

Dec. 29, 1953

F. HOWARD
LAMP SOCKET PROVIDED WITH MEANS TO
SECURE IT TO AN APERTURED PANEL
Filed April 13, 1950

2,664,550

FIG. 1.

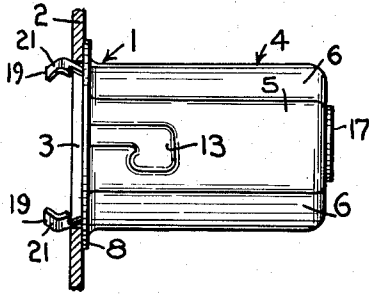


FIG. 2.

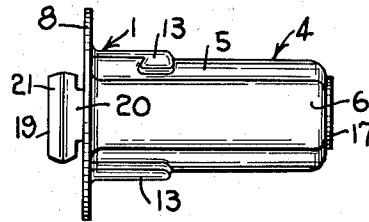


FIG. 3.

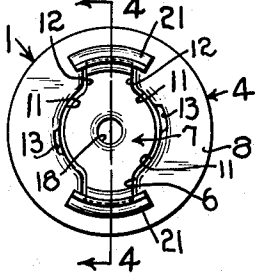


FIG. 4.

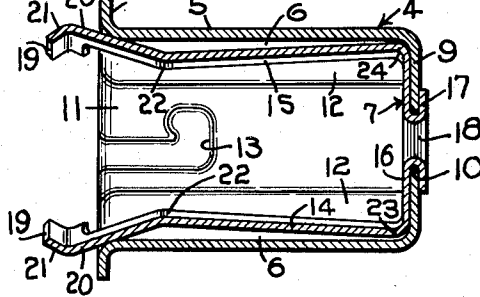


FIG. 6.

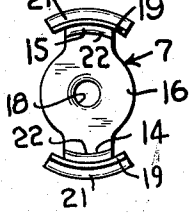


FIG. 5.

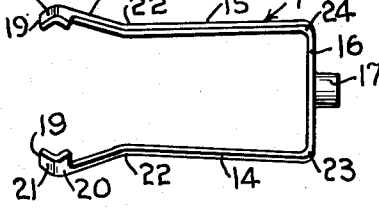


FIG. 7.

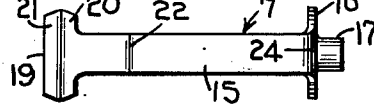


FIG. 10.

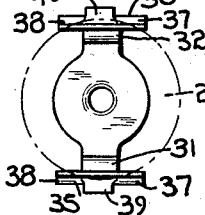


FIG. 9.

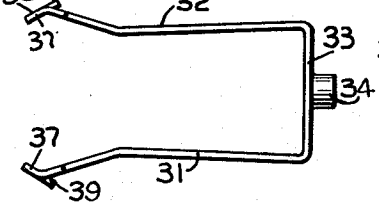


FIG. 8.

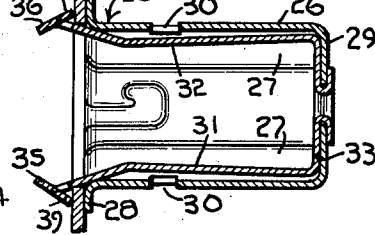
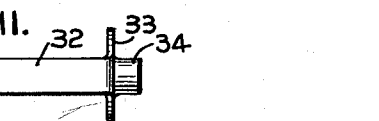
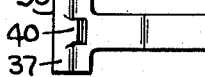


FIG. 11.



INVENTOR:
FORBES HOWARD,
BY *Philip E. Parker*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,664,550

LAMP SOCKET PROVIDED WITH MEANS TO
SECURE IT TO AN APERTURED PANEL

Forbes Howard, Grosse Pointe Farms, Mich., as-
signor to United-Carr Fastener Corporation,
Cambridge, Mass., a corporation of Massachu-
setts

Application April 13, 1950, Serial No. 155,737

4 Claims. (Cl. 339-128)

1

This invention relates to lamp sockets such as are used for the indirect lighting of instrument panels of automobiles and the like, and more particularly to such lamp sockets adapted for snap fastener engagement with an apertured support, and aims generally to improve existing devices of this type.

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

A further and more specific object of the invention is the provision of improved support-attaching means for an electric lamp socket.

A still further object of the invention is the provision of a two-piece electric lamp socket comprising a lamp-receiving member and cooperating resilient support-engaging members constructed and arranged to facilitate the application of the socket to a support.

Another object of the invention is the provision of a lamp socket assembly embodying a novel arrangement of elongated resilient support-engaging arms and mounting means therefor designed to provide greater resiliency and tolerance take-up and to permit the use of a two-piece assembly of this general type.

Still another object of the invention is the provision of a lamp socket assembly provided with means for automatically locking the assembly in mounted position on an apertured support and for releasing the assembly from locked position.

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

In the drawings—

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

Fig. 2 is a top view of the lamp socket of Fig. 1;

Fig. 3 is a front 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 side view of the support-engaging spring;

Fig. 6 is an end view of the support-engaging spring;

Fig. 7 is a top view of the support-engaging spring;

Fig. 8 is a vertical cross-sectional view similar

2

to Fig. 4, showing a slightly modified form of the invention applied to a support, the latter being shown in section;

Fig. 9 is a side view of the support-engaging spring of the form of the invention shown in Fig. 8;

Fig. 10 is an end view of the support-engaging spring of Fig. 9; and

Fig. 11 is a top view of the support-engaging spring of Fig. 9.

The socket 1 of the invention 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, and the aperture 3 may be of any suitable shape, such as round, square, rectangular or the like but is preferably round.

The socket 1 comprises a casing 4 preferably formed from a single piece of sheet material such as sheet metal, and having a tubular body portion 5 adapted to seat a lamp base and oppositely disposed longitudinally extending grooved portions 6 communicating with the tubular body portion 5 and adapted to receive the spring arms of a support-engaging resilient spring member 7 hereinafter described.

The grooved portions 6 may desirably be substantially rectangular or square in cross-sectional shape and are preferably formed by pressing the material of the tubular body portion 5 outwardly, as shown, to form the generally elliptical shaped casing 4.

One end of the casing 4 is open and provided with an outwardly extending support-engaging flange 8 adapted to sealingly engage the support 2 around the aperture 3 therein to seal the open end of the socket against the entry of dust and the like. If desired, a gasket of suitable material may be interposed between the flange 8 and support 2 to increase the effectiveness of the seal.

At its opposite end the casing 4 is provided with an end closure 9 centrally apertured as at 10 to receive a portion of the socket-attaching means as will be more apparent hereinafter.

From the above description it will be apparent that the construction herein provides a casing 4 generally elliptical in cross-sectional shape and composed of the tubular body portion 5 and the communicating pressed-out groove portions 6. Inwardly thereof the tubular body portion 5 has oppositely disposed arcuate surfaces 11 adapted to receive and snugly engage the base of a lamp and connected with the sides 12 of the pressed-out groove portions 6. Keyways or slots 13 are formed in the arcuate surfaces 11 for receiving

3

pins or projections on the lamp base to lock the lamp in position in the socket.

The support-engaging spring member 7 is preferably formed from a strip of resilient sheet metal, such as sheet steel, bent into the general shape of a U to form oppositely disposed spring arms 14 and 15 and a connecting bight or base portion 16. The base portion 16 is preferably substantially circular in shape and of a size to fit within the tubular body portion 5 adjacent the end 9 of the casing 4.

Substantially centrally thereof the base portion 16 is formed with a tubular rivet-like or flanged portion 17 preferably pressed out of the base and having a central aperture 18 for the passage of suitable current-conducting wires. The tubular rivet or flanged portion 17 is adapted to be inserted through the aperture 10 in the end of the casing 4 and then turned outwardly against the end 9 to rivet or clamp the base 16 to the casing.

The spring arms 14 and 15 extend laterally outwardly from the base portion 16 into and through the grooved portions 6 and are provided at their terminal ends with support-engaging prongs or fingers 19 which project beyond the end of the casing. The prongs 19 may be formed with diverging, converging portions 20 and 21 preferably curved on the arc of a circle for snap fastener engagement with the edges of a support aperture as will be readily apparent.

The spring arms 14 and 15 may be substantially straight or may be bowed inwardly as illustrated at 22 in the drawing. They are arranged to be freely movable transversely inwardly and outwardly in the grooved portions 6 and are normally urged outwardly therein by the resiliency of the metal. However, when the prongs 19 are moved inwardly toward each other, as by pressure engagement with the edges of a support aperture, the arms 14 and 15 are bent inwardly about fulcrum points or axes 23 and 24 located adjacent their connection with the base portion 16. The natural resiliency of the metal in the arms and fulcrums resists such movement so that the desired snap fastener action is obtained. Moreover, due to the length of the arms and the possibility of substantial transverse movement in the grooved portions 6, greater resiliency of the attaching means is obtained and greater variations in the size of the support aperture may be tolerated. Mounting of the socket in various sized support apertures is thereby facilitated.

In the modified form of the invention shown in Figs. 8 to 11 there is provided a casing 25 having a tubular body portion 26, communicating grooved portions 27, a turned-out support-engaging flange 28 and an end closure 29, as in the previous embodiment. In addition, transverse slots 30 are provided in the outer sides of the grooved portions 27 so that a suitable tool, such as a screw driver or the like, may be inserted therethrough and pressed against the spring arms of the attaching member to release the support-engaging locking fingers or prongs from locked position.

The spring arms 31 and 32, connecting base portion 33 and rivet-like or flange portion 34, are substantially similar in form to the corresponding elements of the embodiment of the invention previously described. However, in this form of invention the support-engaging fingers or prongs 35 and 36 are made substantially straight transversely rather than curved so that

4

laterally extending projections or flanges 37 and 38 act as locking tongues which are spaced outwardly from the flange 28 so as to lockingly engage the rear face of a support when the socket is in mounted position, as shown in Fig. 8.

Additional or alternative locking means are provided by striking up a portion of the metal of the prongs 35 and 36 to form outwardly and rearwardly projecting locking tongues 39 and 40. These are likewise spaced from the flange 28 so as to lockingly engage the rear face of a support panel.

When the modified form of the device shown in Figs. 8 to 11 is mounted on an apertured support, it is securely locked in position by the flanges 37 and 38 and locking tongues 39 and 40, and can only be removed by inserting a suitable tool through the slot 30 and pressing the spring arm inwardly to release the locking prongs and tongues.

The invention thus provides a novel two-part lamp socket assembly in which the socket and attaching means are so constructed and arranged as to provide greater resiliency of the snap fastener action and greater tolerance take-up. By the construction herein shown and described, the necessity for a third part to receive and hold the lamp base is eliminated and the lamp base is securely and tightly held by the socket casing itself.

While I have illustrated and described preferred embodiments 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 following claims.

I claim:

1. A lamp socket comprising a casing having a tubular body portion opposed wall portions adapted for seating a lamp base, opposed lateral extensions on said body portion forming longitudinal grooves communicating with the interior thereof, said lateral extensions being positioned intermediate said wall portions alternately about the circumference of said tubular body portion, spring arms disposed in said longitudinal grooves and secured to said body portion, said arms extending beyond an end of said body portion and provided with support-engaging prongs adapted for snap fastener engagement with an apertured support, said arms being movable within said grooves toward the interior of said casing to facilitate the snap fastener engagement of said prongs with such support.

2. A lamp socket comprising a substantially elliptical shaped casing having oppositely disposed curved surfaces adapted to seat a lamp base and intermediate outwardly extending groove-forming means providing opposed inwardly directed grooves, said groove-forming means being positioned intermediate said curved surfaces for seating a lamp base and alternately therewith about the circumference of said casing, spring arms disposed in said groove-forming means and extending beyond an end of said casing, said spring arms being fulcrumed at an opposite end of said casing and substantially movable within said groove-forming means, and support-engaging prongs disposed on the extended ends of said spring arms and adapted for snap fastener engagement with an apertured support.

3. A lamp socket comprising a casing member formed from a single sheet of material, said casing having curved lamp base receiving portions and outwardly pressed groove-forming portions, said groove-forming portions being positioned

intermediate said lamp base receiving portions and alternately therewith about the circumference of said casing, spring arms disposed in said groove-forming portions and fulcrumed adjacent the inner ends thereof, the outer ends of said arms extending from an end of said casing and provided with means for snap fastener engagement with an apertured support, said spring arms being substantially movable within said groove-forming portions.

4. A lamp socket comprising a casing having opposed outwardly extending longitudinal grooves therein, opposed wall portions adapted for seating a lamp base, said longitudinal grooves being positioned intermediate said wall portions and alternately therewith about the circumference of said casing, spring arms disposed in said grooves and extending outwardly beyond an end of said casing, said spring arms being bendable about fulcrum points located adjacent an opposite end of said casing and substantially movable within

said grooves, support-engaging prongs disposed on the ends of said spring arms, and locking flanges on said prongs for locking engagement with a support, into said grooves for facilitating the release of said locking flanges.

FORBES HOWARD.

References Cited in the file of this patent
UNITED STATES PATENTS

10	Number	Name	Date
	123,355	Mumler	Feb. 6, 1872
	570,669	Lapworth	Nov. 3, 1896
	979,927	Brown et al.	Dec. 27, 1910
15	1,110,163	Thomas	Sept. 8, 1914
	1,881,811	Mead	Oct. 11, 1932
	1,976,501	James	Oct. 9, 1934
	2,208,437	Stearns	July 16, 1940
	2,239,451	Stearns	Apr. 22, 1941
20	2,572,813	Murphy	Oct. 23, 1951