

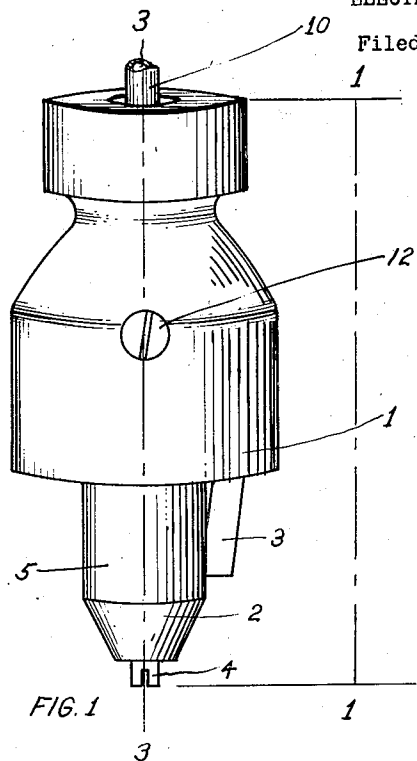
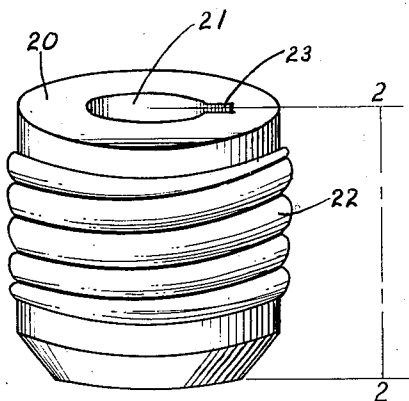
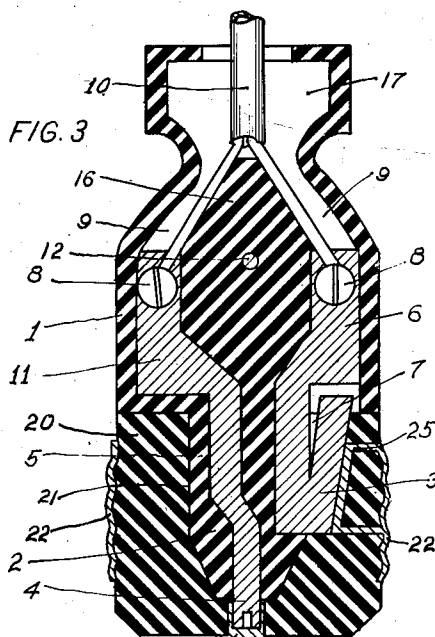
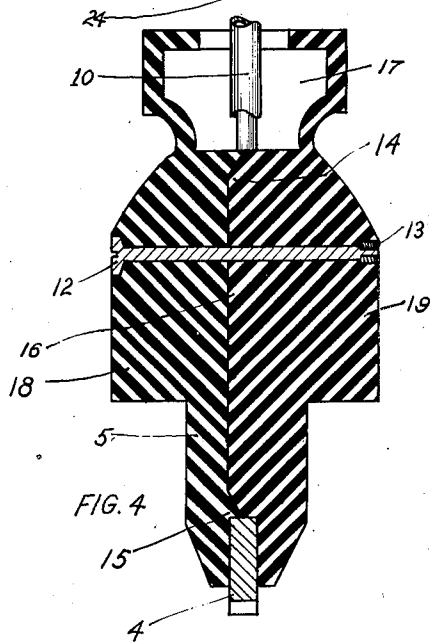
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ELECTRICAL CONNECTOR

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2,236,167

ELECTRICAL CONNECTOR

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1 Claim. (Cl. 173—343)

My invention relates to improvements in electrical connectors and has particular reference to connectors of the two-part or separable type, such as used in making connections to lamps, heaters, and other electrical appliances.

More specifically, my invention relates to separable attachment plugs of the kind comprising two parts which can be separated readily. One of these parts may be adapted to be threaded into an ordinary socket such as found in electrical fixtures, floor outlets, and the like. The other of these parts is adapted to be connected to one end of an electrical cord which is connected at the other end to an electrical appliance. Instead of being adapted to thread into a socket, one of these parts may itself form a floor or wall plug which is inserted into an opening in the floor or wall and is adapted for connection to the other part.

One object of this invention is to provide an attachment plug of this character which shall be of simple and inexpensive construction possessing good wearing qualities, and which shall provide good contact and be less liable to get out of order than others of this type.

Another object of this invention is to provide a separable attachment plug with automatic guiding means whereby the parts can readily be connected in a dark or inaccessible place.

A further object of this invention is to provide a two-part attachment, floor or wall plug having a male section and a female section, with these sections so shaped and designed as to permit readily and rapid insertion of one into the other, and to maintain good electrical connection thereby.

With the above and other objects in view, my invention consists in the combination, arrangement and details of construction disclosed in the drawing and specification, and more particularly pointed out in the appended claim.

In the drawing, in which similar reference characters indicate similar parts throughout the respective views;

Figure 1 is a side elevation of a male portion of the plug according to my invention;

Figure 2 is a side elevation of a female portion of the plug of my invention;

Figure 3 is a sectional view taken along the axis 1—1 of Figure 1, and 2—2 of Figure 2, showing the parts in their assembled relationship;

Figure 4 is a sectional view taken on the axis 3—3 of Figure 1 at right angles to the axis of Figure 3, showing a cross-section of the male portion of a plug according to my invention.

In the drawing, in Figure 1, reference charac-

ter 1 indicates the male plug member, the body of which is made of insulating material such as rubber, synthetic resins, porcelain, etc., molded or otherwise formed into the desired shape. This member has an elongated cylindrical portion 5, the end of which is formed into a frusto conical portion 2. The entire male member is formed in two sections indicated at 18 and 19 in Figure 4, these sections being assembled by means of a small bolt 12 which is passed through the two sections and held in place by being threaded into a nut or threaded member 13, embedded in section 19.

The female portion is formed as shown in Figure 2, and comprises a body portion 20 made of insulating material selected from those types used in the male member. A central opening 21 is formed in the body member 20. This central opening conforms in shape and structure to the end of the male member, and in addition, is provided with a slotted or grooved portion 23 which contains a contact member and into which contact 3 of the male member slides to act as a guide and to engage the contact member which is connected to threaded member 22. The contact 3 acts simultaneously as a guide and contact, as hereinafter described in greater detail.

Figure 3 shows a cross-section of one form of my invention in detail. Male member 1 is shown inserted into female member 20. The male member comprises two sections joined together in the manner shown in Figure 4. The two sections are hollowed out and grooved as shown at 9, and in these grooves are placed contact members 11 and 6. Contact 11 consists of a metal plate having a shape to fit in the grooved portions as shown, the end 4 of the plate being cylindrical or of a shape to fit into and engage contact member 24 in the female portion, and having a slit therein as shown. This end portion is concentric with the frusto-conical portion of the male member and extends sufficiently to engage a female contact member 24 in the base or female member. The end portion is slotted to give a spring action and permit good contact.

Contact 6 is slotted at 7 to form contact portion 3 integral therewith. This portion extends through an opening in the side of member 5 and engages a contact in the slot or groove 23 in the female member. The contact portion 3 also functions as a guide means to aid in locating the proper point of insertion of the male portion of the plug. The slot 7 also gives the contact a spring action to permit good contact on insertion into the base plug. Contacts 11 and 6 bear binding

screws 8 which clamp the wires 10 leading to the appliance to be connected. These wires are positioned in a part of the hollowed or grooved portions.

- 5 The two sections above referred to which comprise the insulating portion of the male member bear respectively, a tongue portion and a groove portion as shown in cross-section at 14 and 15 in Figure 4. These tongue and grooved
10 portions are formed by making the central dividing portion 16 of one section, raised, to form a tongue, and providing a corresponding recess in the central portion of the other section, to form a groove, so that when the two sections are as-
15 sembled with the contacts in place and the wires attached, they will be firmly joined and may be tightly assembled by means of a single bolt member.

- The two sections referred to may also have
20 hollowed out portions in the base as at 17 in Figures 3 and 4, to provide a space for knotting the wire 10 so as to take up any strain on the binding screws.

- The base portion or female member of the
25 connector is in the form of a cylinder 20 bearing a threaded sleeve as shown at 22 in Figures 2 and 3. The central portion of this member is bored as shown at 21 in Figures 2 and 3, to form the female opening. In addition, the central
30 opening has a slot or groove in the periphery thereof and extending a short distance into the bore. This slot is of a cross-section corresponding to that of contact portion 3 and may be of any desired shape. In the drawing this slot is rec-
35 tangular and at a slight angle to firmly engage the contact member 3 by the wedging action of the tapered portions. This slot or groove bears at

the bottom thereof, a metallic strip 25 which is connected to threaded member 22 by passing through the sides of member 20 as shown in Figure 3. This strip may be joined to the threaded sleeve 22 by soldering.

The embodiment shown and described is for the purpose of illustration only. The drawing and description are therefore to be considered in an illustrative and not in a limiting sense, for it is obvious that many modifications and adapta-
10 tions will readily occur to and be made by, those skilled in the art without departing from the spirit and scope of the invention.

I claim:

An electrical connector comprising a base 15 member of insulating material, a bore formed vertically therein and terminating short of the bottom thereof, a contact extending through the bottom of said base member into said bore, a vertical groove extending longitudinally of said
20 bore and in a continuous straight line from the opening thereof and having a portion thereof tapering slightly toward the interior of said bore, a contact member in said groove extending lon-
25 gitudinally thereof and adjacent said tapered portion, an elongated plug member of insulating material conforming in shape to said bore and bearing a central contact member to en-
30 gage said bottom contact, and a side contact member projecting from said elongated member to fit the groove in said bore and being tapered
35 to engage said contact therein and cooperating with said groove to guide said plug member into said base member, and cooperating with the tapered portion of said groove and said contact therein to be wedged into engagement therewith.

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