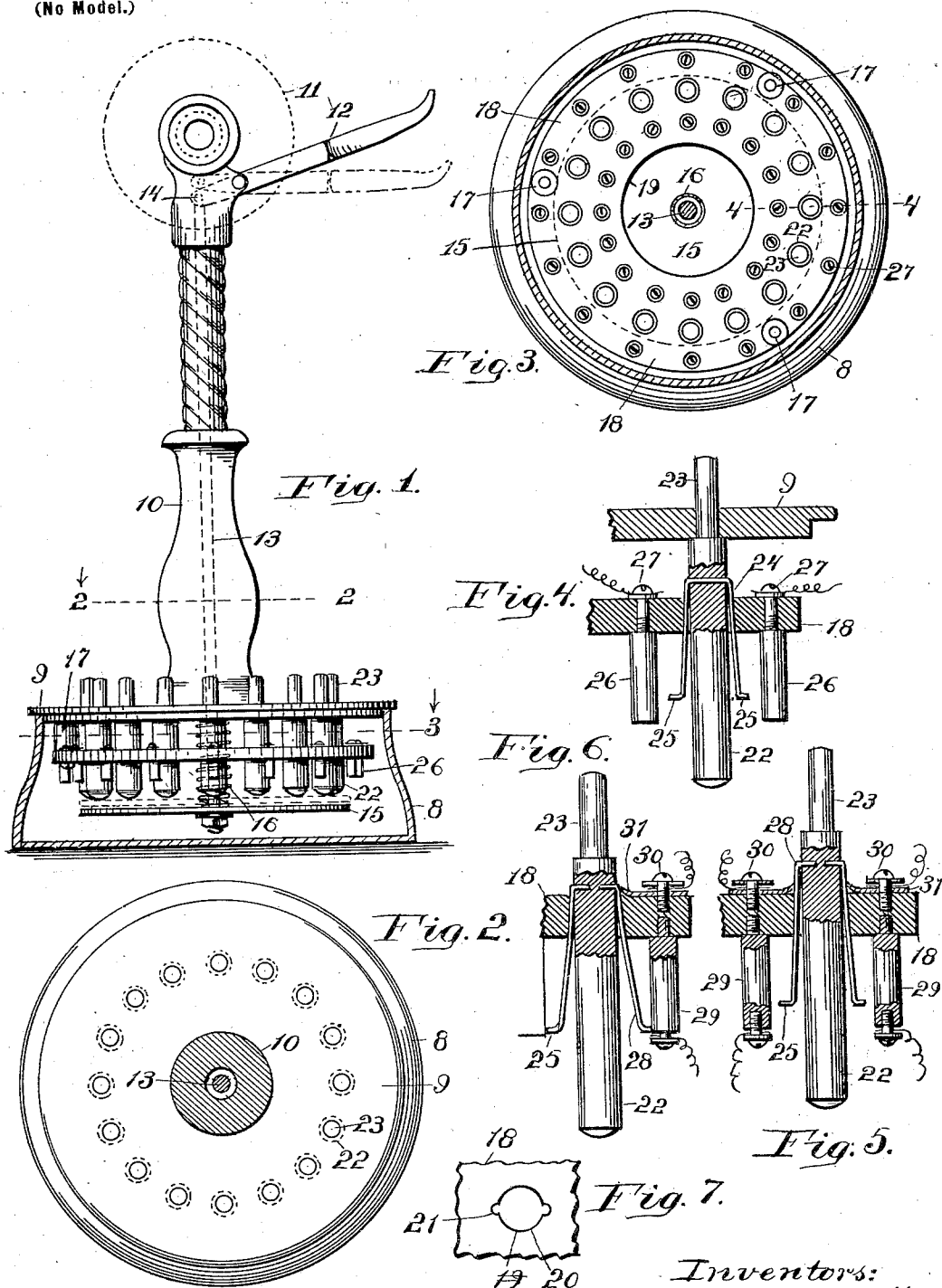


N. BASSETT & W. S. PHOENIX.
INTERCOMMUNICATING TELEPHONE SWITCH.

(Application filed June 10, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

NATHAN BASSETT, OF PHILADELPHIA, PENNSYLVANIA, AND WILLIAM S. PHOENIX, OF CAMDEN, NEW JERSEY, ASSIGNORS OF ONE-HALF TO LOUIS EYSENBACH, JR.

INTERCOMMUNICATING TELEPHONE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 701,282, dated June 3, 1902.

Application filed June 10, 1901. Serial No. 64,024. (No model.)

To all whom it may concern:

Be it known that we, NATHAN BASSETT, a resident of Philadelphia, county of Philadelphia, State of Pennsylvania, and WILLIAM S. PHOENIX, a resident of Camden, county of Camden, State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Portable Intercommunicating Telephone-Switches, of which the following is a specification.

The object of this invention is to provide an intercommunicating telephone-switch which possesses several novel features, and it belongs to the portable class of telephone-stands for holding the transmitter and receiver and is so adapted that every circuit is cut out whenever receiver is suspended on the pivoted arm, so that said cut-out is positive in its action and automatic in its character, and in its construction is equally well adapted for metallic or for the common return-circuit, as will now be set forth in detail.

In the accompanying drawings, Figure 1 is a side elevation of our improved switch, the casing of the base being cut away to show the mechanism. Fig. 2 is a horizontal section looking down across line 2 2 of Fig. 1. Fig. 3 is a horizontal section looking down across line 3 3, Fig. 1. Fig. 4 is a vertical cross-section, enlarged, on line 4 4 of Fig. 3. Figs. 5 and 6 are vertical cross-sections of the same, showing a modified form of connecting the springs; and Fig. 7 is a top view of the insulated plate, showing the formation of the plug-apertures.

In constructing our invention we provide a hollow base 8 of any suitable shape, on which is adjustably secured a top plate or cover 9, to which is centrally secured the vertical standard or post 10, at the upper end of which is attached the transmitter 11 and the pivoted arm for the receiver 12. The standard 10 is hollow, and within the same is a vertical bar 13, the upper end of which is attached to the inner end of the receiver-arm, as at 14. The lower end of this bar 13 suspends a disk 15, and between the disk and the lower side of the top plate 9 is a spiral spring 16, so that normally the disk is held down and corre-

spondingly elevates the outer end of the receiver-arm. In operation the weight of the receiver is sufficient to compress the spring and raise the disk 15 for purposes which will presently be explained.

Below the top plate 9 a limited distance and secured thereto by posts 17 is a disk 18 of insulating material, this disk having a central opening, as at 19, and through this disk is formed a circle of round holes 20, each hole having on opposite sides vertical gains 21. The cover above has coinciding holes, but smaller in diameter, and through these holes are placed the vertical plugs 22, the upper reduced ends 23 of which rest in the smaller holes in the plate 9. The lower ends of these plugs project down so that they terminate a short distance above the disk 15 when the receiver is not on the hook, as illustrated in Fig. 1. Each plug has a U-shaped spring-wire 24, which is held in a cross-hole through the body of the plug at a point between the top plate 9 and disk 18, the wings of said spring being bent down alongside the plug, and when in position these wires rest in the grooves or gains 21 alongside the holes 20. The terminals of these springs are bent outwardly, as at 25. On each side of the plug is a downwardly-projecting metal post 26, which is held in position on the under side of the insulated plate 18 by screws 27, which pass through the disk from the upper side, and these posts are so located with reference to the plug that when the plug is at its highest limit the right-angled points 25 are not in contact with the post; but when said plugs are depressed—as, for instance, in Fig. 6—the terminals contact with the post, and thus close the circuit. This form of connection is employed with the common return-circuit.

In order to adapt the invention for metallic circuits, a slight change is required. This is shown in Figs. 5 and 6, in which it will be seen that two spring-wires 28 are provided, one on each side of the plug, the latter in this case being of insulating material. These springs extend down alongside the plug and rest in the gains 21, as in Fig. 4. The posts

29 below the disk 18 are insulated from the screws 30 above, the latter screws serving in this instance to hold a plate 31, which is in constant contact with the wire spring 28. 5 The lower ends of the posts 29 serve as binding-posts for the wire connection, the other wire terminals being held by the screws 30 above the insulated plate. It is obvious, therefore, that in this case where the plug is 10 depressed the connection is formed between the conductors above and below the disk 18, and when the plug in the form shown in Fig. 4 is depressed the connection is made between the terminals on opposite sides of the 15 plug.

The advantages derived from the present form of constructing the intercommunicating switch are manifold. It is obvious that the plugs, being non-removable and capable of being 20 depressed for a limited distance only, will assure positive connection and that whenever the receiver is placed on the hook all depressed plugs will positively cut out all the circuits. Another feature of considerable 25 importance is the construction of the insulated disk which carries all the binding-posts and connections for the switch, thus greatly simplifying and cheapening the manufacture of the switch.

30 In operation it will be seen that it is impossible to throw in a circuit as long as the receiver is on the hook, since the disk 15 is raised, so that it bears against the lower ends of the plugs 22. As soon, however, as the receiver is removed the disk 15 is depressed by 35 the force of the spring 16, and the plugs then become operative and remain so until the receiver is again placed on the hook.

What we claim as new is—

40 1. An intercommunicating telephone-switch comprising a transmitter-base having therein a rigid insulating-plate and electrical connections therein, with plugs operating through said plate and means for simultaneously returning all plugs to their normal positions, as 45 set forth.

2. An intercommunicating telephone-switch, comprising a transmitter-base having therein a fixed horizontal insulating-plate to receive 50 all the electrical connections and intercommunicating plugs, a disk below said plugs, a hinged receiver-hook having mechanical con-

nections with said disk, and a spring for depressing said disk, as set forth.

3. An intercommunicating telephone-switch, 55 comprising a transmitter-base, and a hinged receiver-hook thereon, a disk within said base in connection with the receiver-hook, a series of switch-plugs in operative relations with said disk, and means whereby said plugs are 60 locked in position when the disk is elevated by the receiver-hook, as set forth.

4. In an intercommunicating telephone-switch, a transmitter-base having therein a fixed plate provided with a series of non-re- 65 movable plugs, said plugs extending through the face of the base and projecting below the fixed plate, each plug having on opposite sides a spring-finger and posts depending from the fixed plate to contact with said spring-fingers, 70 as set forth.

5. In an intercommunicating telephone-switch, a transmitter-base having therein a rigid insulating-plate, a series of round holes 75 through the same, provided with oppositely-disposed gains or grooves, in combination with plugs, having rounded bodies provided with spring-fingers on opposite sides and adapted to rest within the aforesaid grooves, 80 as set forth.

6. In an intercommunicating telephone-switch, the combination of a base and stand- 85 ard for a transmitter and a hinged receiver-hook, a disk within said base mechanically connected with the receiver-hook, a fixed insulating-plate above said disk having thereon all the electric terminals, and plugs through said plate projecting out of said base and extending below the insulating-plate into operative 90 contact with said disk, metallic posts on opposite sides of each plug in electrical connection with the telephone-circuits, and spring-fingers on each plug adapted to contact with said posts when the plugs are depressed, as set forth. 95

Signed at Philadelphia, in the county of Philadelphia and State of Pennsylvania, this 9th day of May, A. D. 1901.

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Witnesses:

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