Jan. 19, 1960 J. F. CORCORAN 2,922,136

LAMP SOCKET

Filed Oct. 10, 1955

FIG. 1.

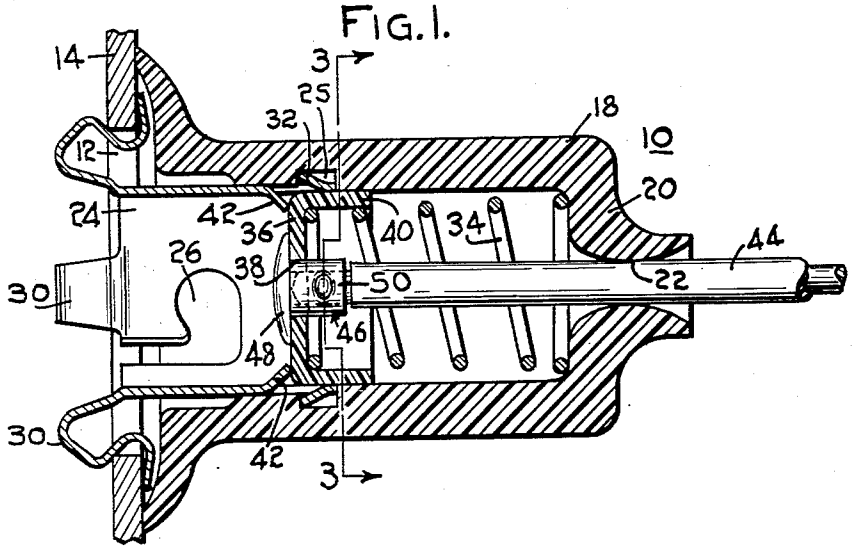


FIG. 2.

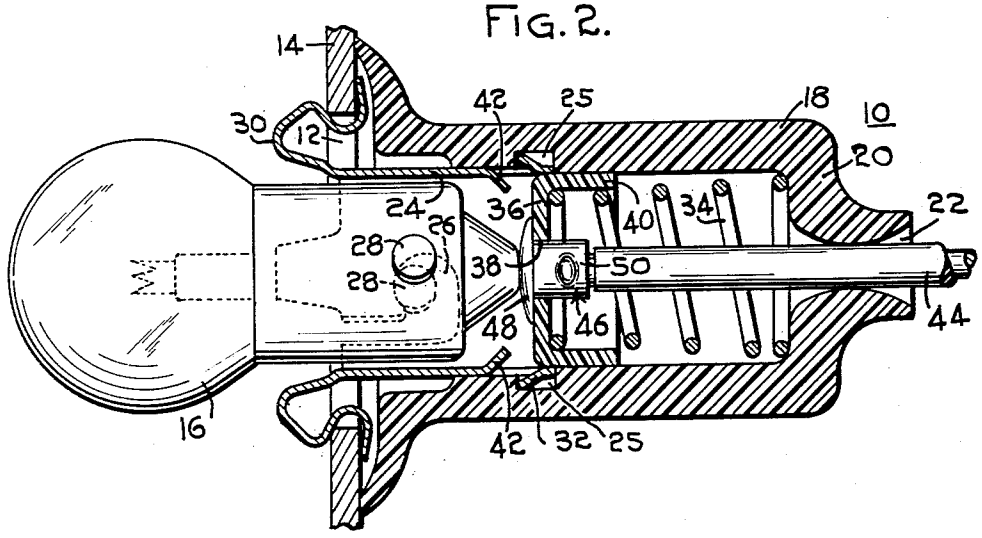
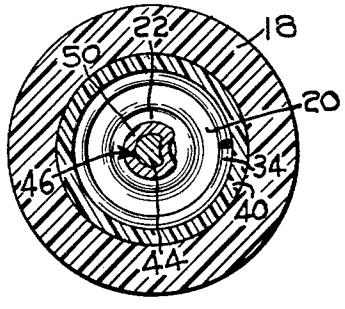


FIG. 3.



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LAMP SOCKET

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1 Claim. (Cl. 339—128)

This invention relates generally to lamp sockets and has particular reference to a socket of the type which is adapted for assembly into a support panel opening.

Such installations are commonly provided in automotive lighting equipment in which a single wire is provided leading to the socket with the support panel serving as the ground or return circuit. Sockets of this type are provided with spring means for biasing the contact against the terminal on the base of the bulb, and the contact and lead wire are designed to move rearwardly when the bulb is inserted to flex the spring and thereby provide good electrical contact between the bulb and the lead wire.

It has been found that in some installations of this type the contact on the end of the lead wire, or an exposed portion of the lead wire adjacent the contact can come in contact with the spring which results in a short circuit when the bulb is energized. Such short circuits have been more frequent in installations in which lead wires with certain types of plastic insulation are used. Since it has been found that when the wire is cut and the insulation trimmed to receive the contact, the insulation tends to creep back on the wire leaving a considerable portion of the wire exposed adjacent the contact.

The object of this invention is to provide a lamp socket assembly in which means are provided to isolate the spring from the ground terminal of the socket.

A further object of the invention is to provide a lamp socket assembly in which an insulating housing is provided with a bulb-receiving shell in the forward portion, a spring in the rear portion, and contact carrying means disposed in the housing which also serves to isolate the shell from the spring.

Other objects of the invention will, in part, be obvious, and will, in part, appear hereinafter.

In the drawing:

Fig. 1 is a view in section partly in elevation of a lamp socket assembly embodying the features of the invention;

Fig. 2 is a view of the assembly of Fig. 1 with a lamp bulb, assembled therewith;

Fig. 3 is a view in section taken on line 3—3 of Fig. 1.

Referring to the drawing there is illustrated a lamp socket assembly 10 which is adapted for assembly into an opening 12 in a support panel 14 to receive a lamp bulb 16 from the opposite side of the panel.

The lamp socket 10 comprises generally a housing 18 formed of insulating material having a rear end 20 with a central aperture 22, and an internal circumferential groove 25 disposed medially thereon.

To provide means for receiving a lamp bulb base, a conductive shell 24 is disposed in the forward portion

of the housing. The shell 24 in the illustrated embodiment is provided with J-slots 26 to receive pins 28 on the lamp base in the usual manner, and has axially extending spring fingers 30 for snapping engagement into the panel aperture. The shell is retained in the housing by forwardly and outwardly inclined tangs 32 projecting into the groove 25.

A coil spring 34 is provided in the rear portion of the housing which rests against the rear end thereof, and an insulating washer 36 is disposed on the forward end of the spring. The washer 36 is provided with a central aperture 38 and a circumferential wall 40 which extends toward the rear end of the housing beyond the end of the shell 24 and encloses the forward end of the spring.

The washer 36 is limited in its forward movement by radially inwardly extending stop members 42 adjacent the rear end of the shell so that the spring is maintained in a partially compressed condition.

To complete an electric circuit to the bulb, a lead wire 44 extends through the aperture 22 and the center of the spring, and is provided with a contact rivet 46 on the end which has a head 48 disposed on the forward side of the washer and a shank 50 extending through the aperture 38 of the washer.

When the lamp bulb is assembled into the socket the contact rivet and washer are forced rearwardly compressing the spring 34. During such assembly the lead wire must either move through the rear aperture 22, or must flex sideways inside the housing. In the latter event it has been found that in some cases there is the possibility that the sideways flexing of the wire can cause tilting of the rivet to permit either the rivet or the exposed portion of the wire to come in contact with the spring. However, the possibility of a short circuit by such contact is eliminated by the fact that the spring is isolated from the contact with the shell by the insulating washer, and by the fact that the wall 40 of the washer tends to prevent tilting of the assembly in relation to the axis of the socket.

The wall 40 also provides a smooth bearing surface to ride against the inner wall of the socket during assembly and removal of a lamp bulb.

Since certain obvious changes may be made in this device without departing from the scope of the invention, it is intended that all matter contained herein be interpreted in an illustrative and not in a limiting sense.

I claim:

A lamp socket, comprising a housing formed of insulating material and having an opening at the forward end for receiving a lamp bulb, and an aperture in the rear end for receiving a lead wire, a conductive shell disposed within the forward portion only of the housing and terminating in substantial spaced relation to the rear end of the housing to provide an exposed metal free inner wall of the housing between the end of the conductive shell and the rear end of the housing, said shell having means for engaging and making electrical contact with the base of an assembled lamp bulb, and means projecting out of the forward opening for making electrical contact with a ground panel, a contact-carrying washer of insulating material disposed in the housing, said washer being movable longitudinally therein, and having a peripheral wall extending toward the rear of the housing and a coil spring disposed between the rear end of the housing and the washer, the forward end of the spring

being enclosed by the peripheral wall, said shell having means projecting outwardly into engagement with the housing to retain the shell against longitudinal movement therein, and stop means near the rear end of the shell projecting inwardly for engagement with the forward side of the washer to limit the forward movement thereof only partly into said shell, said spring being retained under compression between the washer and the rear of the housing thereby being entirely free of any possible contact with the conductor shell.

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