

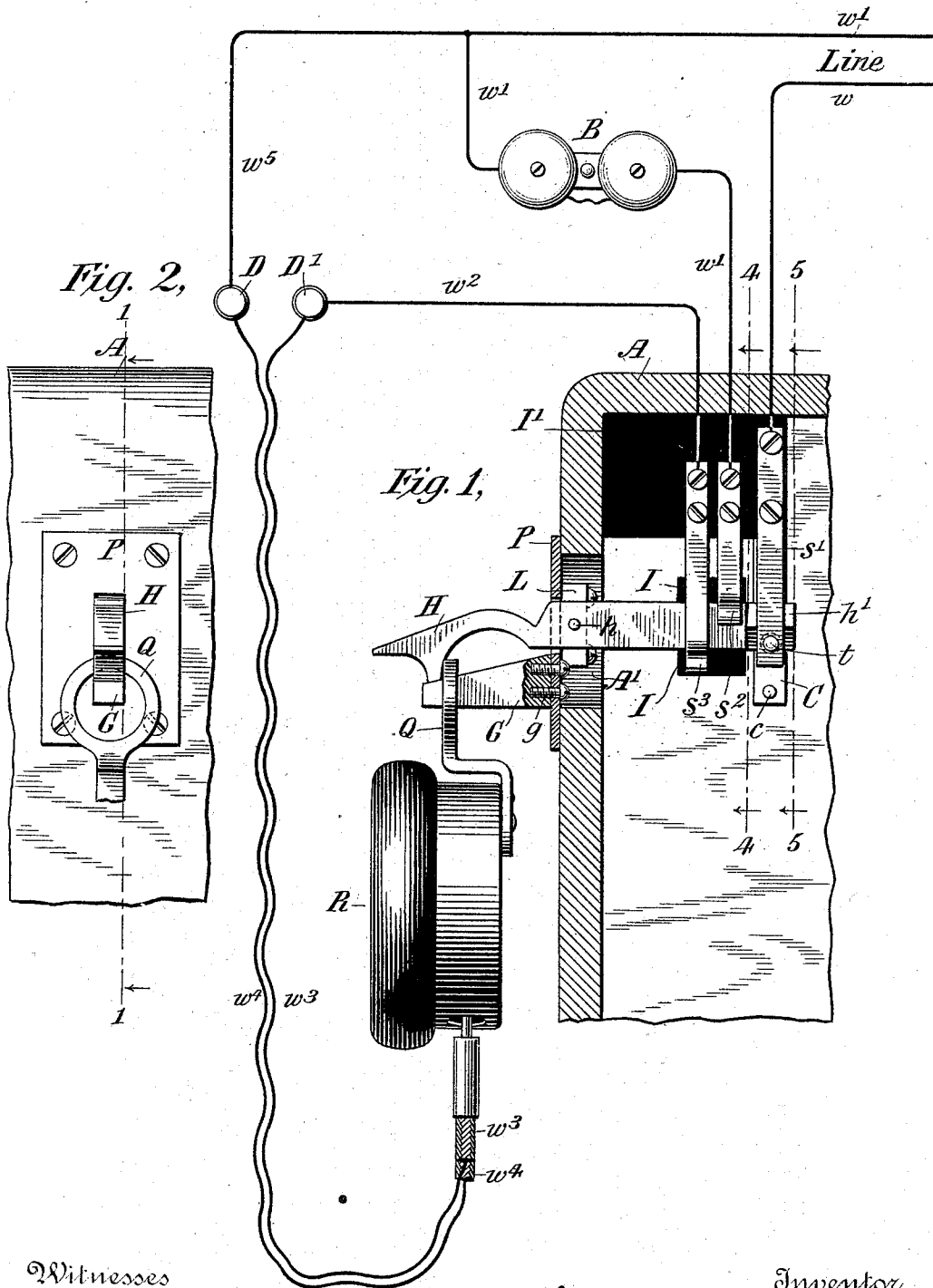
(No Model.)

2 Sheets—Sheet 1.

R. CALLENDER.
TELEPHONE SWITCH.

No. 530,325.

Patented Dec. 4, 1894.



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By his Attorney
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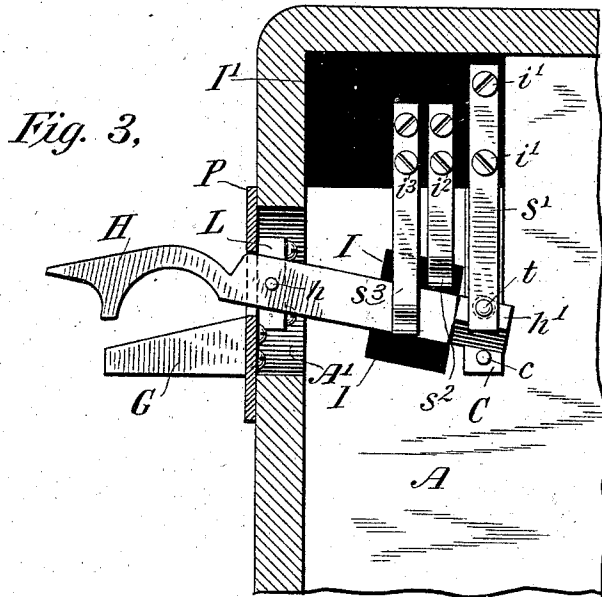


Fig. 4.

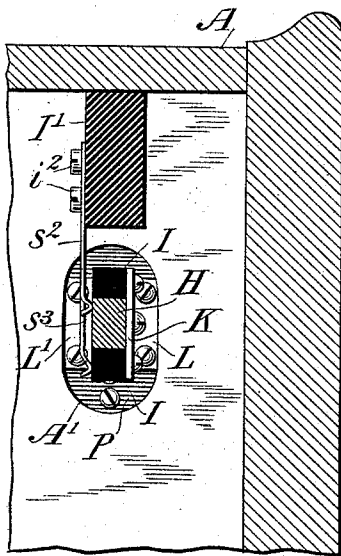
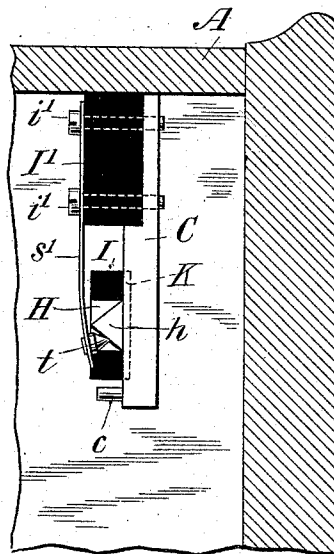


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROMAINE CALLENDER, OF BRANTFORD, CANADA.

TELEPHONE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 530,325, dated December 4, 1894.

Application filed September 15, 1894. Serial No. 523,108. (No model.)

To all whom it may concern:

Be it known that I, ROMAINE CALLENDER, a subject of the Queen of Great Britain and a resident of Brantford, Province of Ontario, Dominion of Canada, but temporarily residing at New York, in the county and State of New York, have made a new and useful Invention in Telephone-Switches, of which the following is a specification.

My invention is directed particularly to that type of telephone switches in which the manipulation of the telephone receiver effects the necessary circuit changes from the bell circuit to and through the receiver circuit, and vice versa, and its object is to obtain certainty of operation in the switching apparatus under all conditions of operation.

My invention will be fully understood by referring to the accompanying drawings, in which—

Figure 1 is a part diagrammatic, part elevational and part sectional view of the circuits, circuit connections, bell, telephone receiver and switching devices arranged in accordance with my improvement. Fig. 2 is a detail side elevational view of the mechanical switch actuating parts as seen looking at the body of the apparatus in Fig. 1 from the left toward the right hand side of the drawings, the receiver being broken away. Fig. 3 is a sectional view taken through Fig. 2 on the line 1—1, and as seen looking in the direction of the arrows upon that figure from right to left, the receiver, however, being removed and the switch in its upper position. Fig. 4 is a sectional view taken through Fig. 1 on the line 4—4, and as seen looking in the direction of the arrows upon that figure from right to left, and Fig. 5 is a similar sectional view taken through Fig. 1 on the line 5—5, and as seen looking in the same direction.

Referring now to the drawings in detail: A represents an ordinary telephone box; B, a well known form of trembler bell, and R a magneto receiver (preferably of the form shown) having attached to its back a sustaining extension lug or ear Q.

D and D' are binding posts which connect the receiver by conductors $w^4 w^3$ to the branch wires w^5 and w^3 , the former being connected to the line wire w' which latter is normally connected through the bell B with a contact

spring s^2 , the conductor w^2 being connected to a similar contact spring s^3 , the line wire w being connected to a strong yielding switching spring s' having a contacting projection t at its free end. The switching contact springs s' , s^2 and s^3 are secured on the inside of the telephone box to an insulating block I by screws $i' i', i^2 i^2, i^3 i^3$. See Figs. 3, 4 and 5.

G is a sustaining bracket secured to a metal plate P by screws $g g$, said plate being in turn similarly secured to the telephone box A.

H is the switch lever which is pivoted at h to a block L secured by screws to the plate P, the outer end of said switch lever being of curvilinear form as shown and adapted, when in the position shown in Fig. 1, to rest upon the inclined surface of the bracket G. The inner end of the switch lever H, which is of metal, is provided with beveled faces h and h' upon which the conducting lug or extension t in the free end of the spring s' rests firmly in whichever position the lever H may be left. C is a metallic guide block for the inner end of said switch lever and is secured in a vertical position to the insulating block I' by the same screws $i' i'$ which hold the switch spring s' .

c is a stop pin at the lower end of the guide block C adapted to limit the upward throw of the switching lever H.

I I are insulating blocks secured by screws to the metallic plate K which in turn is simultaneously secured to the switch lever H so that their outer faces shall rest respectively under the contact springs s^2 and s^3 as the switch is thrown either up or down. See Fig. 4.

The operation of my improved switch is as follows: Under the conditions shown in Fig. 1, the receiver R is hanging upon the inclined bracket G and is held from sliding off said bracket by the curved extension of the switch lever H. Consequently the line circuit is closed as follows: by conductor w , switch spring s' , contact point t , beveled or inclined face h , lever H, contact springs s^2 , conductor w' , bell B, conductor w' to line, so that any manipulation of the call generator at a distant station will ring the bell B. The subscriber, therefore, on receiving a call removes the receiver R from the bracket G and in doing so causes the curved switch lever H to be lifted

until the contact point t sustained by the strong conducting spring s' passes upon the beveled or inclined face h' , thereby causing the switch lever H to assume the position shown in Fig. 3, simultaneously breaking contact with the central switch spring s^2 , immediately after making contact between the switch lever and the remaining switch spring s^3 . The bell circuit is now ruptured and a new circuit is made as follows: from line w , by spring s' , contact point t , inclined or beveled face h' , switch lever H, left hand switch spring s^3 , conductor w^2 , to binding post D', conductor w^3 , through the receiver, conductor w^4 , binding post D, conductor w^5 , conductor w' to line, the bell circuit having been ruptured, as will be remembered, between the contact spring s^2 and the switch lever H. After the subscriber has held the usual conversation, he returns the receiver to the bracket G and with the forefinger of the hand which conveys it to this point, presses down upon the switch lever H until, through the snapping action of the spring s' and contact point t , it is caused to assume the position shown in Figs. 1, 4 and 5.

It will be observed that owing to the inclination of the bracket G the receiver R will not remain in position thereon unless the switch has been placed in the position shown in Figs. 1 and 5, making it therefore absolutely necessary that the subscriber shall return the switch to normal position before his receiver will be held in place.

I am aware that numerous devices have been heretofore invented for causing a telephone receiver to effect the necessary circuit changes from the bell circuit to its own circuit, and vice versa, which devices are dependent in some instances upon the weight of the receiver, and in others upon certain manipulations to be effected by the subscriber, and I make no claim of such a generic nature as will include apparatus of this generic type. I believe it is new with me, however, to provide a permanent or rigid sustaining device for the receiver in combination with a switch,

which sustaining device fails to sustain the receiver unless the switch be in proper position so that by their combined action the receiver is held in place and the circuit closed through the call bell, and my claims are generic as to this feature.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A telephone sustaining device in the nature of an inclined bracket secured to a telephone box, in combination with a telephone receiver having a sustaining extension lug or ear adapted to rest upon the inclined bracket and a switch lever provided with circuit connections for shifting the circuit from the call bell to the receiver and vice versa and means for maintaining the telephone in suspended position upon the inclined bracket when the circuit is through the call bell.

2. A telephonic apparatus provided with a telephone sustaining device consisting of a permanent or rigid non-retaining support and a switch lever provided with means for retaining a telephone receiver upon said support through the united agency of the support and the retaining device, the arrangement being such that the receiver cannot be held by the support when the circuit is closed through it.

3. A sustaining device for a telephone receiver which fails to hold or sustain the receiver when it, the receiver, is being used, in combination with a switch and circuit connections to the call bell and receiver, said switch being provided with means acting conjointly with the support to hold or sustain the receiver only when the circuit is closed through the bell.

In testimony whereof I have hereunto subscribed my name this 13th day of September, 1894.

ROMAINE CALLENDER.

Witnesses:

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