Dec. 29, 1953 W. H. CHURCHILL 2,664,549

LAMP SOCKET FOR SNAP FASTENER ENGAGEMENT WITH AN APERTURED SUPPORT

Filed April 13, 1950

FIG. 1.

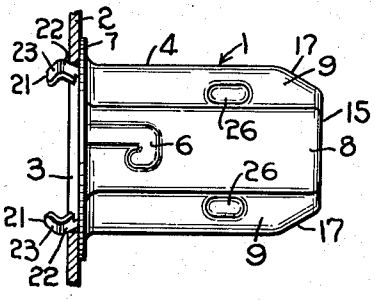


FIG. 2.

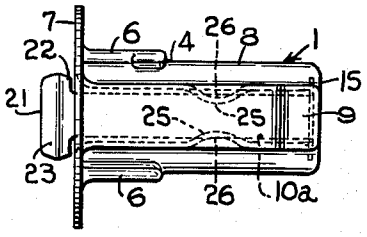


FIG. 3.

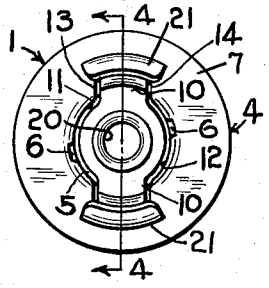


FIG. 4.

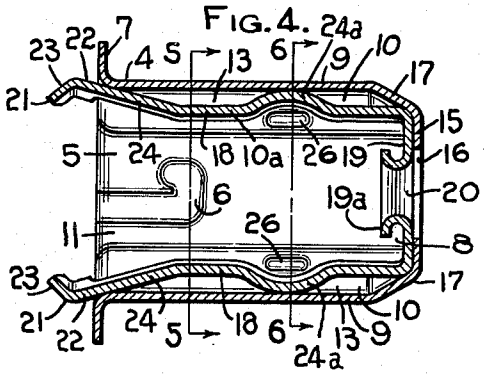


FIG. 5.

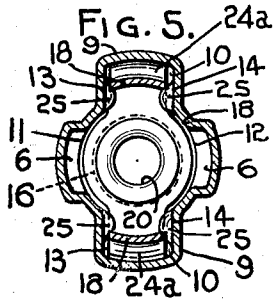


FIG. 6.

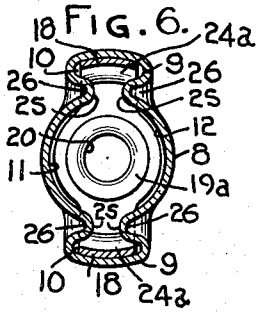


FIG. 8.

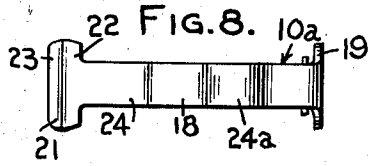


FIG. 7.

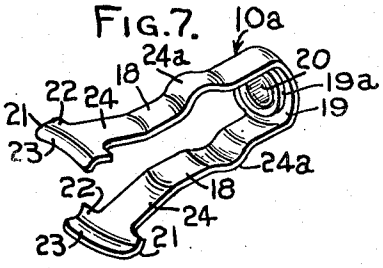
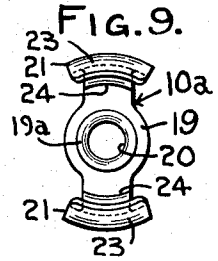


FIG. 9.



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LAMP SOCKET FOR SNAP FASTENER ENGAGEMENT WITH AN APERTURED SUPPORT

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Application April 13, 1950, Serial No. 155,676

1 Claim. (Cl. 339—128)

1

This invention relates to lamp sockets of the general type described and claimed in the application of Forbes Howard, Serial No. 155,737, filed April 13, 1950, and aims generally to improve and simplify this type of socket for various uses.

A primary object of the invention is the provision of a two-part electric lamp socket of simple and economical construction having improved snap fastener engagement with an apertured support.

A further object of the invention is the provision of an improved arrangement of socket and socket attaching means adapted for ready engagement with support apertures of varying sizes.

Another and more specific object of the invention is the provision of a lamp socket assembly of the type referred to above having improved and simplified means for securing the support-engaging snap fastener means to a socket member and for varying the bending movement and thus the stiffness of the resilient snap fastener arms to obtain an improved snap fastener action for some uses.

These and other objects and advantages of the invention will be apparent to persons skilled in the art from a consideration of the accompanying drawing and annexed specification illustrating and describing a preferred embodiment of the invention.

In the drawings—

Fig. 1 is a side elevational view of a lamp socket embodying the invention engaged with an apertured support, the latter being shown in section;

Fig. 2 is a top plan view of the lamp socket;

Fig. 3 is an end view of the lamp socket;

Fig. 4 is a vertical cross-sectional view of the lamp socket taken on the line 4—4 of Fig. 3;

Fig. 5 is a vertical cross-sectional view of the lamp socket taken on the line 5—5 of Fig. 4;

Fig. 6 is a vertical cross-sectional view of the lamp socket taken on the line 6—6 of Fig. 4;

Fig. 7 is a perspective view of the spring frame;

Fig. 8 is a side view of the spring frame; and

Fig. 9 is an end view of the spring frame.

The improved lamp socket of the invention, designated generally by the numeral 1, is adapted for snap fastener engagement with a support 2 having an aperture 3. The support 2 may be a metal panel such as the instrument panel of an automobile or the like or alternatively may be an apertured support intended for other similar uses. The aperture 3 is preferably circular to facilitate application of the socket to a support but may also be rectangular, square and the

2

like, with rounded ends for engagement with the spring fingers hereinafter described.

The socket 1 comprises a body portion 4 which is generally elliptical in cross-sectional shape, and provided with an open end 5 for the reception of a lamp base. Pressed-out keyways or slots 6 are provided in the body portion 4 for engagement with pins or projections on the lamp base to lock it in assembled position with the socket.

At its open end the body portion 4 is provided with an outwardly extending flanged base portion 7 adapted for pressure engagement with an apertured support 2 to seal the socket against entry of dust. If desired, a suitable gasket may be interposed between the flanged base portion 7 and support 2 to increase the effectiveness of the seal.

The body portion 4 comprises a central tubular portion 8 of a diameter to snugly receive the base of a lamp and having oppositely disposed longitudinal pressed-out portions 9 communicating therewith and defining substantially rectangularly shaped grooves or channels 10 for the reception of the arms of a spring frame 10a hereinafter described. As will be apparent from Figs. 3 and 5, this construction provides a body portion 4 having oppositely disposed arcuate surfaces 11 and 12 which connect with the sides 13 and 14 of the pressed-out portions 9 to form the central tubular portion 8 and the communicating grooves or channels 10.

Opposite its open end the body portion 4 is provided with an inwardly extending flanged end portion 15 having an aperture 16 for the passage of suitable wiring connections. Adjacent the ends thereof the pressed-out portions 9 are preferably curved or bevelled inwardly to the end portion 15 as shown at 17.

The spring frame 10a may comprise a substantially U-shaped member preferably formed of resilient sheet material such as spring metal and having lateral spring arms 18 and a connecting bight or base portion 19. The base portion 19 is preferably substantially circular or disc-like in shape to fit within the body portion 4 against the end 15 thereof and is provided with an aperture 20 for the passage of suitable wiring connections. If desired, the aperture 20 may be formed by curling the inner edges of the base portion 19 inwardly and around to provide a collar or ferrule 19a.

The spring arms 18 extend laterally outwardly from the base portion 19 into and through the grooves or channels 10 and are provided at their terminal ends with support-engaging prongs or fingers 21 which project beyond the open end of

the casing. The prongs 21 may be formed with diverging, converging portions 22 and 23 which are preferabliy somewhat wider than the spring arms 18 and convexly curved on the arc of a circle for snap fastener engagement with the aperture of a support.

The spring arms 18 may be substantially straight and are preferably flared outwardly adjacent the ends thereof as shown at 24 for more effective snap fastener action and movement. The arms 18 are freely movable inwardly in the grooves 10 and are normally urged outwardly by the resiliency of the metal of which they are formed. However, when the prongs 21 are moved inwardly toward each other, as by pressure engagement with the edge of a support aperture, the arms 18 are bent inwardly, the natural resiliency of the metal resisting such movement to give the desired snap action. Intermediate the ends thereof the arms 18 are bowed or bent outwardly as shown at 24^a for cooperation with novel attaching and securing means hereinafter described.

In accordance with the invention the side walls 13 and 14 of the pressed-out portions 9 are pressed inwardly or indented as shown at 25 to form inwardly extending indentations, projections or knobs 26 positioned inwardly of the spring arms 18 at the bowed-out portions 24^a and in abutting relation therewith. These serve as attaching or securing means to secure the spring frame 10^a in assembled relation with the socket, thus eliminating the need for attaching rivets, flanges and the like, and simultaneously serves as a fulcrum shifting device whereby the fulcrum about which the spring arms bend may be shifted from the ends of the arms to any desired intermediate portions thereof. By virtue of this arrangement the bending moment and thus the degree of stiffness or resiliency of the spring arms 18 may be varied to suit individual needs or conditions, thereby adapting the device to a greater variety of uses.

For most purposes the projections 26 may be positioned substantially as shown in the drawing. This provides a lighter, more resilient action than that obtained with the usual ring-mounted resilient support-engaging prongs and a somewhat stiffer action from that obtained with the same type of device when the fulcrum is located adjacent the ends of the arms. It also provides ample tolerance take-up so that the device may be used with apertured supports in which the apertures are non-uniform in size.

However, it is contemplated that the projections or indentations 26 may be positioned at any desired location intermediate the ends of the spring arms 18 to obtain the required type of action in accordance with specific applications.

The invention thus provides a two-part lamp socket assembly of simple and economical construction designed to provide the proper degree of resiliency of the snap fastener action.

While I have illustrated and described a preferred embodiment of the invention, I do not intend to be limited to the specific details thereof as the scope of the invention is best defined in the appended claims.

I claim:

The lamp socket assembly comprising a body member formed from sheet metal and having a tubular portion and outwardly pressed oppositely disposed groove-forming portions, radially outwardly extending support engaging portions at one end of said tubular portion and a radially inwardly extending flange at the other end of said tubular portion, said groove-forming portions providing opposed grooves extending axially of said tubular portion, said grooves having side walls extending radially outwardly from the tubular portion and bottom walls displaced radially outwardly from the walls of such tubular portion, said grooves being open at said one end of said tubular portion and closed at said other end, a U-shaped member having spring arms and a connected bight portion disposed in said body member with the spring arms positioned in said groove forming portions and the bight portion positioned against the flange at said other end, intermediate portions of said spring arms being bowed outwardly and disposed adjacent to said bottom walls of said grooves, intermediate portions of the opposed side walls of said grooves being indented to provide opposed projections extending toward each other and disposed radially inwardly of the intermediate portions of said spring arms, said projections serving as attaching means in co-operation with said intermediate portions of said spring arms to secure said spring member to said body member and as fulcrum means for said spring arms, the free ends of said spring arms extending beyond said one end of said body member and including means for snap fastener engagement with an apertured panel to secure the socket assembly against said panel.

WILMER H. CHURCHILL.

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