Jan. 2, 1923. 1,440,651

R. B. WOLCOTT,
ATTACHMENT PLUG.
FILED DEC. 23, 1916.

FIG. 1.

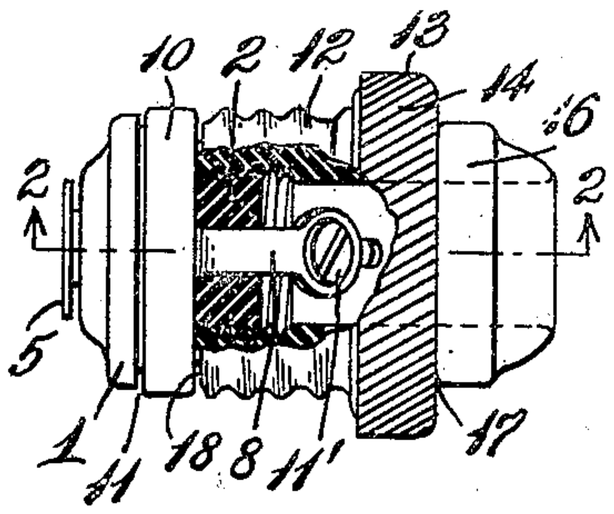

FIG. 2.

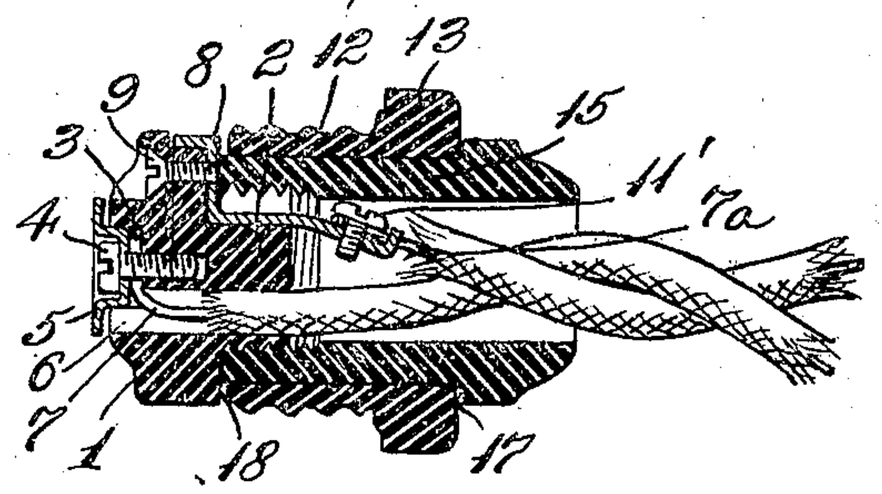

FIG. 3

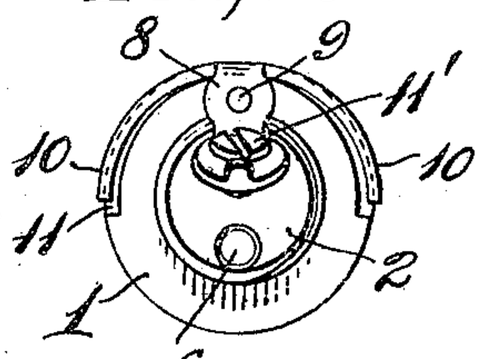

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FIG. 4.

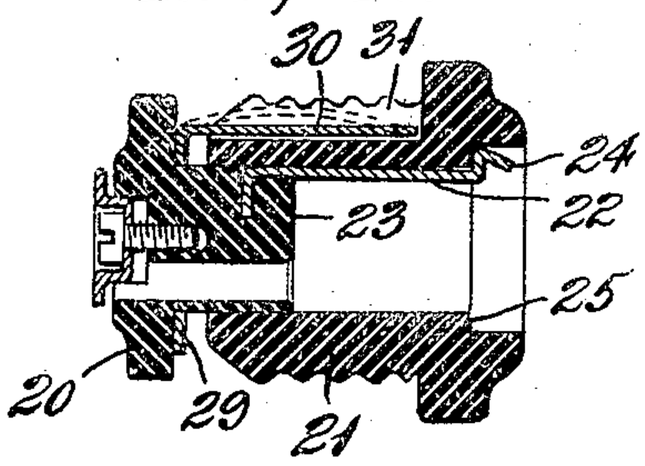


FIG. 6.

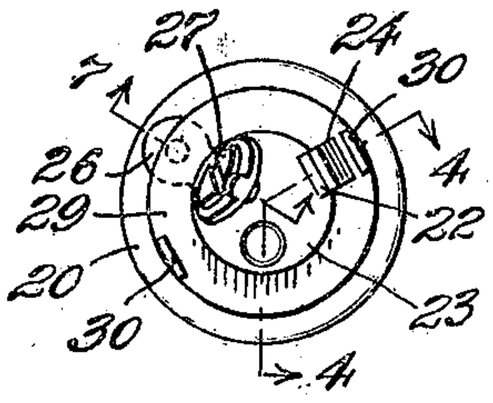


FIG. 5.

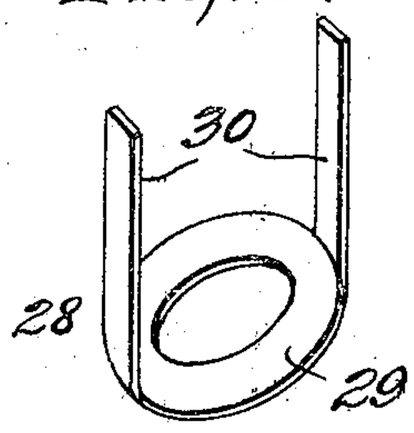
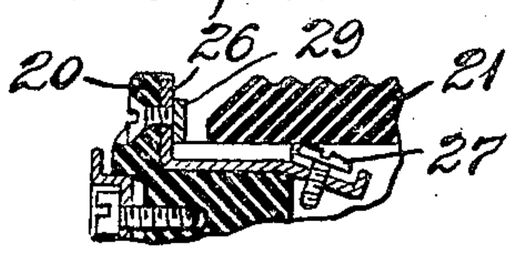


FIG. 7.



Inventor.
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By Brockett and Hyde
Atty's.

Patented Jan. 2, 1923. 1,440,651

UNITED STATES PATENT OFFICE.

ROBESON B. WOLCOTT, OF CLEVELAND HEIGHTS, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ATTACHMENT PLUG.

Application filed December 23, 1916. Serial No. 138,647.

To all whom it may concern:

Be it known that I, ROBESON B. WOLCOTT, citizen of the United States, residing at Cleveland Heights village, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Attachment Plugs, of which the following is a specification.

This invention relates to swivel attachment plugs. The object of the invention is to provide a simple, cheap attachment plug which can be easily connected to the conducting wires; which has less parts than prior plugs of this type; which thoroughly insulates the end and side contacts to prevent short circuits or accidental shock to the user; whose end and side binding screws are both carried by the same piece and are hence always in fixed relation; whose parts are of such form as to be easily formed by a cheap molding operation; and finally a plug which is strong and durable and not liable to get out of order.

Further objects of the invention are in part obvious and in part will appear more in detail hereinafter.

The invention comprises the construction and arrangements of parts hereinafter described and claimed.

In the drawings Fig. 1 represents a side elevation of one form of plug embodying the invention; Fig. 2 is a longitudinal section on the line 2—2, Fig. 1; Fig. 3 is a plan view of the base or body; Fig. 4 is a longitudinal section of another form of plug; Fig. 5 is a perspective view of the side contact; Fig. 6 is a plan view of the base or body; and Fig. 7 is a longitudinal section showing binding terminal connection for side contact.

The plug shown in the drawings comprises essentially two members, to-wit, a base or body and a threaded socket engaging member rotatable relative thereto. These two members are suitably connected in a manner to be readily detachable, when desired, for connecting or disconnecting the lead wires, but when connected, will not accidentally become detached. Both members may be made of any suitable non-conducting material such as porcelain, hard rubber or the like, but as shown are of a form enabling them to be readily molded from composition material to reduce the cost.

In the form shown in Figs. 1 to 3 the base or body, indicated at 1, is a short solid cylindrical piece having a reduced threaded stem 2 on one side and a countersunk threaded recess 3 on its other side to receive a screw 4 passing through the end contact member 5. The screw can be readily molded with the body during its formation and then unscrewed therefrom leaving the body threads formed therein. At one side of the recess 3 is an opening 6 through the stem 2 to receive the wire 7 leading to the end binding screw.

The side contact is also supported or carried by the base or body 1 and may also be attached thereto, although this is not essential. As shown said side contact comprises a metal member having an L shaped portion 8 secured by a screw 9 in recesses in the main body and stem, continuous with which is a spring portion 10 conforming to a circumferentially extending recess 11 of the body. Said spring contact portion may extend in only one direction circumferentially from the L shaped portion 8 but is shown as extending in both directions therefrom. Its free ends are bowed or bent outwardly from the recess so as to extend beyond the limits of the body. Hence when the plug is inserted into a socket and forced home the side spring contacts make electrical contact with the threaded shell of the socket, as will be readily understood. The opposite end of the L shaped portion 8 projects longitudinally from the stem 2 and is enlarged to receive the binding screw 11 for the other lead wire 7^A.

The threaded member 12 is of sleeve form with an outwardly extending flange 13, preferably knurled, as at 14, by means of which it may be rotated to screw it into the socket.

This member is made entirely of non-conducting material and has no metal conducting parts attached thereto. It is, therefore, cheap to manufacture. To detachably connect said member to the body or base 1 so as to provide swiveling motion any suitable construction may be employed. The plug shown has a tubular sleeve 15 whose inner end has threaded connection with the threads of the stem 2 and whose bore serves as a passage for the lead wires and to contain the binding post for the side contact. Sleeve 15 has an outwardly extending flange or collar 16 forming a shoulder 17 which together with the shoulder 18 of the body serves to confine the threaded member but yet permit it to rotate on the body and sleeve 15.

In the plug shown in Figs. 4, 5 and 6 the sleeve 15 of the first form is omitted and the body 20 and threaded member 21 are detachably connected by a spring tongue 22 attached to the smooth stem 23 and having a bent latching portion 24 adapted to spring in behind an inner shoulder 25 of the threaded member which rotates on said smooth stem. The end contact and the manner of connecting it to its cord are the same as in the other form. The side contact, however, comprises the L shaped member 26 carrying the binding screw 27 for the lead wire, and a sheet metal member 28 having a ring 29 surrounding and rotatable on and supported by the stem 23 and one or two spring contact tongues 30 extending longitudinally of the plug and lying in longitudinal grooves 31 in the outer threaded surface of member 21. Members 26 and 28 are in electrical contact.

When member 21 is rotated to screw the plug into a socket the position of tongues 30 causes the ring 29 to rotate around the stem 23. There is a certain amount of lost longitudinal motion between the body and threaded member, as a result of which, when the end contact reaches its seat, the threaded member can be screwed in still further, whereupon the shoulders at the end of grooves 31 engage the spring tongues 30 and bow the same outwardly into contact with the threaded socket shell, as in dotted lines, Fig. 4. The parts of this plug are disconnected or connected by straight longitudinal pull or push to disengage or engage the spring tongue 22 and shoulder 25.

The plug described is of simple form and can be made and sold at low cost. It is easily manipulated, thoroughly protects the user and is not liable to get out of order. Other advantages will readily occur to those skilled in the art.

What I claim is:—

1. An attachment plug, comprising a body and a threaded member on which said body is mounted, said member having exposed threads for engaging the threaded contact of an electrical receptacle, said member being formed wholly of non-conducting material, and side and end contacts attached to said body.

2. An attachment plug, comprising a body carrying binding posts for two lead wires, side and end contacts electrically connected to said posts, and a threaded member formed wholly of non-conducting material and means whereby said threaded member and body may be readily connected and disconnected with respect to each other, said threaded member having exposed threads for engaging the threaded contact of an electrical receptacle.

3. A swivel attachment plug comprising a body portion, a center contact and a wiring terminal supported by said body portion, and a threaded shell of insulating material swiveled on said body portion having exposed threads of insulating material for engaging the threaded shell contact of an electrical receptacle, said body portion being insertable into said threaded shell at the entering end thereof, and means for preventing the withdrawal of said body portion from said swivel shell portion.

4. A swivel attachment plug comprising a body portion, a center contact and a wiring terminal supported by said body portion, and a threaded shell of insulating material swiveled on said body portion having exposed threads of insulating material for engaging the threaded shell contact of an electrical receptacle, said body portion being insertable into said threaded shell at the entering end thereof, and spring means for preventing the withdrawal of said body portion from said swivel shell portion.

5. A swivel attachment plug comprising a body portion, center and side contacts supported thereby, and a threaded shell swiveled on said body portion having threads for engaging the threaded contact of an electrical receptacle, said body portion and swivel shell having a limited relative axial movement, and means whereby said axial movement shifts said side contact.

6. An attachment plug comprising a center contact, a threaded shell swiveled with respect to said center contact, having threads for engaging the threads of an electrical receptacle, said center contact being axially movable with respect to said swivel shell, a side contact and means whereby said axial movement of said center contact will cause movement of said side contact.

7. An attachment plug comprising a threaded shell for screwing into a threaded shell contact of a receptacle, a center contact axially movable with respect to said shell, a contact carried by and movable on said

plug, and means whereby movement of said center contact causes movement of said other contact.

8. An attachment plug comprising a center contact, a threaded shell mounted for swiveling and axial movement with respect to said center contact, having threads for engaging the threads of a threaded contact of an electrical receptacle, a movable contact carried by said plug and means whereby relative axial movement of said center contact and swivel shell actuates said other contact.

In testimony whereof I affix my signature.

ROBESON B. WOLCOTT.