Aug. 26, 1941. R. N. FALGE 2,253,616

HEAD LAMP MOUNTING (BULB MOUNTING)

Filed July 27, 1939

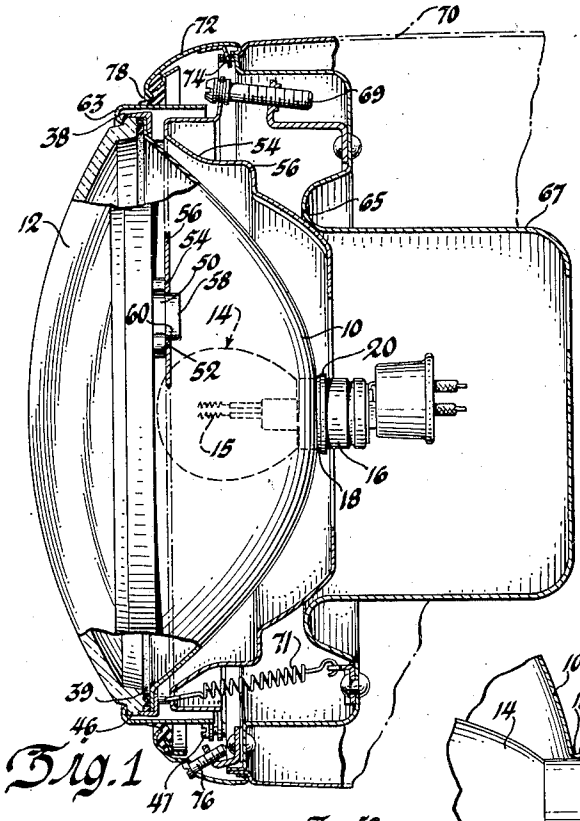


Fig. 1

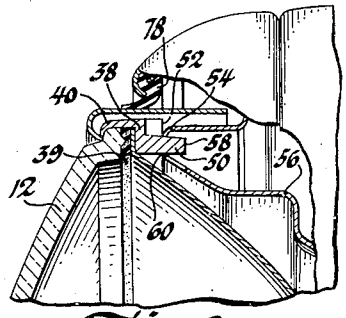


Fig. 6

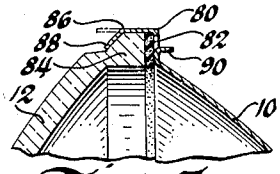


Fig. 7

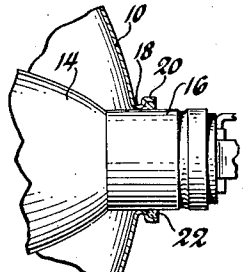


Fig. 4

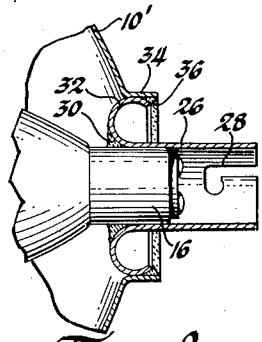


Fig. 8

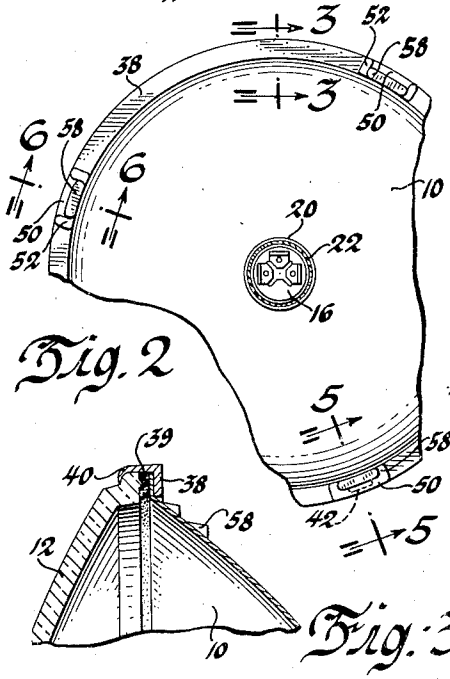


Fig. 2

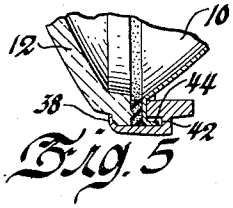


Fig. 5

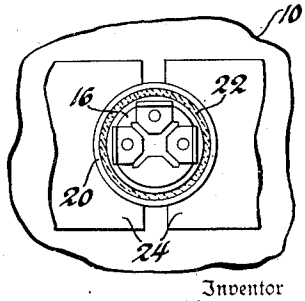


Fig. 9

Fig. 3

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2,253,616

HEAD LAMP MOUNTING (BULB MOUNTING)

Robert N. Falge, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Application July 27, 1939, Serial No. 286,819

7 Claims. (Cl. 176—34)

This invention has to do with so-called package lamps, that is, lamps consisting of a reflector, lens and light source, the connection between the reflector and lens being sealed and the light source being sealed within the reflector so that the whole becomes a unit package in which the reflector is protected from the air and remains untarnished throughout the life of the lamp. The particular kind of package lamp to which this invention relates is one in which the light source is in the form of a conventional incandescent lamp bulb and the present invention has to do with certain improvements in such package lamps.

One of these improvements consists in a method and means for securing the bulb within the reflector. This means preferably consists in the provision of an aperture in the reflector within which the bulb may be universally adjusted together with means for securing and sealing the bulb in place when properly adjusted in the aperture.

Another improvement consists in the provision of indexing lugs on the reflector to insure its being properly positioned in the lamp support.

Another improvement consists in simplification of the means for connecting the reflector to the lens.

Details of the improvements are set forth in the accompanying specification and the novel features are pointed out in the accompanying claims.

In the drawing:

Figure 1 is a section through the improved package lamp showing a way in which it may be mounted for service as an automobile headlamp.

Figure 2 is a fragmentary rear view of the package lamp.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a section through the connection between the reflector and bulb of the package unit.

Figure 5 is a section on line 5—5 of Figure 2.

Figure 6 is a view showing a section through the package lamp on line 6—6 of Figure 2 together with the cooperating parts of the mounting shown in Figure 1.

Figure 7 is a fragmentary radial section showing a modified construction.

Figure 8 is a section corresponding to Figure 4 showing a modification of the lamp bulb mounting.

Figure 9 is a fragmentary plan view with parts broken away showing a method of making the connection shown in Figure 4.

The package lamp consists of reflector 10, lens 12 and incandescent lamp bulb 14 comprising the usual filament 15 and metal base 16. In the construction shown in Figures 1 and 4 the reflector 10 is provided with an aperture defined by a rounded edge 18 terminating in an axially extending flange 20. In this aperture the metal base 16 of the bulb 14 is an easy fit so as to permit the bulb to be moved axially and adjusted universally so as to locate the filament 15 in the desired position with respect to the focus of the reflector. Before the bulb is properly positioned a ring of solder 22 is placed about the base 16 and within the flange 20 as shown in Figure 9 and electrodes 24 are pressed against the opposite sides of the flange 20. When current is passed through the electrodes 24 the reflector flange becomes hot, causing the solder to melt and fuse or bond to the reflector and to the bulb base, forming a good air tight seal between them.

In Figure 8 there is shown a modified bulb mounting. Here 26 indicates a metal sleeve having its outer end provided with bayonet slot 28 to receive a suitable connector for supplying current to the bulb. The other end of the sleeve is secured to the bulb base 16 by solder as indicated at 30. This end of the sleeve 26 is belled out as at 32 so as to be an easy fit within the flanged opening 34 in the reflector 10'. With this construction the bulb is adjusted back and forth, up and down, and from side to side until the filament is properly located with respect to the focus of the reflector and then the bulb is secured to the reflector by solder, indicated at 36.

In Figures 1 to 6 the reflector 10 is shown secured to the lens 12 by means of ring 38 having a thin outer flange 40 which is clinched over the flange on the lens as best shown in Figure 3. The ring is preferably made by die-casting but may be produced by stamping or by any other desired method. To prevent rotation of the reflector with respect to the ring 38, the ring is preferably provided with a socket 42 shown in Figures 2 and 5 in which is received a tang 44 bent down from the outer edge of the reflector.

To prevent rotation of the lens with respect to the ring 38, the lens is provided with a lug 46 shown at the bottom of Figure 1 which extends into a close-fitting notch provided in the flange of the ring.

The ring 38 is preferably provided with stepped lugs 50 unequally spaced about the periphery of

the unit. As shown in Figure 6 the stepped portions 52 rest on annular seat 54 formed on stamping 56 which serves as the ball of a ball and socket mounting for the package lamp. The projections 58 of the stepped lugs extend through similarly spaced apertures 60 formed in the seat 54. Rotation of the package lamp with respect to the stamping 56 is thus prevented. The unequal spacing of lugs and apertures insures that the unit will always be mounted the same way.

A gasket 39 is preferably interposed between lens 12 and the flange of reflector 10 which rests on ring 38 to make the package unit substantially air tight.

The mounting for the package lamp shown in Figures 1 and 6 is the subject of copending application for patent filed in the names of Howard C. Mead and Robert D. Winkelmeyer, S. N. 286,820, under date of July 27, 1939. For the present purpose it will suffice to explain that the package lamp is held in the stamping 56 by means of clamping ring 63 which is secured to the stamping by suitable fastening devices such as shown at 47. The stamping 56 is held to seat 65 of stamping 67 by means of adjusting screws, one of which is shown at 69, and springs as at 71. The adjusting screws 69 permit tilting of the package lamp to give the desired aim. The stamping 67 is suitably secured in the lamp housing shown at 70 or in any suitable aperture in the automobile body.

72 represents a bezel or finish ring secured to the lamp housing or other support 70 by means of tongue 74 which hooks into an opening in the top of the lamp body and bolt 76 which secures the bottom of the bezel to the lamp body. A rubber washer 78 connected to the bezel 72 has sealing engagement with the clamping ring 63.

In Figure 7 there is shown a modification of the connection between reflector 10 and the lens 12. Here the reflector is provided with a radial flange 80 on which is seated gasket 82 and on the gasket rests the flange 84 of the lens. Flange 80 is provided with a radial continuation 86, the outer end of which is clinched over at 88 to secure the lens to the reflector. 90 indicates a tang bent out of the flange 80 of the reflector. A plurality of such tangs are provided, unequally spaced about the periphery of the package lamp as in the case of the lugs 50 of Figure 2. These tangs serve the same purpose as the lugs in preventing rotation of the package lamp in its mounting.

I claim:

1. In a lamp, the combination of a metal reflector, a light source sealed in the reflector, a radial flange on the reflector, a lens seated against said flange, an axial flange connected to the radial flange and extending outwardly over the edge of the lens, an inwardly extending radial flange formed over the edge of the lens to hold the lens to the reflector, and a locating tongue pressed out from the first-named flange in the area overlying the lens.

2. In a lamp, the combination of a metal reflector, a light source sealed in the reflector, a radial flange on the reflector, a lens seated against said flange, a gasket between the radial flange and the lens forming a seal therebetween, an axial flange connected to the radial flange and extending outwardly over the edge of the lens, an inwardly extending radial flange formed over the edge of the lens to hold the lens to the reflector, and a locating tongue pressed out from said radial flange outwardly of said gasket so as not to break the seal.

3. In a lamp, the combination of a metal reflector having an aperture therein for receiving a lamp bulb, the edges of said aperture curving outwardly and terminating in an annular, axially extending flange at least a portion of which is of larger diameter than the aperture, a lamp bulb having a light source therein and having a base of such size as to have a sliding and rocking fit in the aperture so as to permit universal as well as longitudinal adjustment of the bulb in the reflector, said bulb being positioned in the reflector with its base in the aperture and its source in predetermined position adjacent the focus of the reflector, sealing means occupying the space between the said flange and the base, securing the bulb to the reflector and sealing the joint between them, a lens over the reflector and means for sealing the lens to the reflector, whereby the lamp is rendered impervious to dust and moisture.

4. In a lamp, the combination of a metal reflector having an aperture therein for receiving a lamp bulb, the edges of said aperture curving outwardly and terminating in an annular, axially extending flange at least a portion of which is of larger diameter than the aperture, a lamp bulb having a light source therein and having a base of such size as to have a sliding and rocking fit in the aperture so as to permit universal as well as longitudinal adjustment of the bulb in the reflector, said bulb being positioned in the reflector with its base in the aperture and its source in predetermined position adjacent the focus of the reflector, sealing means occupying the space between the said flange and the base, securing the bulb to the reflector and sealing the joint between them, a lens over the reflector, a gasket interposed between the lens and reflector and means including a flange formed over the edge of the lens for securing the lens to the reflector, whereby the lamp is rendered impervious to dust and moisture.

5. In a lamp, the combination of a metal reflector having an aperture therein for receiving a lamp bulb, the edges of said aperture curving outwardly and terminating in an annular, axially extending flange at least a portion of which is of larger diameter than the aperture, a lamp bulb having a light source therein and having a base of such size as to have a sliding and rocking fit in the aperture so as to permit universal as well as longitudinal adjustment of the bulb in the reflector, said bulb being positioned in the reflector with its base in the aperture and its source in predetermined position adjacent the focus of the reflector, sealing means occupying the space between the said flange and the base, securing the bulb to the reflector and sealing the joint between them, a lens over the reflector, a gasket interposed between the lens and reflector, said reflector having its edge formed over the edge of the lens for securing and sealing the lens to the reflector, and a locating lug pressed out from a portion of said reflector lying outwardly of the inner edge of said gasket so as not to break the seal.

6. In a lamp, the combination of a metal reflector having an aperture therein for receiving the base of a lamp bulb, the metal around the aperture being curved in an axial direction so as to form an axially extending flange which together with the base of the bulb forms a pocket to receive sealing material, a lamp bulb having

a light source therein and having a base of such size as to have a sliding and rocking fit in the aperture so as to permit universal as well as longitudinal adjustment of the bulb in the reflector, said bulb being positioned in the reflector with its base in the aperture and its source in predetermined position adjacent the focus of the reflector, sealing means occupying the space between the said flange and the base, securing the bulb to the reflector and sealing the joint between them, a lens over the reflector and means for sealing the lens to the reflector, whereby the lamp is rendered impervious to dust and moisture.

7. In a lamp, the combination of a metal reflector having an aperture therein for receiving the base of a lamp bulb, the metal around the aperture being curved in an axial direction so as to form an axially extending flange which together with the base of the bulb forms a pocket to receive sealing material, a lamp bulb having a light source therein and having a base of such size as to have a sliding and rocking fit in the aperture so as to permit universal as well as longitudinal adjustment of the bulb in the reflector, said bulb being positioned in the reflector with its base in the aperture and its source in predetermined position adjacent the focus of the flector, sealing means occupying the space between the said flange and the base, securing the bulb to the reflector and sealing the joint between them, a lens over the reflector, a gasket interposed between the lens and reflector, said reflector having its edge formed over the edge of the lens for securing and sealing the lens to the reflector, and a locating lug secured to the portion of the reflector engaging the gasket but outwardly of the inner edge thereof so as to preserve the seal, whereby the lamp is rendered impervious to dust and moisture.

ROBERT N. FALGE.

CERTIFICATE OF CORRECTION.

Patent No. 2,253,616. August 26, 1941.

ROBERT N. FALGE.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, second column, line 8, claim 7, for "flector" read --reflector--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 14th day of October, A. D. 1941.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)