

No. 789,985.

PATENTED MAY 16, 1905.

H. MANRING.
TELEPHONE CUT-OFF.

APPLICATION FILED JULY 14, 1902. RENEWED FEB. 14, 1905.

2 SHEETS—SHEET 1

Fig. 1.

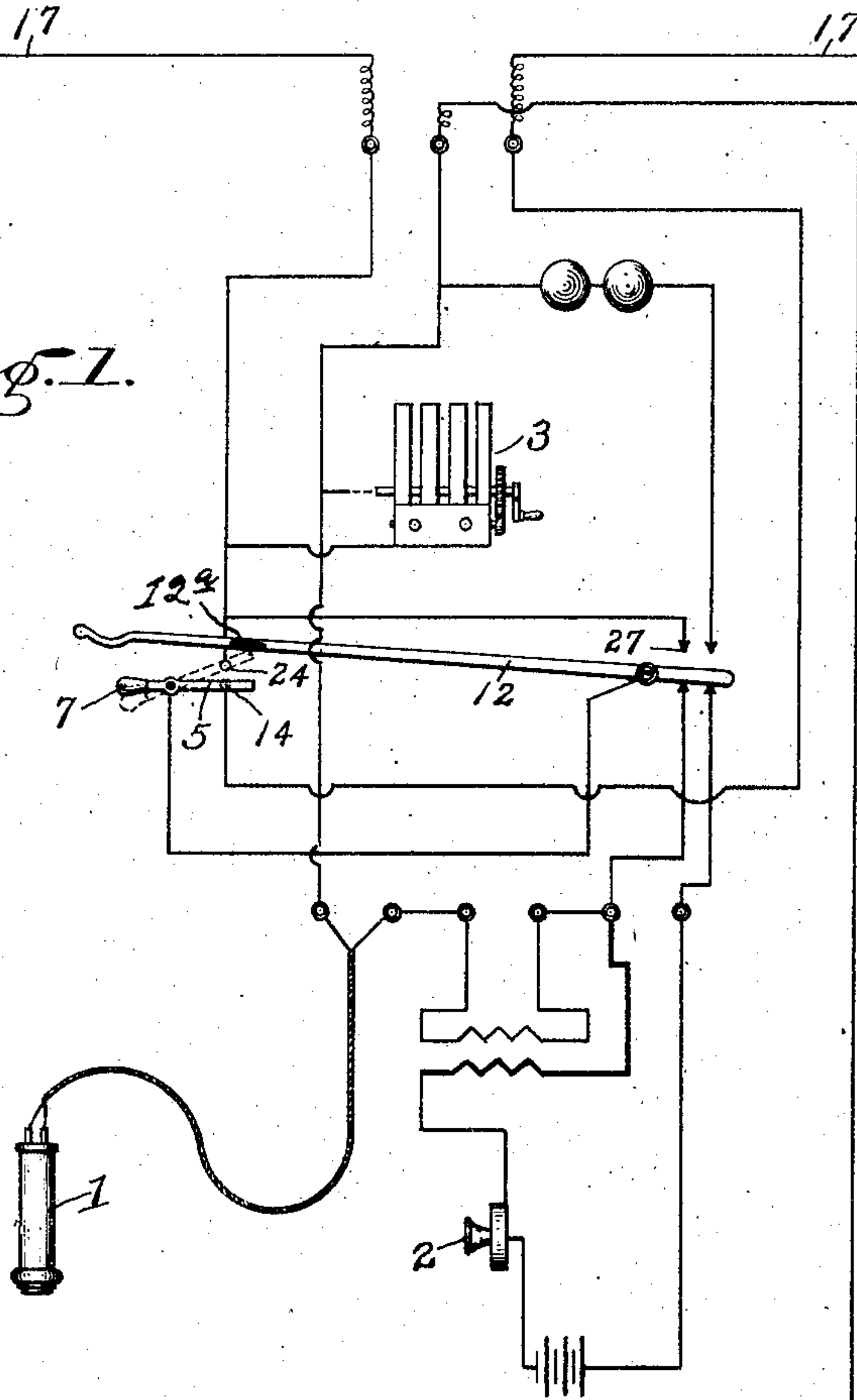


Fig. 2.

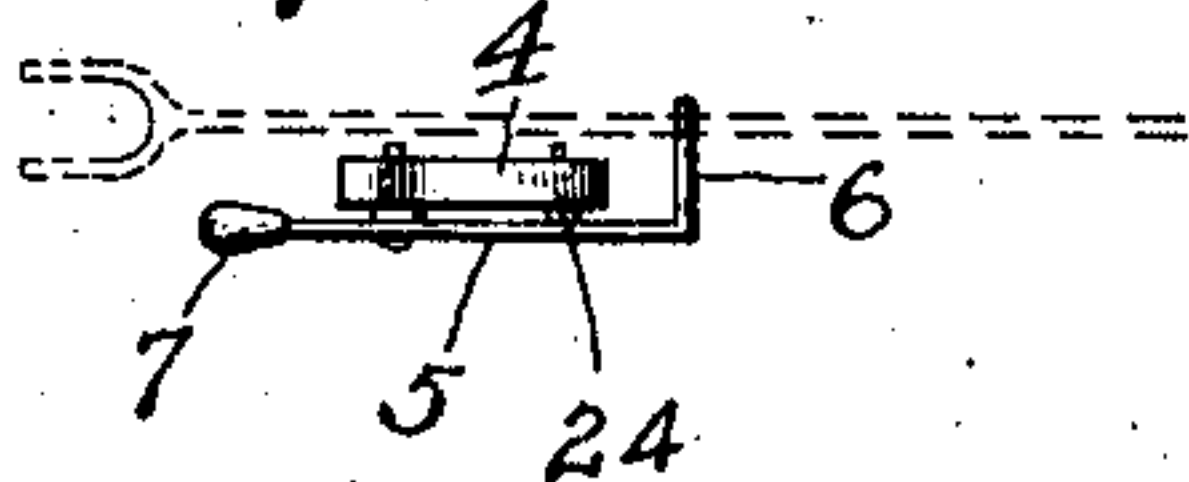
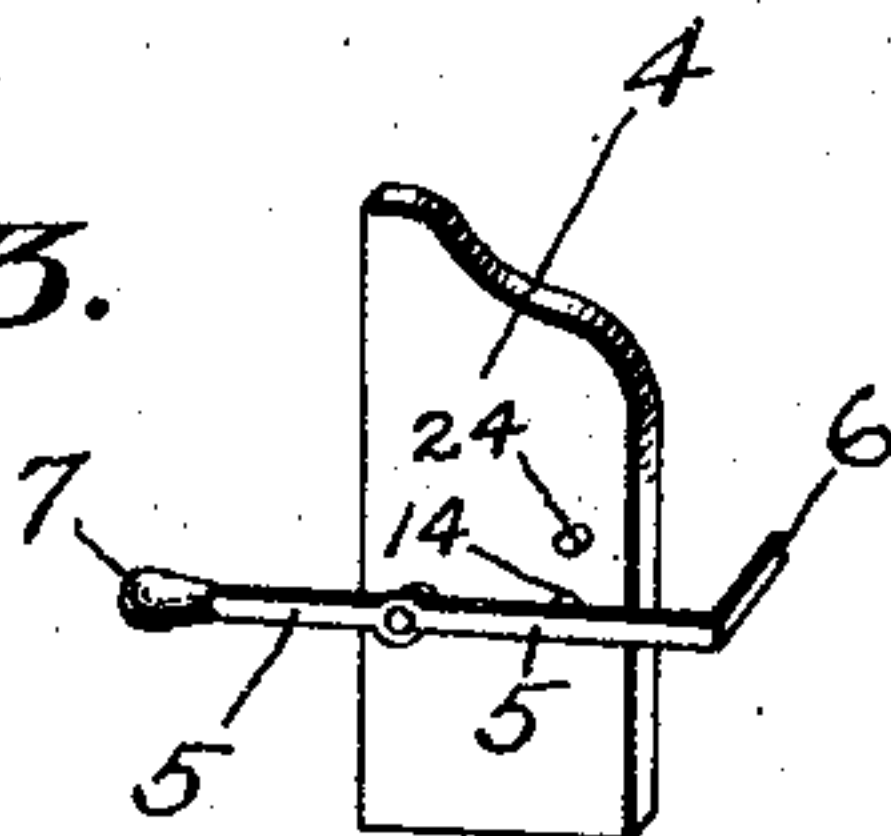


Fig. 3.



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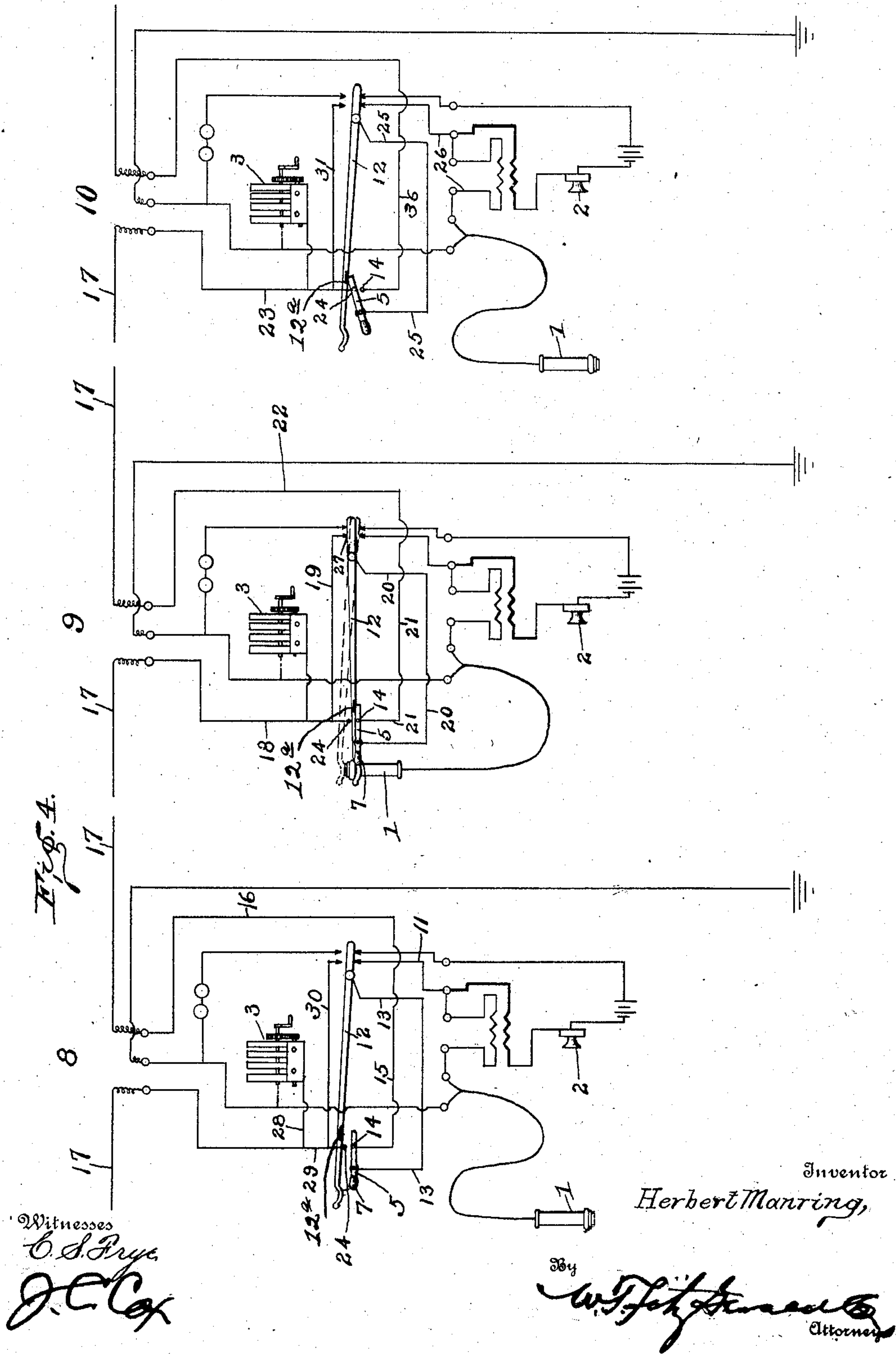
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

HERBERT MANRING, OF WEATHERBY, MISSOURI.

TELEPHONE CUT-OFF.

SPECIFICATION forming part of Letters Patent No. 789,985, dated May 16, 1905.

Application filed July 14, 1902. Renewed February 14, 1905. Serial No. 245,611.

To all whom it may concern:

Be it known that I, HERBERT MANRING, a citizen of the United States, residing at Weatherby, in the county of Dekalb and State of Missouri, have invented certain new and useful Improvements in Telephone Cut-Offs; 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.

My invention relates to certain new and useful improvements in telephone-circuit cut-offs, and is adapted to be used in connection with bridged or multiple-grounded lines.

My device is designed to be used where several telephones are connected to one circuit; and my object is to provide means whereby when two phones are in use the lifting of the receiver from off the receiver-arm on the third telephone will disconnect or otherwise disturb the circuit, so that the communication will be interrupted and the parties talking thus notified that some one is attempting to listen.

It is also my object to provide means to disconnect such phones as are to the right or left of the two phones being used.

Other objects and advantages will be hereinafter made clearly apparent considered in connection with the accompanying drawings, which are made a part of this application, and in which—

Figure 1 is a diagrammatic view of a telephone receiver and transmitter and accessory parts. Fig. 2 is a top plan view of the switch employed in opening or closing the circuit between the different phones. Fig. 3 is a perspective view of the same; and Fig. 4 is a diagrammatic view of a series of telephones, illustrating more clearly the operation of my invention.

My invention is designed more particularly for use upon what is known as "party-lines," where several phones are attached to the one circuit, and also upon long-distance lines, where several different stations are located along the route.

In describing my invention and the accessories deemed necessary to cooperate therewith numerals will be employed, of which 1 represents the receiver, such as is commonly used

in connection with the telephone, 2 the transmitter, and 3 the magneto. Within the telephone-box upon a suitable carrying-frame 4 is an auxiliary switch or cut-off 5, said cut-off having a laterally-projecting arm 6 on one end and a suitable handle 7 on the opposite end. The object of said device will be hereinafter more fully set forth.

Referring to Fig. 4 of the drawings and assuming that the operator at the telephone designated by the numeral 8 desires to communicate with the operator at the telephone designated by the numeral 10 and assuming that all of the receivers are hanging upon the receiver-arms, the operator at station 8 rings the call for station 10. The operator at station 8 then removes the receiver from the arm, thus cutting off the circuit to his left and connecting the circuit to his right. The operator at No. 10, upon hearing his call, also removes the receiver from the arm, thus cutting off the circuit to his left and connecting the circuit to the right. Upon finding that he gets no response from that end of the line or to his right he then pulls down upon the handle 7 of the cut-off switch 5 until the said cut-off reaches the contact-point 24, thus breaking the circuit to the right and completing the circuit to the left. The telephone designated by the numeral 8 and telephone designated by the numeral 10 now being in connection with each other and the subscribers talking to each other, I will trace the circuit from telephone numbered 8 through telephone numbered 9 to the telephone numbered 10. I first start with the line numbered 11, which leads from the transmitter to the receiver-arm 12, thence through the line 13 to the auxiliary switch 5, through said switch to the contact-point 14, thence through the lines 15 and 16 to the line-wire 17, thence to the line 18 in the telephone numbered 9 through lines 18 and 19 to the receiver-arm 12, thence through line 20 to the switch 5, thence to the contact-point 14 through the lines 21 and 22 to the main line 17, thence to the lines 23 in the telephone numbered 10, thence through the contact-point 24, through the switch 5, through the line 25, receiver-arm 12, and line 26 to the receiver 1. In tracing the circuit from telephone 10 back through tele-

phone 9 into telephone 8 I will start with the transmitter 2 of said telephone 10, thence through the wire 26 to the arm 12 into the wire 25, thence through the cut-off arm 5 to the contact-point 24, thence through line 23 to the line-wire 17, thence through wires 22 and 21 to the contact-point 14 on telephone 9, thence through the cut-off 5 onto the wire 20, through the arm 12 to the wire 19, thence through the wire 18 to the line-wire 17, thence through the wires 16 and 15 to the contact-point 14, thence through the cut-off 5 onto the wire 13, thence to the receiver-arm 12, thence onto the wire 11 into the receiver 1 of telephone 8. In tracing the bell-circuit, beginning with the magneto 3 in telephone 8, assuming, of course, that all the receivers are hanging on the receiver-arms, the circuit passes through the wire 28 into the wire 29, thence through the wire 30 to the receiver-arm 12, thence to the wire 13 through the cut-off 5 to the contact-point 14, thence into the wires 15 and 16 to the line-wire 17, thence through the wires 18 and 19 to the arm 12, thence through the wire 20 to the cut-off 5, thence through the contact 14 and wires 21 and 22 to the line-wire 17, thence through the wire 23 to the wire 31, through the receiver-arm 12 to the wire 25, through the cut-off 5 and contact 14, through the wire 36, and so on through all the telephones to the right and left of phone number 8. It will be understood, of course, that the circuit in passing through the wires 18 and 19 and 23 and 31, and so on, will ring the bell upon each telephone. Should the operator at telephone 9 for any reason remove the receiver 1 from the receiver-arm 12, the line will be cut in two, and thereby disconnect the telephones numbered 8 and 10, and thus interrupt their conversation, from the fact that when the receiver-arm is up or in the position shown by dotted lines in telephone numbered 9 the circuit is disconnected at the point marked 27. It will also be seen that by having the switch 5 in the position shown in telephone number 8 that all the telephones to the left of said telephone numbered 8 are disconnected therefrom, and it would be impossible for any of the said telephones to get into communication with any part of the line to the right of said telephone 8 until after the receiver 1 has been placed upon the receiver-arm 12 and the circuit thus closed. It will also be seen by referring to the telephone numbered 10 that by having the switch 5 thrown to the contact-point 24 all the telephones to the right of said telephone numbered 10 will be cut out or disconnected from all the telephones to the left of said telephone 10, thereby establishing a circuit only between the telephones numbered 8, 9, and 10.

Upon reference to Figs. 1 and 4 it will be seen that the receiver-arm 12 is provided with insulation 12^a upon its under side, with which

the end of a switch or cut-off 5 engages, as seen in Fig. 4, to prevent short-circuiting when the switch-hook is depressed, as will be readily understood.

The switch 5 is so located within the telephone-housing that the lateral arm 6 extends beneath the receiver-arm 12, so that when the receiver is hung upon the receiver-hook the downward movement of said receiver-arm causes the switch 5 to assume the position shown in full lines in Fig. 1 and is normally held in that position. It will therefore be seen that when the line is not in use all the switches are resting in a horizontal position and in connection with the contact-point 14, thereby completing the circuit from the left to the right only. If, therefore, the operator at telephone numbered 8 should desire to talk with the operator at No. 9, he rings a number designating that No. 9 is wanted. When the operator at No. 9 answers the phone and receives no reply, he then knows that the party wanting him is on the line to the left of his phone, and in order to get into communication with the phones to the left he pulls down upon the handle 7 of the switch 5, thereby bringing said switch into registration with the contact-point 24, thus completing the circuit from his phone to the phones on his left and disconnecting the circuit to the phones upon his right. It will therefore be obvious that it would be an impossibility for any third party to listen to a conversation without disturbing one or the other of the conversants.

As the construction hereinbefore described is a multiple-bridged device, short-circuiting is prevented when the receivers are all upon their hooks.

What I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described multiple-bridged system of combined automatic and manual cut-offs for telephones on multiple branches, comprising the combination with each telephone-receiver, of a system of circuits, an auxiliary cut-off for each receiver, a receiver-arm, a contact carried by said cut-off, a switch carried by the receiver-arm of each telephone and adapted to engage directly therewith when the receiver is placed on the rack and disengaged therefrom when the receiver is removed therefrom, said cut-off being provided with a handle at one end and at the other end with a lateral projection adapted to engage beneath said arm and actuate the same and connections whereby either telephone may be placed in communication with the telephone to the right or left, and the completing of the circuit from one telephone to the other automatically disconnects the circuit to the phones upon the opposite side of the one being used, thus preventing the disturbing of the conversation between said parties by a party at either one of the other telephones, as set forth.

2. In a multiple-bridged system of com-

bined automatic and manual cut-offs for tele-
phones on multiple branches, the combination
with each telephone-receiver, of a system of
circuits, an auxiliary cut-off for each receiver,
5 a receiver-arm arranged in parallel relation
thereto and in close proximity thereto and
having upon its under side insulated material,
an auxiliary cut-off pivotally mounted in
proximity to said arm and provided at one
10 end with a handle and at the other end with
a lateral projection disposed beneath said arm

to engage said insulating material, a frame
carrying said switch and contact-points on
said frame over which said switch moves, sub-
stantially as and for the purpose specified. 15

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

HERBERT MANRING.

Witnesses:

J. W. MANRING,
S. T. DEAN.