

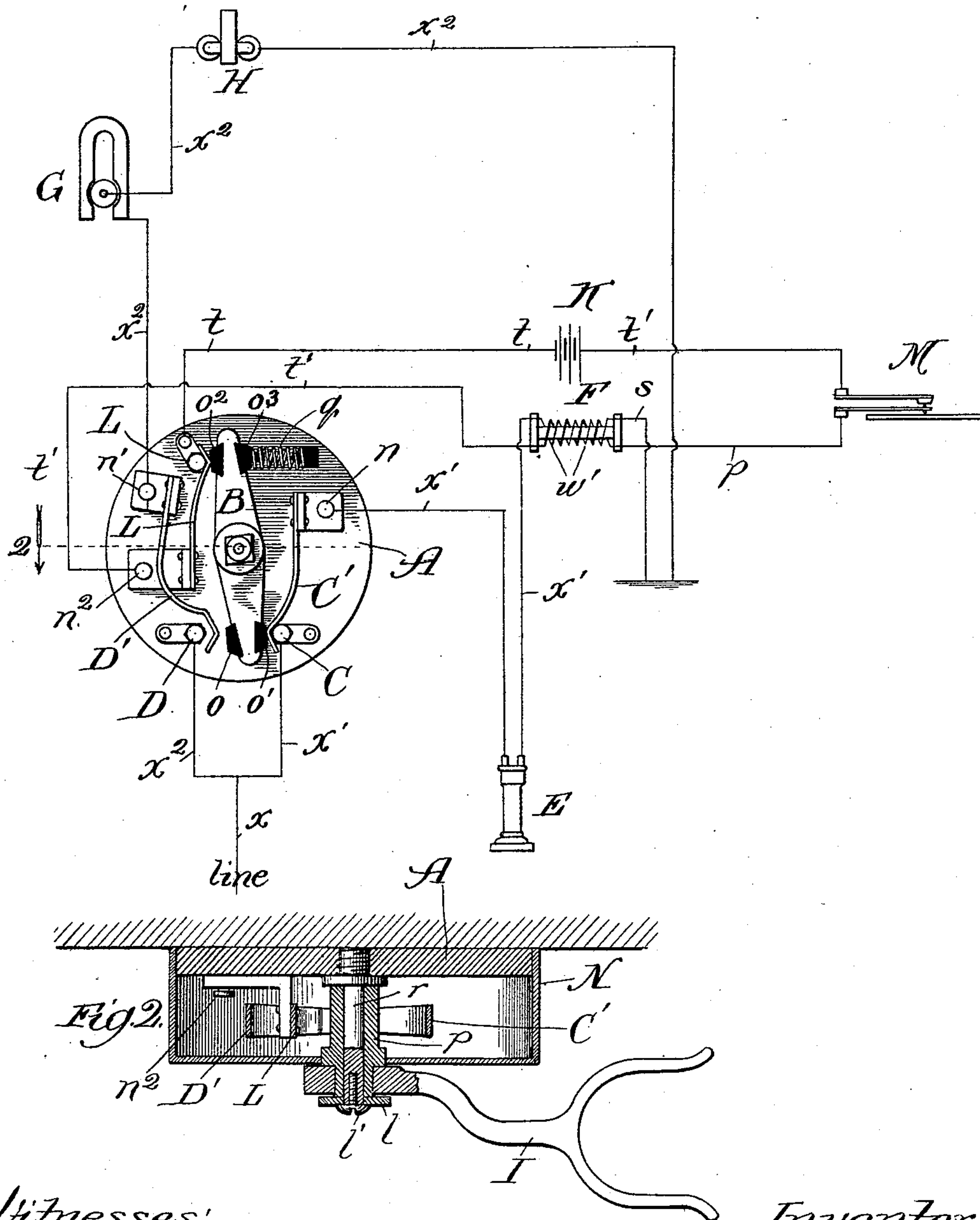
(No Model.)

A. F. W. MEYER.
TELEPHONE SWITCH.

No. 538,454.

Patented Apr. 30, 1895.

Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TELEPHONE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 538,454, dated April 30, 1895.

Application filed January 11, 1895. Serial No. 534,520. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. W. MEYER, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Telephone-Switches, of which the following is a specification.

My invention relates to an improvement in the switch-mechanism employed in a telephone for producing, at will, the communicative or non-conductive condition of the main-line circuit between instruments thereon, and which circuit is commonly maintained normally open at the instrument by the weight of the suspended receiver on the spring-hook or support connected with the switch and closed by the contact produced by the recoil of the spring-hook or support on removing therefrom the receiver.

Referring to the accompanying drawings, Figure 1 shows my improved switch mechanism, with its inclosing-case removed, in front elevation in circuit with the other features of an ordinary telephone represented diagrammatically; and Fig. 2 is a section through the switch mechanism, taken at the line 2 on Fig. 1 and viewed in the direction of the arrow, and showing the inclosing-case and receiver-support in position.

As shown, my improved switch-mechanism attachment is represented in full operative size.

A is the base, which I prefer to form in disk-shape of some insulating material, such as hard rubber or vulcanite, though it may be of other shape and of metal, when the parts it supports would be suitably insulated. On the base, preferably at its center, is a rigid post carrying a switch-lever B fulcrumed between its extremities upon the post at a sleeve p extending from the lever to surround the post, the lever being controlled by a spring q , represented as an expansion coiled-spring tending to force, in the direction away from it, the end of the switch-lever with which it is connected. The switch-lever B which is essentially an electrically non-conducting lever, may be formed entirely of insulating material, or, if formed of metal, it should carry insulating pieces at points o , o' , o^2 and o^3 where it operates to produce electrical contacts, as hereinafter described.

C and D are the terminals for the branches

x' and x^2 of the incoming end of the line-wire x , said terminals being shown as contact-posts, though they may comprise any other suitable species of contacts; and one end of the switch-lever extends between these terminals and is there flanked by contacts C' and D' , shown in the form of leaf-springs proceeding, respectively, from metallic heads n and n' , or binding-posts. The contact C' forms a separating connection in the branch x' , which proceeds from the binding-post n through the receiver, indicated at E, and thence through the secondary winding w' of the induction-coil, indicated at F, to ground (or to the main-line). The contact D' forms a separating connection in the branch x^2 , which proceeds from the binding-post n' through the magneto-generator, indicated at G, and thence through the call-bell, indicated at H, to ground (or to the main-line).

I is the support on which to suspend the receiver E, and which is shown as an arm bifurcated at one end and fastened at its opposite end to the spring-controlled sleeve p .

Where the character of telephone to which my improved switch-mechanism is applied is a magneto-telephone employing no local primary circuit, and wherein the receiver may also serve as a transmitter, the parts thus described are all that are necessary to my improvement. Then when the receiver is suspended on the support I, its weight holds the switch-lever B, against the resistance of the spring q , at the point o against the free end of the contact-spring D' and forces the latter against the contact D to maintain normally closed the circuit on the line x^2 containing the magneto-generator and the bell H; whereas, when the receiver is taken down from its support, the spring q forces the switch-lever, at its point o' , against the spring C' to bind the latter against the contact C (and thus open the circuit at the spring-contact D'), thereby closing the circuit on the line x' containing the receiver E. As shown, however, my improved switch-mechanism is applied to the class of telephone-instrument provided with a local primary circuit comprising the local battery K having one pole connected by a wire t with a contact L (post) on the base A adjacent to the point o^2 on an end of the switch-lever B and between which and the post is a contact-spring L' proceed-

ing from a binding post n^2 on the base A. From the opposite pole of the battery K leads the wire t' through the transmitter, indicated at M, and thence through the primary winding of the induction-coil F to the binding-post n^2 . Then, when the weight of the receiver E is exerted on the support I, it holds the switch-lever B in the position of releasing not only the spring-contact C' but also the spring-contact L', thus normally maintaining open the local-battery circuit as well as the receiver-circuit x' , while closing the circuit x^2 at D, D'; and on taking down the receiver, the spring q causes the switch-lever to make the contacts at C, C', and at L, L'.

My improved switch-mechanism, thus described, should be provided with a cover, shown as a shield or cap N, which may be formed of metal, the cap being shown to be fastened in its position of covering the switch-mechanism by causing the receiver-support I to bear against it about the sleeve p and post r , which pass through the top of the cap, the receiver-support being fastened by a washer l held by a screw l' inserted into the internally screw-threaded outer-end portion of the post r .

To apply my improved attachment in operative position on a telephone-instrument it may, obviously, be fastened in any convenient position on the outside of the case of the instrument, or, for that matter, elsewhere; and the wire connections may readily be made with the proper terminal-contacts on the base A on removing the shield N, which is easily removable and replaceable. Moreover, it will be noticed that, by the construction of my improved switch-mechanism, there is no point, except at the induction-coil, where the current on the local-battery circuit and that on the main-line circuit can come together, thus preventing the weakening or counteracting and confusing effect of the one current upon the other, and the consequent impairment of the clearness in transmission of sound where they do come together at the metallic part of the switch-lever.

My improvement provides for absolutely insulating or maintaining entirely separate from each other, the main-line or secondary and local-battery or primary currents.

Regarded simply as an outside-attachment for a telephone-instrument my improvement may involve, without departure from my invention, any construction of the switch-device different from that shown and described and differently operating.

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

1. A telephone-switch device comprising a base carrying main-line terminals, yielding contacts connecting said terminals in the main-line or to ground respectively through the secondary winding of the induction-coil and the signaling-instrument circuit, a local-battery terminal and a yielding contact connecting it with the transmitter-circuit, and a spring-controlled electrically non-conductive switch-lever provided with a support for the receiver and extending at one end between the contacts so connecting said main-line terminals and at its opposite end adjacent to the contact so connecting the local-battery terminal, whereby turning said lever in either direction forces one said contact against an adjacent main-line terminal and releases the other from the terminal adjacent to it, and controls the said contact adjacent to its opposite end to force it against or release it from the adjacent terminal, according to the direction of turning the lever, substantially as described.

2. A telephone-switch device comprising, in combination, a base A carrying the main-line terminals C, n , connected by a contact-spring C', the main-line terminals D, n' , connected by a contact-spring D' and the local-circuit terminals L, n^2 , connected by a contact-spring L', and a spring-controlled electrically non-conducting switch-lever B fulcrumed between its extremities on said base to extend at one end between the free-ends of said contact-springs C', D' and at its opposite end to the free end of said contact-spring L' and provided with a support for the receiver, substantially as and for the purpose set forth.

3. A telephone-switch device comprising, in combination, a base A carrying the main-line terminals C, n , connected by a contact-spring C', the main-line terminals D, n' , connected by a contact-spring D' and the local-circuit terminals L, n^2 , connected by a contact-spring L', a post r extending from said base, an electrically non-conducting spring-controlled switch-lever B provided with a sleeve p by which it is journaled on said post to extend at one end between the free ends of said contact-springs C', D' and at its opposite end to the free end of said contact-spring L', a cap N for the switch-mechanism on said base, and a receiver-support I fastened on said sleeve and confining the cap in place, the whole being constructed and arranged to operate substantially as described.

ALBERT F. W. MEYER.

In presence of—

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