June 28, 1955 C. W. COCHRAN 2,712,120

LAMP SOCKET HAVING RADIALLY EXPANDING SPRING FINGERS TO MOUNT IT IN AN APERTURED SUPPORT

Filed Oct. 9, 1951

FIG. 1.

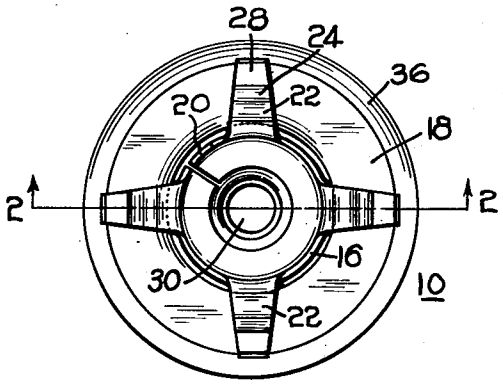


FIG. 2

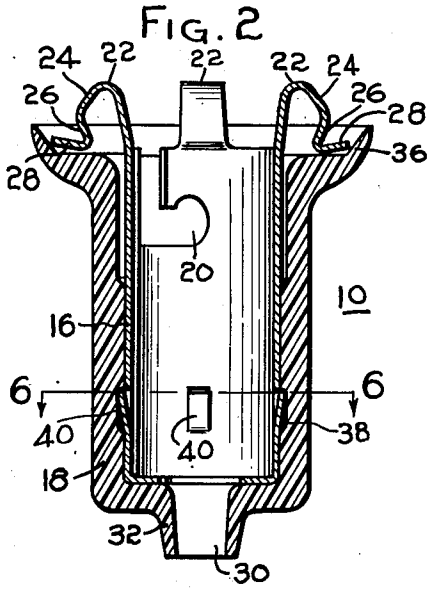


FIG. 3

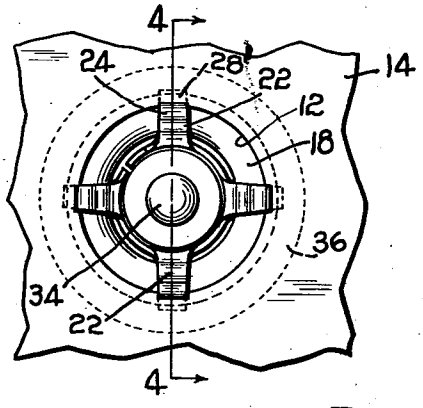


FIG. 4.

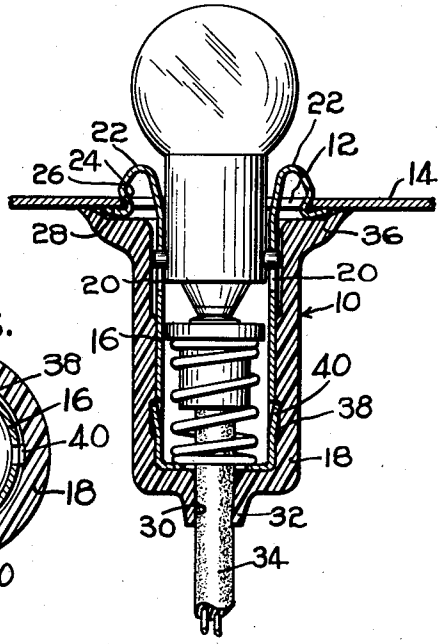


FIG. 6.

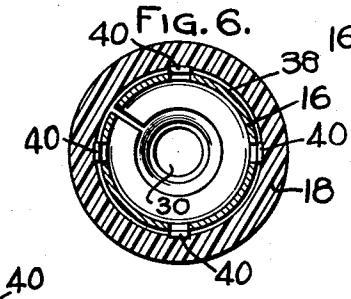
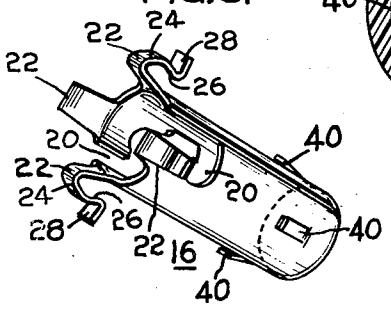


FIG. 5.



INVENTOR:
CLARENCE W. COCHRAN,
BY Robert E. Ross
AGENT.

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LAMP SOCKET HAVING RADIALLY EXPANDING SPRING FINGERS TO MOUNT IT IN AN APERTURED SUPPORT

Clarence W. Cochran, Belmont, Mass., assignor, by mesne assignments, to United-Carr Fastener Corporation, Boston, Mass., a corporation of Delaware

Application October 9, 1951, Serial No. 250,475

2 Claims. (Cl. 339—128)

This invention relates generally to lamp sockets, and has particular reference to a lamp socket assembly adapted to seal a panel opening against the passage of dust and moisture.

In the assembly of automobiles and the like, to provide illumination for the instrument panel, snap-in type lamp sockets are mounted into suitable openings in a rear support panel. Since such snap-in sockets ordinarily do not completely seal the opening, dust and moisture can pass through the opening and enter the instrument space.

The object of the invention is to provide a snap-in type lamp socket having a housing for abutting a panel when the socket is snapped into an opening therein.

A further object of the invention is to provide a snap-in type lamp socket in which a housing formed of resilient material is provided with a panel-bearing flange which is so disposed as to be tightly compressed against the panel about the socket-receiving opening when the socket is snapped into engagement into the opening.

A still further object of the invention is to provide a snap-in type lamp socket having an improved panel-engaging means.

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

In the drawing:

Fig. 1 is a top plan view of a lamp socket embodying the features of the invention;

Fig. 2 is a view in section taken on line 2—2 of Fig. 1;

Fig. 3 is a top plan view of the socket member of Fig. 1 assembled into a panel opening;

Fig. 4 is a view in section taken on line 4—4 of Fig. 3, with the electrical components assembled in the socket;

Fig. 5 is a perspective view of the inner body portion of the socket of Fig. 1; and

Fig. 6 is a view in section taken on line 6—6 of Fig. 2.

Referring to the drawing, there is illustrated a lamp socket assembly **10**, which is adapted for snapping engagement into an opening **12** in a panel **14**.

The socket assembly **10** comprises generally an inner sheet metal body **16**, and an outer housing **18** disposed thereabout which is preferably formed of a resilient material such as rubber or a resilient thermoplastic material such as polyethylene. The inner body **16** may be conveniently formed of a single piece of sheet metal, shaped to form a split cylinder with J-slots **20** formed in one end thereof in the usual manner. To provide means for attaching the socket to the panel, a series of spring arms **22** are provided, which extend from one end of the cylinder. The arms **22** each extend longitudinally from the body, and then are turned outwardly and back on themselves to form an outwardly and rearwardly inclined portion **24** and then extend inwardly and rearwardly to form a snap shoulder portion **26**, and terminate in a radially extending free end portion **28** to form feet for bearing against the panel when the socket is assembled.

The housing **18** may conveniently be formed of a single piece of molded thermoplastic, provided with a hollow cylindrical shape to receive the sheet metal body **16** internally, and has an opening **30** at one end, having a collar **32** disposed thereabout, to receive an electrical lead wire **34**. A sealing flange **36** is provided at the other end of the housing, and said flange is disposed radially thereabout and is inclined longitudinally of the body so as to normally protrude beyond the feet **28**.

To provide means for retaining the inner body and the housing in assembly, a molded recess **38** is provided in the housing, and a series of tongues **40** are provided on the inner body which seat in the recess **38** when the parts are assembled.

To assemble the socket assembly into the panel opening **12**, the spring arms **22** are inserted into the opening until the shoulders **26** snap into engagement with the panel edge and the feet **28** bear against the surface of the panel to properly position the socket longitudinally in relation to the panel. During assembly, the flange **36** bears against the panel circumferentially about the spring arms, and since the flange normally protrudes beyond the feet **28**, the flange will be forced into tight engagement with the panel to provide a dust-tight and moisture-resistant seal about the socket.

To seal the other end of the socket, the internal diameter of the collar **32** is slightly smaller than the diameter of the lead wire **34**, so that when the wire is assembled therethrough, the collar is expanded slightly so as to resiliently grip the wire and seal the opening.

The shape of the spring arms provides a great amount of spring action, and provides a secure engagement in slightly oversize or undersize openings. Such construction also allows a greater amount of tolerance in manufacture, and permits frequent insertions and withdrawals of the socket from the panel opening without impairing the spring action of the arms.

Since certain obvious modifications may be made in the 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:

1. A lamp socket for snapping engagement into a panel opening, comprising a hollow sheet metal body having a series of arms disposed on one end thereof for snapping engagement into a panel opening, each of said arms extending axially forward of the body and then being turned outwardly and back on itself to form a panel engaging portion, said panel engaging portion having an outwardly extending shoulder formed thereon, and each arm terminating in a radially extending free end, and a housing assembled about the body, said housing being formed of resilient material and having a portion at one end disposed immediately behind said radially extending free ends of the arms and extending radially beyond the ends thereof, and a resilient flange extending forwardly from said portion outside said free ends and being inclined outwardly, said flange terminating a substantial distance forwardly of said free ends to seal tightly against the panel about the opening, said housing having a circumferential recess formed therein, said body having a series of tongues formed therein to project into the recess, said tongues extending generally forwardly and being inclined slightly outwardly to permit assembly of the body into the housing until the tongues enter the recess and to prevent movement of the housing rearwardly of the body after assembly.

2. A lamp socket assembly comprising an inner sheet metal body and a resilient insulating housing assembled about the body, said body having resilient means extending axially from one end thereof for snapping engagement with a panel opening, said housing having a resilient flange disposed about the arms and projecting forwardly

of the body to bear against the panel about the opening, said housing having a circumferential recess formed therein, said body having a tongue formed therein to project into the recess, said tongue extending generally forwardly and being inclined slightly outwardly to permit assembly of the body into the housing until the tongues enter the recess and to prevent movement of the housing rearwardly of the body after assembly.

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