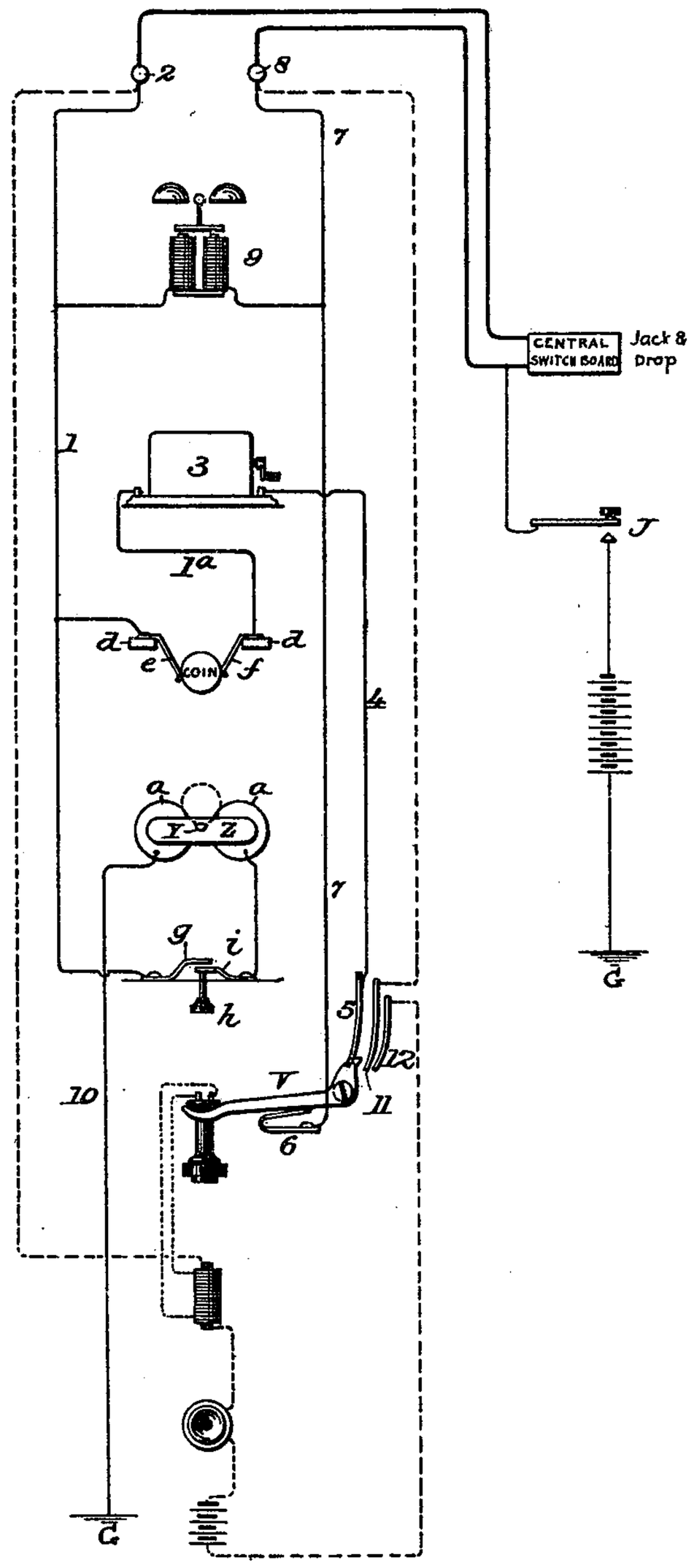
(No Model.) 4 Sheets—Sheet 4.

Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES E. EGAN, OF DURHAM, NORTH CAROLINA.

PAY-TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 675,378, dated June 4, 1901.

Application filed March 15, 1901. Serial No. 51,339. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. EGAN, a citizen of the United States, residing at Durham, in the county of Durham and State of North Carolina, have invented certain new and useful Improvements in Pay-Telephones, of which the following is a specification.

My present invention pertains to pay-telephones, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is an elevation of so much of the front portion of a telephone as is necessary to an understanding of the invention; Fig. 2, a similar view, the door or closure being open; Fig. 3, a vertical sectional view; Fig. 4, a horizontal sectional view; Figs. 5 and 6, sectional perspective views showing the apparatus in different positions, and Fig. 7 a diagrammatic view illustrative of the circuits of the instrument.

The object of my invention is to provide a simple and efficient means whereby a coin introduced into the instrument to pay the toll may, if the party is not to be had, be returned to the depositor, the return of the coin being under the joint control of the central office and the user of the telephone.

The invention is illustrated in connection with an ordinary telephone, and it is to be understood that it is susceptible of use in connection with any type of instrument or any arrangement of circuits.

Referring to the drawings, A indicates the frame of the cabinet or casing, and B the usual door or closure, having an opening C, in front of which is attached a frame or casing D, preferably rectangular in form and closed to access from without. A coinway or slot E, open at its upper end, is provided intermediate the door and the shell or casing D and extends down past the opening C, as best indicated in Figs. 2, 3, and 4. In line with the lower end of the coinway is mounted a receptacle F, designed to receive the coin when the particular subscriber wanted cannot be reached. The inner wall G of the coinway is provided with an opening H of a size somewhat larger than the diameter of the coin to be used to pay toll for use of the instrument. In the opposite wall I of the coinway there is formed an opening J, through which extends a head or plunger K, said head or plunger standing normally across the coinway, as indicated in Figs. 3 and 5. The plunger is carried by a stem or rod L, which in turn is connected to a cross bar or member M, the outer ends of which are connected to rods N N, which pass through openings formed in the guide or supporting plate O, secured to the inner face of the door. The inner ends of these rods are connected to a cross bar or member P, in which is adjustably mounted a threaded rod or stem Q, having lock-nuts R mounted thereon, which serve to limit the movement of the frame composed of the members M, N, N, and P in one direction by coming in contact with the face of the cross-bar or supporting member O, as best indicated in Fig. 3.

A rocker-shaft S is mounted below the frame just described, and an arm T extends upwardly therefrom and comes in contact with the cross-bar P. A second arm U is likewise formed upon or attached to the rocker-shaft S and extends out horizontally therefrom and passes beneath the body of the receiver-hook V, so that when the receiver is hung up its weight will, acting through the member U, rocker-shaft S, and arm T, draw the frame inwardly into the position indicated in Fig. 3. A spring W tends to move the frame outwardly into the position shown in Fig. 6, withdrawing the plunger K from the coinway. The spring comes into action when the receiver is lifted from the hook. In other words, the weight of the receiver will overcome the action of the spring and normally hold the parts in the position shown in Fig. 5. A second opening X is formed in the forward wall I of the coinway below the opening J, and extending through this opening into the coinway is a finger Y, attached to the armature Z of a magnet *a*. The armature is carried by the upper end of an arm *b*, which is pivoted at its lower end to a suitable support *c*, said support in turn serving to hold the magnet in its proper position.

Secured to the door or to suitable conducting-plates *d* are spring-arms *e f*, which extend forwardly past each side of the coinway and are so proportioned and arranged that when a coin is dropped into the coinway it will bridge the space between said spring con-

tact-arms, and thereby complete the circuit through the same and through suitable connections, which will now be described.

Upon reference to Fig. 7 it will be seen that the spring contact-arm *e* is connected to line 1, which leads to a binding-post or main-line terminal 2, the opposite end of said line 1 passing to one member *g* of a circuit-closer *h*, mounted on the shell or casing D. Arm *f* is by line 1ª connected with the magneto-generator 3, which in turn is connected through a line 4 to a contact plate or finger 5, arranged in the path of the inner end of the hook V, making contact therewith when the receiver is on the hook and completing the circuit through a spring 6 and a line 7 back to the main-line terminal 8. The bell 9 is included between the lines 1 and 7.

One side of the magnet *a* is connected to the second terminal *i* of the circuit-closer *h*, while the opposite side of the magnet is grounded through a line 10. The telephone-circuit is shown in dotted lines in Fig. 7, and when the receiver is lifted from the hook said circuit is completed through spring contact-plates 11 and 12.

A switch or contact-closer *j* is placed in the main line under the control of the central office. Normally the generator-circuit is open and is closed by the deposit of a coin therein, as indicated in dotted lines in Fig. 3 and in full lines in Figs. 5 and 7. The coin, as will be seen upon reference to Figs. 3 and 5, is held up by the plunger or ejector K. After the generator has been operated, and the central office thereby called, the user of the telephone lifts the receiver from the hook and in so doing permits the spring W to come into action, thereby moving the frame and withdrawing the plunger from the coinway, permitting the coin to drop down and rest upon the finger Y, which extends inwardly through the opening X. (See Fig. 6.) If the central office can obtain the person desired by the user, the main-line circuit is closed in the usual manner. After the conversation is terminated the user hangs the receiver on the hook and in so doing rocks the lever and draws the frame inwardly, causing the plunger or ejector K to knock the coin off from the supporting member Y through the opening H into the box. Should it happen, however, that the person desired cannot be reached, the central office will so inform the user, at the same time closing the contact *j*, while the user operates the contact-closer *h*, thereby energizing the magnet *a*, causing the attraction of the armature *i* and the withdrawal of the supporting member or finger Y from beneath the coin, allowing the coin to pass down through the coinway into the receiver F.

It is manifest that a different arrangement of circuits may be had in connection with the mechanism described, and I do not therefore desire to limit myself to the inclusion of the devices in the generator-circuit. It is also conceivable that the invention may be modified as to details of arrangement without departing from the spirit thereof, and the broader claims are to be construed accordingly.

Having thus described my invention, what I claim is—

1. In combination with a telephone-casing, a coinway or channel formed adjacent thereto; a plunger projecting into said channel; a receiver-support; connections intermediate the support and the plunger for normally holding the plunger in the channel when the receiver is on the support; a finger projecting into said coinway at a point below said plunger and arranged to receive and hold the coin when the plunger is retracted; and means under control of the central office for withdrawing said finger from beneath the coin and permitting the coin to pass through the coinway or channel to the outside of the casing.

2. In combination with a telephone-casing; a coinway or channel formed adjacent thereto; a plunger or ejector standing in said channel; a receiver-hook; means intermediate the hook and the plunger for normally holding the plunger in the channel when the receiver is on the hook; circuit-terminals arranged adjacent to said coinway and adapted to be bridged by the deposit of a coin; means for retracting the ejector or plunger as the telephone-receiver is lifted from its hook; a finger normally projecting into said coinway at a point below the ejector or plunger; and means under control of the central office for withdrawing the finger from beneath the coin and permitting the same to pass out of the coinway or channel to the outside of the casing.

3. In combination with a telephone-casing, a coinway or channel having an opening therein leading to the interior of the casing; a plunger or ejector extending into said coinway or channel opposite the opening; a hook; means intermediate said hook and the plunger for normally holding the latter in the coinway or channel when the receiver is upon the hook; means for moving the ejector from the coinway or channel; a coin-support projecting into the coinway or channel at a point beneath the plunger or ejector; and means under control of the central office for withdrawing the coin-support and permitting the coin to pass down through the coinway to the outside of the casing.

4. In combination with a telephone-casing; a coinway or channel formed adjacent thereto; circuit-terminals arranged to be bridged by a coin deposited in the coinway or channel; an ejector or plunger normally projecting into said coinway or channel and forming a temporary support for the deposited coin and holding the same between the circuit-terminals; a finger extending into said coinway or channel; means for retracting the ejector or plunger from the coinway; and means for securing a return movement thereof and forcing the coin into the interior of the casing.

5. In combination with a telephone-casing;

a coinway or channel formed adjacent thereto; circuit-terminals arranged to be bridged by a coin deposited in the coinway or channel; an ejector or plunger normally projecting into said channel or coinway and forming a temporary support for the deposited coin and holding the same between the circuit-terminals; a finger extending into said coinway or channel; means for retracting the ejector or plunger from the coinway; means for securing a return movement thereof and forcing the coin into the interior of the casing; and means for withdrawing the finger from the coinway; whereby the coin may be removed from the coinway into the interior of the casing, or be permitted to pass down through the coinway to the exterior of the casing.

6. In combination with a telephone-casing, a coinway or channel formed adjacent thereto; circuit-terminals adjacent to said coinway and arranged to be bridged by a coin deposited in said coinway or channel; a plunger or ejector normally standing in said coinway or channel and forming a temporary support for the deposited coin; means for removing said plunger or ejector from the coinway or channel and securing a return movement thereof to force the coin from the coinway or channel into the interior of the casing; a finger normally projecting into the coinway; and an electromagnet under the control of the central office for withdrawing said finger from the coinway or channel, substantially as and for the purpose specified.

7. In combination with a telephone-casing, a coinway or channel formed adjacent thereto and having an opening in the side thereof leading to the interior of the casing; circuit-terminals adjacent to said coinway; a reciprocating ejector or plunger opposite the opening; a hook; connections intermediate the hook and plunger for holding the plunger in the coinway when the receiver is on the hook; a spring for moving said plunger in the opposite direction; a finger projecting into said coinway at a point below the plunger; and an electromagnet under the control of the central office for removing the finger from the coinway.

8. In combination with a telephone-casing, a coinway or channel formed adjacent thereto and having an opening leading to the interior of the casing; a reciprocating plunger moving into the coinway opposite said opening; a receiver-hook; connections intermediate said receiver-hook and the plunger for normally projecting the plunger into the coinway or channel when the receiver is on the hook; a spring for removing the plunger from the coinway or channel when the hook is relieved of the weight of the receiver; a finger extending into the coinway or channel at a point below the plunger; and an electromagnet, under the control of the central office, for withdrawing the finger from the coinway or channel.

9. In combination with a telephone-casing, a coinway or channel formed adjacent thereto and having an opening leading to the interior of the casing; a reciprocating frame mounted in the casing; a plunger or ejector carried by said frame, said plunger working across the coinway in line with the opening formed therein; a rock-shaft mounted in the casing; an arm extending from said rock-shaft up to the frame; a receiver-hook engaging a second arm formed on the rock-shaft; a spring for moving the frame in opposition to the weight of the receiver when placed upon the hook; an electromagnet under the control of the central office; a pivoted armature for said magnet; and a finger connected to said armature and normally extending into the coinway or channel at a point beneath the plunger or ejector.

10. In combination with a telephone-casing; a coinway or channel formed adjacent thereto; circuit-terminals mounted adjacent to said channel; an ejector or plunger normally projecting into said channel; a hook; connections intermediate the hook and plunger for holding the plunger in the coinway when the receiver is on the hook; a finger also projecting into the channel beneath the plunger; an electromagnet for withdrawing said finger from the coinway or channel; and circuit-closers h, j included in a circuit leading from said electromagnet.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. EGAN.

Witnesses:
J. A. GRAHAM,
W. A. ROLLINS.