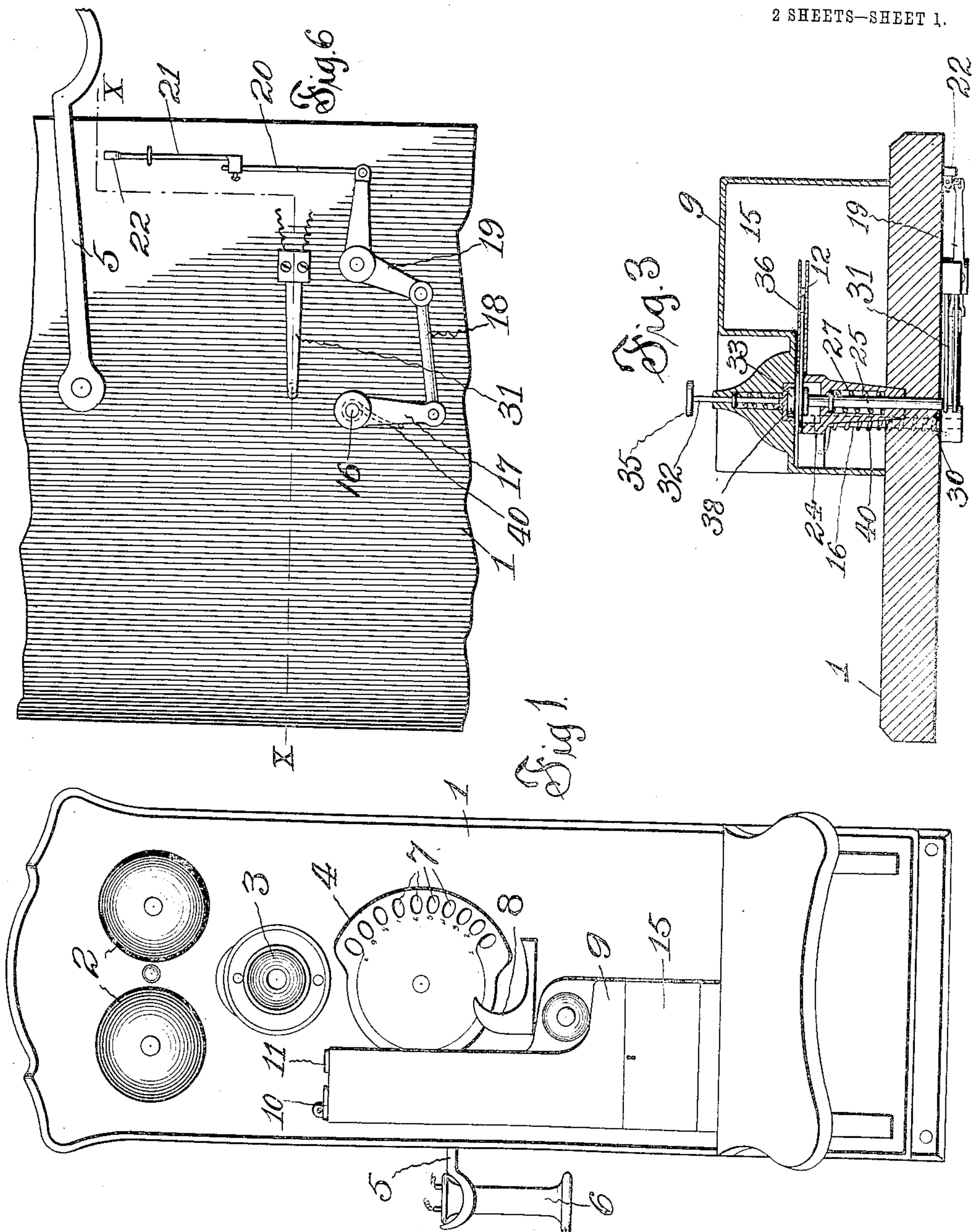


No. 810,491.

PATENTED JAN. 23, 1906.

G. A. LONG.  
TELEPHONE TOLL APPARATUS.  
APPLICATION FILED JAN. 9, 1904.

2 SHEETS—SHEET 1.



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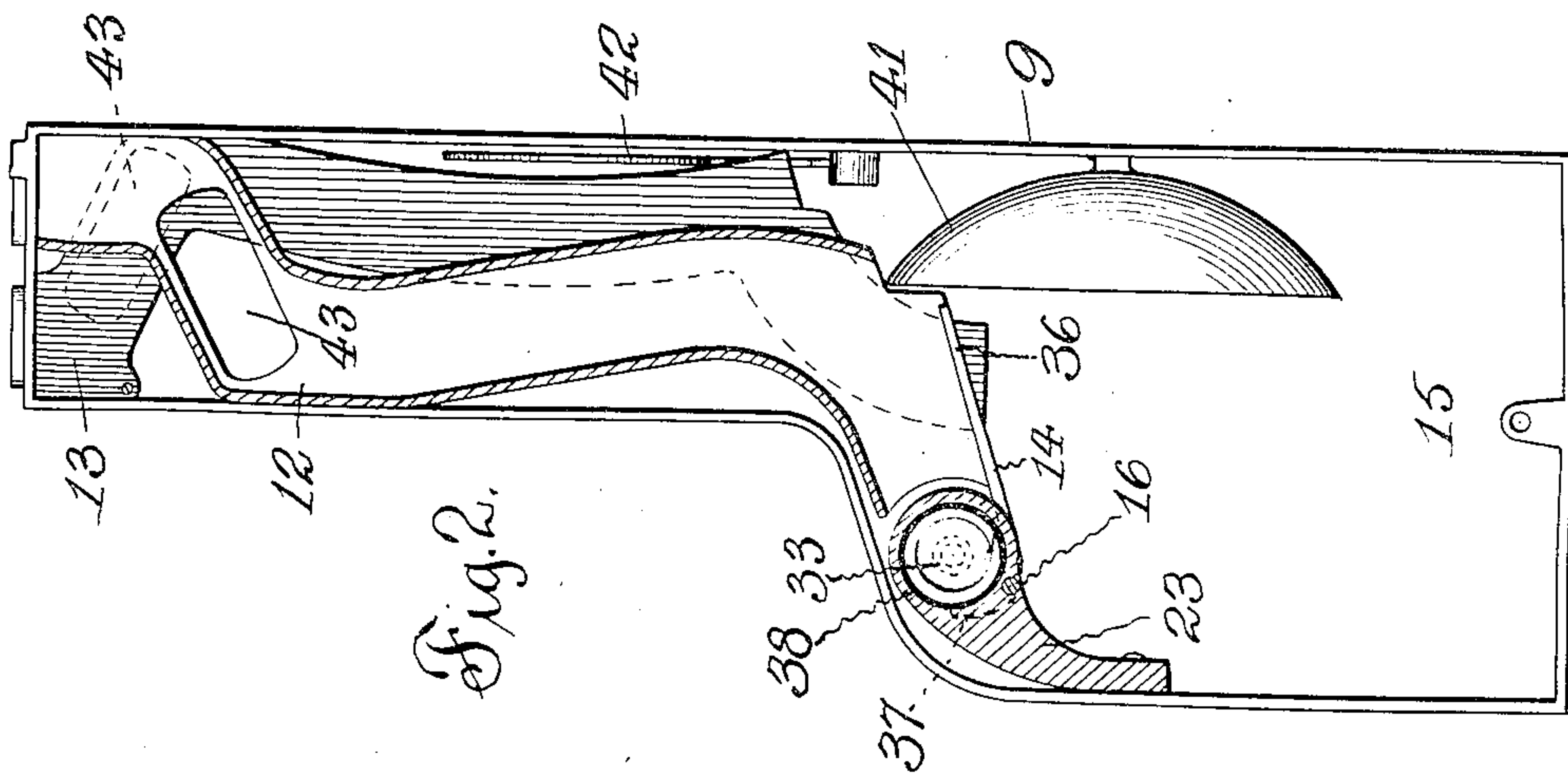
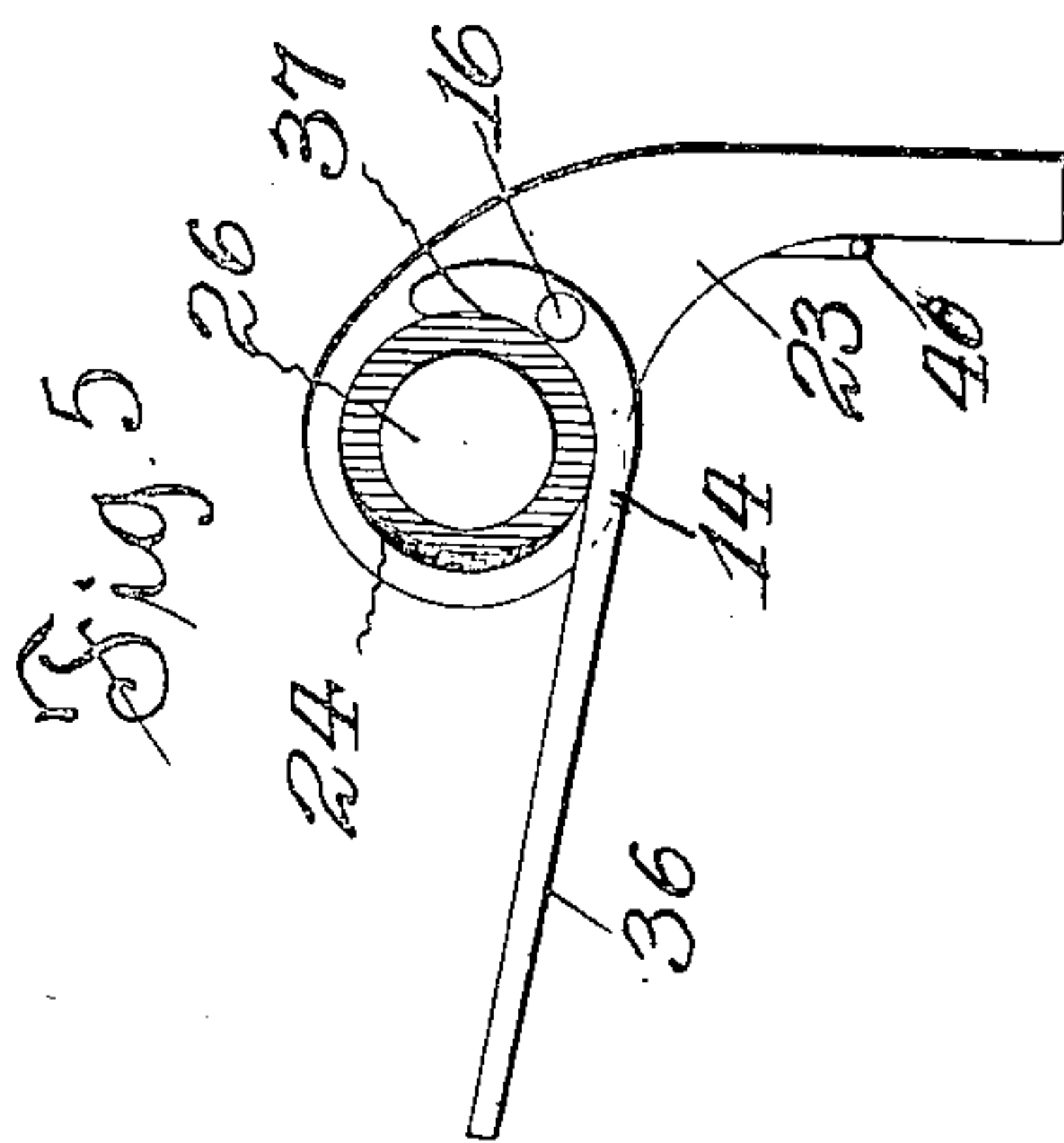
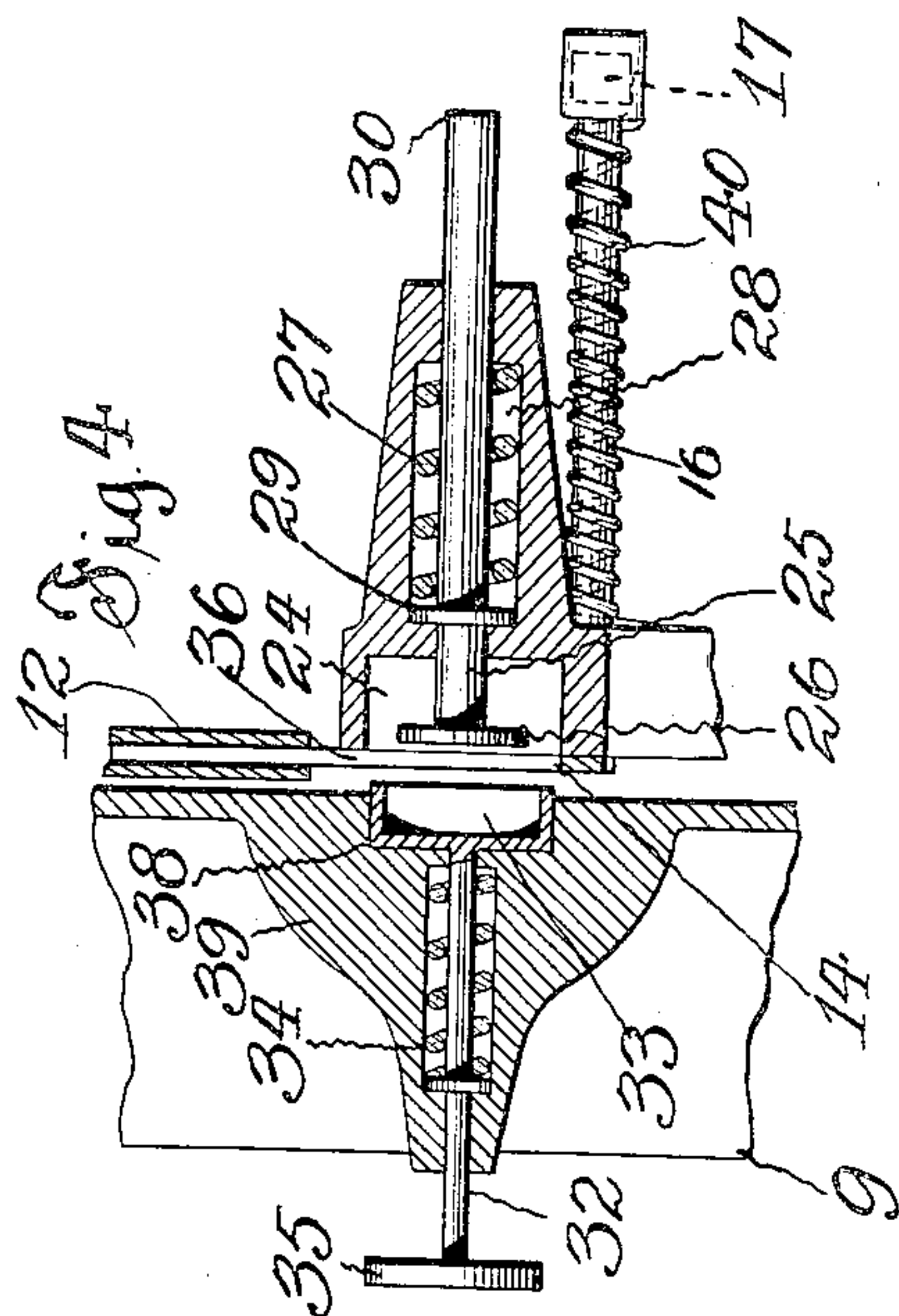
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## TELEPHONE TOLL APPARATUS.

No. 810,491.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed January 9, 1904. Serial No. 188,344.

*To all whom it may concern:*

Be it known that I, GEORGE A. LONG, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Telephone Toll Apparatus, of which the following is a specification.

The invention relates to toll-collecting devices for telephones, and is particularly adapted for use in connection with what is known as the "automatic system,"—that is, a system in which the subscriber selects his own call by the manipulation of certain mechanism without the use of a central operator. The drawings show the devices in connection with such a telephone apparatus, although obviously its uses are not confined thereto.

The objects of the invention are to provide a very simple and effective mechanism using a coin or other check or toll which by the action of the coin and manipulation by the operator will secure the desired call.

A further object is to provide a device of the class specified which while not interfering with the switch-hook lever and its ordinary uses will prevent use of the instrument until the proper token or coin is deposited.

A still further object of the invention is to provide a sectional contact-plunger one section of which may be operated without moving the other until a proper coin or token connects the two.

Figure 1 is a view in front elevation of a set of telephone instruments with a toll-collecting device applied thereto. Fig. 2 is a view of the toll-box, partially in section, taken from the rear. Fig. 3 is a cross-section view through the toll-box on the lines of the call-button and plunger as denoted by X X, Fig. 6. Fig. 4 is a detail sectional view, on enlarged scale, of the call-button and appurtenant parts. Fig. 5 is a detail view of the coin-ejecting mechanism. Fig. 6 is a detail view, on enlarged scale, showing the arrangement of the transmitter-hook lever, calling contacts, and coin-ejecting connections.

In the accompanying drawings the numeral 1 denotes the face-board of a set of telephone instruments of the "automatic type," 2 the call-bells, 3 the transmitter, and 4 the call-selecting dial. The numeral 5 denotes the receiver-hook, and 6 the receiver. These

parts being all well known in the art a detailed description is deemed unnecessary.

Ordinarily in the use of such an instrument the subscriber first removes the receiver from the hook, placing his instrument in connection with a central station where all lines converge, by inserting a finger in the various openings 7 of the call-dial and rotating said dial until the proper number has been designated. By bringing the finger each time to a position of rest against the finger-clip 8 connection is made with any desired line. The subscriber is enabled by listening to tell whether or not the line is clear. If clear, he pushes a button, which rings the call-bells at the other instrument. Roughly, this is the operation of the automatic system which requires no central.

In adopting a pay-station device to this system of telephony I provide an apparatus wherein the push-button by which the call-bells at the second instrument are rung is operative only through the medium of the coin or token demanded in payment for the use of the instrument.

The toll-collecting device herein shown and described, which illustrates one embodiment of my invention, consists of a casing 9, secured to the front board of the said telephone instrument and provided at or near its top with an opening 10, which connects with a coin-channel 12.

A supporting member 23 is cored out, as at 24, to form a recess, and centrally-arranged with reference to this recess is a contact-plunger 25, having an enlarged head 26. This plunger is normally pressed outward to the position shown in Fig. 2 by a spring 27, arranged in a recess 28 and abutting at one end against a collar 29, secured or formed on the contact-plunger. All of the several parts are arranged within the casing 9 and secured thereto, although the support 23 and the plunger project rearwardly through the face-board of the telephone instrument, with the end 30 of the plunger 25 adjacent to a contact making and breaking device 31.

Arranged in the same axial line with the plunger 25 is a plunger 32, terminating adjacent to the head 26 of the plunger 25 in a cup-shaped member 33. A spring 34 normally holds this plunger at the outer limit of its play, and a button 35 is provided for manipu-



lating the plunger. It is to be noted that a depression of the button 35 under ordinary circumstances will simply carry the cup-shaped member 33 over the head 26 without moving the latter.

A coin-stop 14 is pivotally mounted in the casing below, but in line with the coin-channel 12, this coin-stop being positioned in operative relation with the plunger-heads 26 33, so that a coin falling from the coin-channel 12 is positioned by the coin-stop 14 between the oppositely-disposed ends 26 33 of the plungers 25 32. This coin-stop 14 has a tail-piece 36, which in one position acts as a bottom for the coin-channel 12 to guide the coin on the coin-stop 14 and in another position acts as a guide down which the coin may run and fall into the coin-box 15.

It will be clearly seen that if the button 35 is pressed while a coin is resting on the coin-stop 14 this coin will transmit the motion of the plunger 32 to the plunger 25, pushing it backward against the force of the spring 27 until the end 30 operates the contacts 31, it being understood that the head 33 is made of substantially the same diameter as the size of the coin or token to be used in payment for the use of the instrument. This coin-stop 14, as stated above, is mounted on a shaft 16, which extends through the front board of the telephone instrument and has on its inner end a lever 17. This lever, through a rod 18 and bell-crank lever 19, is connected with an adjustable push-rod 20, the upper section 21 of which terminates in a head 22 underlying the path of movement of the receiver-hook lever 5. Thus the connections between the coin-stop 14 and the receiver-hook lever 5 are such that the movements of the latter control the positions of the former.

A spring 40 tends to keep the plunger 20 at the upper limit of its play. In the normal position of the parts when the receiver is on the hook the coin-stop 14 is rocked, so that its tail-piece 36 opens the bottom of the coin-channel 12, allowing the coin to drop into the coin-box 15. When the receiver is removed from the hook, the spring 40 rocks the coin-stop 14 back to the position shown in Figs. 2 and 5 in a position to catch a deposited coin, which will connect the plungers 25 and 32, so that when the push-button is pressed the contacts 31 will be closed to sound the call-bell at the other instrument.

The operation of the device is as follows, assuming the parts to be in normal position when the receiver is on the hook, the coin-stop being rocked up, so that its tail-piece is depressed, forming an opening through which a coin may fall into the money-box 15: The receiver is first removed from the hook, releasing the plunger 20 and permitting the spring 40 to rock the coin-stop down to the position shown in Figs. 2 and 5. The desired connection is next made by rotating the call-dial 4,

and it is determined whether or not the line is clear. If clear, a coin is dropped into the slot 10, falling through the channel 12 and coming to rest on the coin-stop 14 between the plunger ends 26 38. The button 35 is pressed, moving the plunger 32 inward, and through the medium of a coin forces the plunger 25 back until its end 30 closes the contacts 31, ringing the bells at the other instrument. After the use of the instrument is finished the receiver is hung on its hook, depressing it, which in turn depresses the plunger 20, which rocks the coin-stop 14 up, the tail-piece 36 being depressed, permitting the coin to drop out into the coin-box 15.

In order to avoid any possible clogging of the instrument by the accidental deposit of two coins, I provide a recess 38 in the extension 39, in which the cup-shaped member 33 normally rests. If two coins are dropped into the channel, the first is positioned on the coin-stop 14, connecting the two plungers when 32 is pressed in, the outer walls of the member 33 following up the coin cutting off the channel, and so preventing the second coin from falling into a position to clog the operation of the parts.

By locating a signal device, such as the bell 41, so that it will be sounded by a falling coin or, if desired, by providing an additional slot 11 and channel 13 with a gong 42, I am enabled to use this local toll device for long-distance service. Under these conditions a central operator makes the desired connection and is apprised of the payment for the service by the sounding of the signal as the coins are dropped.

I claim as my invention—

1. The combination with a set of telephone instruments including a receiver and a receiver-hook lever, of a toll-collecting device comprising a coin-channel, a coin-stop pivotally supported at its lower end forming a coin-pocket, independent plungers arranged at each side of said coin-pocket adapted to be connected through a coin deposited on the coin-stop to ring the bells at the called station, and operative connections between said coin-stop and said receiver-hook lever for rocking said coin-stop, substantially as described.

2. In a toll-collecting device for use with automatic telephones the combination with the telephone instrument including the switch-hook lever, of a casing having a coin-slot and a coin-channel communicating therewith, independent plungers arranged in axial alignment and located at the bottom of said coin-channel, a coin-stop closing the lower end of said coin-channel and located between and in operative relation to the opposing ends of the said plungers whereby a coin deposited on the said coin-stop will form a connection between the said plungers, and operative connections between said coin-stop and said switch-hook lever, substantially as described.



3. In a toll-collecting device for use with automatic telephone systems, the combination with the instrument including a switch-hook lever, of a casing having a coin-slot, and a channel registering with said coin-slot, independent plungers in axial alinement with their opposing ends located at each side of the channel, a pivotally-mounted coin-stop forming a bottom for the channel and arranged in operative relation to the plunger ends whereby a coin dropping through the channel is positioned on the coin-stop between the plunger ends, and means operated by the switch-hook lever for moving said coin-stop, substantially as described.

4. A toll-collecting device for use with automatic telephone systems comprising a casing having a coin-slot and coin-channel, independent plungers in axial alinement with their opposing ends located at each side of the coin-slot, and a pivotally-mounted coin-stop adapted in one position to close the bottom of said coin-channel and position a coin between the opposing ends of said plungers and in its other position to open the bottom of said coin-channel and discharge the coin, and actuating mechanism connected with said switch-hook lever for said coin-stop, substantially as described.

5. The combination with a set of telephone instruments including a receiver and receiver-hook lever, and the normally open contacts of the call-circuit, of a coin-channel operatively arranged with reference to said instruments, a pivotally-supported coin-stop forming a coin-pocket at the bottom of said channel, a plunger having one end in operative relation with said contacts and its other end arranged at one side of said coin-stop, a second plunger in axial alinement with said first plunger and having one end arranged on the opposite side of said coin-stop, its outer end being provided

with a button, the parts being so arranged that a coin supported on said coin-stop forms a connection between said plungers whereby a pressure on the said button will move both of said plungers lengthwise to close said contacts, and operative connections between said coin-stop and said switch-hook lever to rock said coin-stop to discharge the coin from the channel.

6. The combination with an automatic telephone instrument including the receiver, the receiver-hook lever, and the normally open contacts for the call-circuit, of a toll-collecting device comprising a coin-channel, a coin-stop forming a bottom for the channel, the plungers in axial alinement with their opposing ends arranged at either side of said coin-stop, the opposite end of one of said plungers being in operative relation to said contacts, operative connections between said coin-stop and the receiver-hook lever, and a spring to move said mechanism when the receiver-hook lever is raised, substantially as described.

7. In a toll-collecting device for use with automatic telephones the combination with the telephone instrument including a switch-hook lever, of a casing having a coin-slot and a coin-channel communicating therewith and having a delivery-orifice, a coin-stop adapted to close said delivery-orifice and form a bottom for said slot, plungers having their opposing ends arranged in operative position at each side of said coin-stop whereby said plungers are connected for lateral movement, and means for moving said coin-stop to open said delivery-orifice and eject a coin.

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