

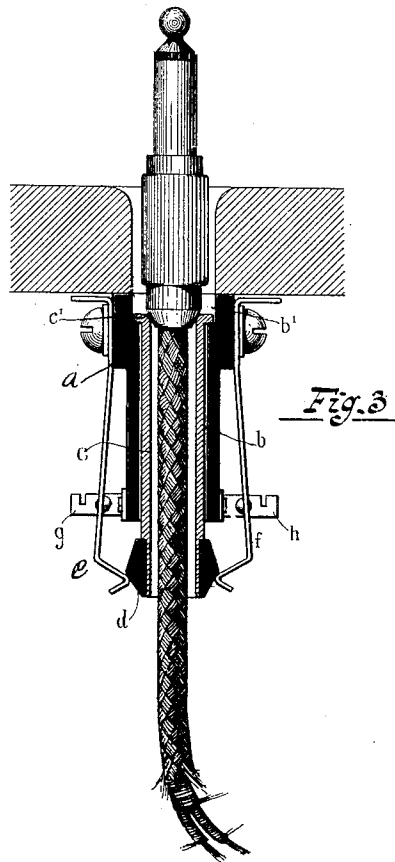
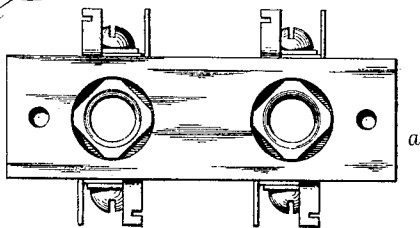
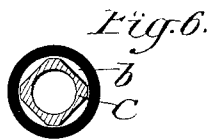
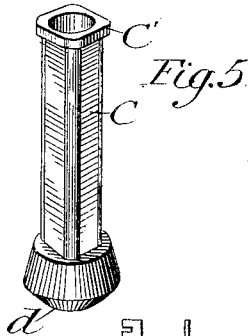
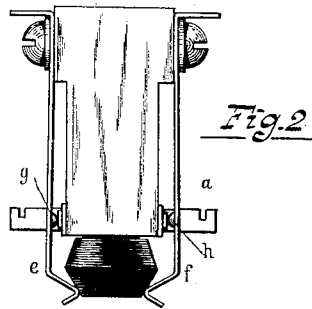
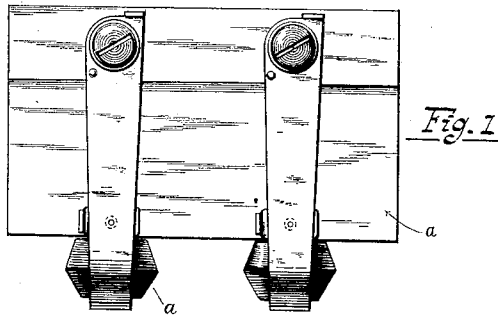
No. 638,418.

Patented Dec. 5, 1899.

J. L. McQUARRIE.
APPLIANCE FOR TELEPHONE SWITCHBOARDS.

(Application filed Apr. 10, 1897.)

(No Model.)



Witnesses:

L. H. Canner
John W. Sinclair

Inventor:

James L. McQuarrie,
By: Barton & Brown, Attys.

UNITED STATES PATENT OFFICE.

JAMES L. McQUARRIE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

APPLIANCE FOR TELEPHONE-SWITCHBOARDS.

SPECIFICATION forming part of Letters Patent No. 638,418, dated December 5, 1899.

Application filed April 10, 1897. Serial No. 631,533. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. McQUARRIE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Appliances for Telephone-Switchboards, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention is a plug-seat switch for use with connecting-plugs in telephone-switchboards for the purpose of changing circuits automatically in the removal of the plug from its normal resting-socket or its replacement therein.

The object of the invention is to produce a plug-seat switch which shall be operated by the weight of the plug and its attached cord and shall be of simple and durable construction.

My new plug-seat switch comprises a vertically-movable tube or sleeve, through which the cord passes, extending into a resting-socket of the plug and having an enlarged head adapted to receive the plug, a tapered or conical collar carried on the free portion of the tube, and switch-springs having free extremities bearing upon the oblique surface of the collar.

The invention is shown in the attached drawings.

Of the drawings, Figure 1 is a side elevation of a plug-seat switch. Fig. 2 is an end elevation of the same. Fig. 3 is a vertical central sectional view. Fig. 4 is a plan view of the switch, the plug and cord being removed. Fig. 5 is a detail view of the vertically-movable tube or sleeve, and Fig. 6 is a cross-sectional view of the tube and socket.

Similar parts are designated by similar letters of reference wherever they are shown.

The parts may be mounted on a base or block *a*, of insulating material. In this block a vertical perforation *b* is drilled, having a countersunk portion *b'*, adapted to receive the base or handle of the plug. In this opening is placed a tube *c*, of metal, fitting loosely, so as to be freely movable. This tube is provided with an enlarged portion *c'* at its upper

extremity to form a bearing-surface for the heel of the plug and to abut against the bottom of the countersunk socket *b'*. At its lower extremity the tube *c* carries a conical collar *d*, of hard rubber. The expanded head *c'* and the collar *d* are placed at such a distance apart that the tube is permitted a slight longitudinal play, one-eighth of an inch being sufficient. As illustrated in Figs. 4, 5, and 6, the outer walls of the tube are flattened or cut away, so that the tube does not fill up the hole in the socket entirely. This is for the purpose of allowing dust that may alight upon the switch-table to fall through and out in the space thus left between the outer wall of the tube and the bore of the socket. I have made this provision because otherwise dust would be liable to collect in the socket and cause the tube to stick.

The switch-springs *e* and *f* are flat springs fastened at their upper extremities to the block *a*. Their lower extremities are curved inwardly and brought to bear upon the inclined face of the collar *d*, so that when the latter is forced downward the springs are spread apart. The springs should exert sufficient pressure upon the collar *d* to raise the tube to the upper limit of its range of movement when free, but should of course yield under the weight of the plug and cord when the latter rest upon the tube. Normal resting-contacts *g* and *h* are provided for the springs *e* and *f*, secured to the base *a*. Of course any other desired arrangement of contact-points or switch-springs may be made.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a base having a vertical perforation formed in it, of a tube in the perforation longitudinally movable, a conical collar on the tube, switch-springs having free extremities bearing on the inclined faces of the collar, and contact-anvils for the switch-springs, a connecting-plug resting on the upper extremity of the tube, and the cord thereof passing through the tube, as described.

2. The combination with a base having a vertical perforation and a countersunk upper portion constituting the plug-socket, of a tube

longitudinally movable in the perforation, switch-contacts actuated by the tube in its longitudinal movement, the tube having flattened longitudinal faces formed on it to permit the escape of dust from the socket, as described.

3. The combination with a base having a vertical socket therein, of a tube movable longitudinally within said socket, said tube being cut away to form dust-passages between

it and the inner wall of the socket, and switch-contacts adapted to be actuated by the movement of the tube, substantially as described.

In witness whereof I hereunto subscribe my name this 21st day of November, A. D. 1896. 15

JAMES L. MCQUARRIE.

Witnesses:

ELLA EDLER,
DUNCAN E. WILLETT.