June 12, 1928. 1,673,644

W. W. SHOE

ELECTRIC PLUG

Filed May 21, 1927

Fig. 1.

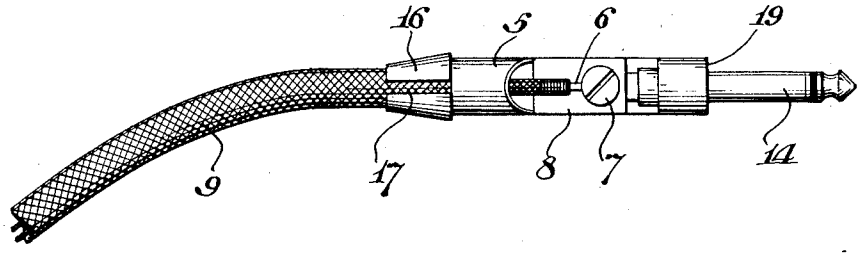


Fig. 2.

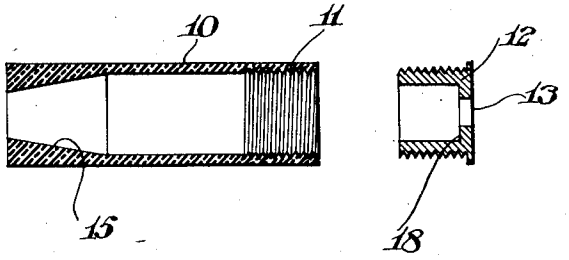


Fig. 3.

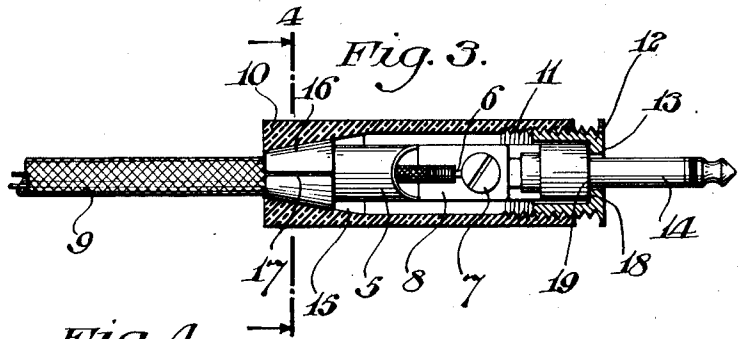
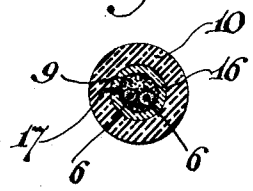


Fig. 4.



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Patented June 12, 1928. 1,673,644

UNITED STATES PATENT OFFICE.

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ELECTRIC PLUG.

Application filed May 21, 1927. Serial No. 193,127.

The invention relates to electric switches of the plug and socket type. The object is to provide improved means cooperating with the movable element of the switch and the conducting wires normally to prevent the separation of the wires from the said element.

As is well known, many forms of plug and socket switches are provided with a hand piece or body whereby the movable element may be withdrawn from the fixed element, but as is also well known, the operator does not always seize this hand piece or body to cause said removal, but instead seizes the cord or cable containing the wires, as being more convenient to the hand. This operation of pulling on the cord or cable, to withdraw the movable element, puts a direct strain upon the wires which are secured to the binding posts or screws. This practice frequently results in severing the wires from the binding posts, thereby causing much inconvenience and expense. The chief purpose of the present invention is to provide means for preventing any strain upon said connection between the wire and binding post, when the pull is exerted directly upon the cord, instead of the hand piece. The invention also comprises improved means for securing the hand piece or body to the movable element and improved means for securing the hand piece and movable element to the cable independently of the connection of the wires to the binding posts.

Referring to the drawings, which illustrate merely by way of example, suitable means for effecting the invention:—

Fig. 1 is a plan view of the plug or movable element showing the cone shaped or tapered sleeve forming part of the invention.

Fig. 2 is a longitudinal section of the hand piece and the threaded bushing or cap for cooperating therewith.

Fig. 3 is a longitudinal section showing the assembly.

Fig. 4 is a cross-section on line 4, 4 of Fig. 3.

Similar numerals refer to similar parts throughout the several views.

The specific form of switch, shown in the drawings, is that used in connection with the telephone switch board, to which the invention is especially applicable, although it may obviously be applied to other forms of switches.

The body 5 of the plug is of standard form now in common use. The two wires 6 are secured to screws 7, one of which only is shown, the other wire and screw being beneath or back of the insulating plate 8, shown in Fig. 3. These wires pass through the rear end of body 5 into the cable 9. The hand piece in common use is a simple cylinder of non-conducting material, such as rubber or vulcanite, secured to the plug body 5 by means of a screw or pin. In accordance with the present invention, the hand piece 10 is of cylindrical formation having at one end an interior thread, as at 11, for receiving the threaded bushing or cap 12 provided with the opening 13 for the extension 14 from the plug body 5. The other end of hand piece 10 is provided with a conical or outwardly tapering opening, as at 15.

Upon the cable 9 is provided the cone-shaped or tapered sleeve 16 having a cylindrical bore of normally slightly larger cross-section than that of the cable. This sleeve is slotted from circumference to bore, as at 17. This sleeve is made of resilient material and is adapted, when compressed to close the slot, to tightly grip or clamp the cable to prevent independent movement therebetween. The larger end of this sleeve abuts against the rear end of the plug body 5, as shown.

When the several parts are assembled as shown in Fig. 3, and the bushing or cap 12 screwed into the sleeve 10 the inner face 18 of the cap 12 engages the shoulder 19 of the plug body 5 which forces the sleeve 16 into the conical recess 15 and thus causes the compression of the sleeve 16 to grip or clamp the cable 9.

In the above specific example of means for effecting my invention, I have shown my invention applied to the plug as the movable part or element of the switch. It will be obvious however that the socket element may be the movable part and the invention is adapted to be applied to the movable part or element, whether plug or socket.

What I claim is:—

The combination of an electric plug, a cable having wires connected to the plug, a split tapered sleeve surrounding the cable and abutting the plug body, a hand piece surrounding the plug body having a tapered recess at one end for receiving the tapered sleeve, and an interior thread at the other end and a threaded cap for cooperating with the said interior thread for engaging the plug body to force the tapered sleeve into said tapered recess to cause the compression of the sleeve to clamp the cable.

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