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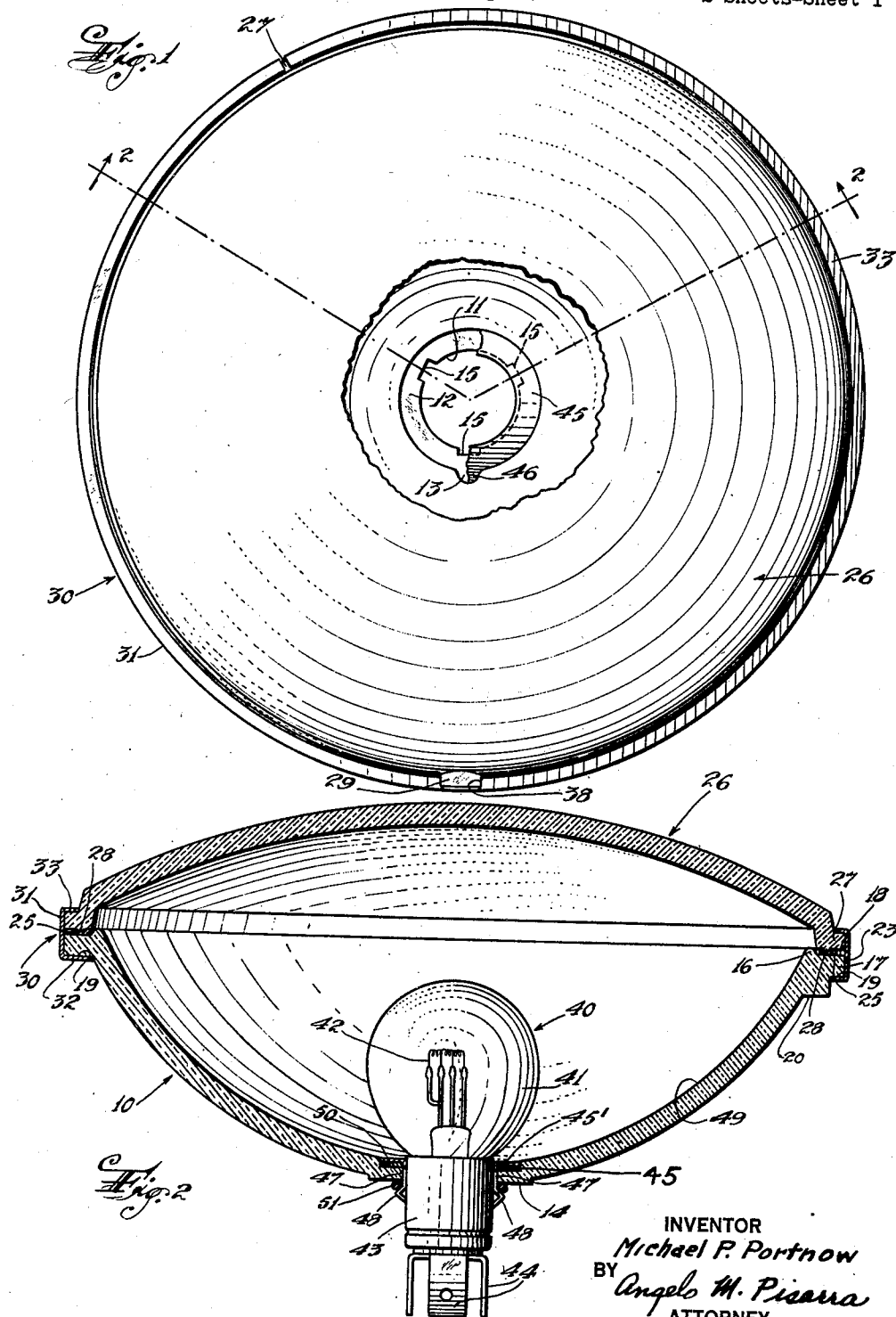
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HEADLIGHT AND PARTS THEREOF

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2 Sheets-Sheet 1



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HEADLIGHT AND PARTS THEREOF

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2 Claims. (Cl. 240—41)

This invention relates to lighting devices and more particularly to those employed on vehicles and commonly termed headlights. In its more specific aspect this invention is directed to a headlight of the sealed beam class.

The main object of this invention is to provide a sealed beam headlight having the following characteristics: (a) If any of its parts becomes damaged, it may be replaced, thus obviating the necessity of replacing the entire headlight which is the present day practice, (b) when a part is replaced, the new element will be in exactly the same position as the replaced element and this type of replacement is fool-proof and can be carried out by any car user, and (c) the elements which make up the headlight are inexpensive and may be readily handled in the assembly and replacement operations.

A further object of this invention is to provide a novel combination of lamp and locking device.

A further object of this invention is to provide a novel reflector.

These and other objects of the invention will be readily apparent from the following description and drawings, wherein:

Figure 1 represents a top plan view of a headlight embodying my invention, a part of the lens and the locating flange are broken away and the lamp has been omitted so that the relationship of the parts is more clearly ascertainable.

Figure 2 is a cross sectional view of the headlight shown in Figure 1 and includes the lamp not shown in plan view.

Figure 3 is a rear plan view of the headlight shown in Figure 1.

Figure 4 is a perspective view of the connector shown in Figures 1-3.

Figure 5 is a perspective view of the split spring ring shown in Figure 2.

Figure 6 is a top plan view of a ring which is a modification of that shown in Figures 1-4.

According to the invention a novel reflector 10 may be employed. The reflector 10 is of predetermined size and configuration and may be composed of either metal or vitreous material, but I prefer that it be composed of a vitreous material such as glass or Lucite, both of which are transparent. The reflector 10 may be of parabolic or other desired geometric design and is preferably of substantially uniform thickness throughout. The lower or apex portion of the reflector 10 has a circular opening 11 therein, and that portion thereof surrounding said opening has a shallow recess 12 which may be circular and has a small recess 13 of the same depth

communicating with the circular recess 12. The rear of the reflector 10 below the recesses 12 and 13 is a smooth plane surface 14. A plurality of slots 15 extend through the lower portion of the reflector at the recessed portion thereof. As shown in Figures 1 and 3, there are three slots 15 which are of the same dimensions and are symmetrically disposed. The upper part of the reflector 10 terminates in a narrow upstanding annular glass bead 16 concentric with the opening 11.

Integral with the reflector 10 and extending outwardly therefrom at the upper end thereof is annular glass flange 17 of appreciable width providing a platform or supporting upper plane face 18 and a lower plane face 19, with the upper face 18 located below the upper extremity of the annular bead 16. Integral with the reflector 10 and the flange 17 are two sets of glass lugs, with each set comprising lugs 20, 21 and 22. The lugs 20 and 22 are narrower, thinner and more shallow than lug 21 and the outer side of all the lugs are located inwardly from outermost cylindrical face 23 of the flange 17. Between these two sets of three each are a pair of lugs 24 similar to lugs 20 and 22. These lugs 24 are also composed of glass and are integral with the reflector and the flange 17. The lugs 24 and the lugs 20, 21 and 22 are each located at a predetermined annular position with respect to the focal point of the lens. The lugs 24 are spaced from each other as shown. The lugs 21 and the space between the lugs 24 are asymmetrically disposed. Mounted on the platform 18 and outside of the upstanding rim or bead 16 is a flat annular ring or gasket 25 composed of rubber, leather or like resilient material for making an air-tight joint. Demountably coupled with the reflector 10 is a lens 26 of predetermined contour and size. The lens 26 has an annular flange 27 of approximately the same diameter and width as the platform 18. A narrow annular glass bead or rim 28 depends from the flange 27 at the mid-width thereof. A small glass teat 29 is integral with said lens and extends upwardly therefrom and serves as a positioner so that the lens may be mounted in one way only.

A clamping ring 30 may be employed to couple the lens 26 to the reflector 10. In coupling the lens 26 and reflector 10, the gasket 25 lies flat on the platform 18 to cover most of the same. Then the lens 26 is mounted on the gasket 25 with the bead 28 thereof on the mid-width circumference of gasket 25. Then the split annular clamping ring 30 is snapped into place around

the flanges 17 and 27. The clamp 30 may include a cylindrical split ring 31 whose circumferential length is a little less than the outer circumference of the flanges 17 and 27 which are the same and whose width is a little less than the combined thickness of the flanges 17 and 27 and the gasket 25. The clamp 30 also includes a pair of inwardly extending flanges 32 and 33 being integral with said ring 31 and extending inwardly therefrom. The flange 32 is of approximately the same width as the flange 17 and is disposed at substantially right angles to the ring 31. The flange 33 is relatively narrow and is disposed at right angles to the ring 31. Integral with the flange 32 at the ends thereof are a pair of upstanding ears 34 having openings 35 extending therethrough. The flange 32 has a slot 36 therethrough adjacent each ear 34 and of such lengthwise dimension as to be just a little greater than the corresponding dimensions of the lugs 24. The flange 32 has another pair of slots 37 therethrough of such lengthwise dimension as to be a little greater than the corresponding overall dimension of the lugs 20, 21 and 22. All of the slots 36 and 37 extend inwardly from the inner free edge of the flange 32 and terminate at a line appreciably inward from the outer extremity of said flange 32. The slots 36 and 37 are spaced from each other a distance equal to the space between the lugs 24 and the lugs 20, 21 and 22.

The flange 33 has a narrow slot 38 therein and adapted to accommodate the teat 29. This slot bears a predetermined angular relationship with respect to the slots 36 and 37. A bolt 39 may extend through the opening 35 in ears 34 and a nut is threadably mounted thereon to pull the ends of the clamp 30 toward each other.

In further accordance with the invention, I provide a lamp 40 having an envelope 41, a pair of filaments 42, a cylindrical metal base 43 and three narrow blade contacts 44 secured to the lower face of the base, extending downwardly therefrom and located within the cylinder if the base were downwardly extended. Concentrically mounted on said base is a narrow ring 45 having a thin, flat annular flange 45' extending outwardly therefrom. Integral with said flange is a projecting flat teat 46 extending outwardly therefrom. The flange 45' may be secured to said base by soldering after it has been properly positioned thereon so that it is so disposed on said base as to be accurately located transversely on said base, at a predetermined distance from said filaments 42 and in a predetermined plane, with the teat 46 bearing a predetermined angular relationship with respect to the filaments 42. Secured to the ring 45 are a plurality of, and as shown, three, narrow and relatively thin blades 47 of the same width and length. These blades 47 are parallel to and evenly spaced from each other, extend downwardly an appreciable distance from the ring 45 and terminate upwardly from the lower extremity of the base 43. The lower ends of each blade 47 is bent in the form of a V with the apex 48 thereof being outermost away from the base 43.

The lowermost leg of the V is V shaped with the apex being at its lowest extremity. The distance between the lower face of the ring 45 and apices 48 is predetermined.

In the assembly operation the reflector 10 which may have a thin mirror-like reflecting surface layer 49 of silver, "Alzak" aluminum or the like on the inner or outer surface or both sur-

faces thereof first has fitted into the recesses 12 and 13 thereof a thin gasket or washer 50 composed of rubber, leather or the like. Then the lamp assembly is demountably mounted on the reflector by inserting through the front side of the reflector the lamp assembly with the contact blades 44 first entering the opening 11 in the insertion step, and the assembly being turned until the blades 47 are in registry with the slots 15. Then the lamp assembly is pushed further toward the reflector until the flange 45' strikes the reflector. In this position the ring 45 is located in the opening 11. The assembly is rotated until the teat 46 seats in recess 13 and the flange 45' into the recess 12. The flange 45' is pushed against the resilient gasket 50 and then a split spring ring 51 is expanded over the apices 48 of the blades 47 and pushed against the surface 14. Then the ring 51 is released and snaps into position between the surface 14 and the V shaped parts of blades 47 to lock firmly the lamp to the reflector. The lamp so mounted in the reflector has its filaments 42 located in a predetermined position and at a predetermined angular position with respect to a focal point of the reflector 10.

The resilient gasket 25 is then mounted flatwise on the platform 18 and the lens 26 is mounted on the reflector 10 with the glass bead 28 thereof resting on the gasket 25. The clamp 30 is snapped around the flanges 17 and 27 with the gasket 25 therebetween and with the lug or teat 29 located in the slot 38. Then the clamp 30 and the lens are rotated in unison with respect to the reflector 10 until the lugs 24 fit into the slots 36 and the lugs 20, 21 and 22 fit into the slots 37. Thus the clamp slots in the flanges 32 and 33 cooperate with the lugs on the reflector 10 and lens 26 to insure that the lens 26 can be mounted in one way only. When the clamp is in this position, the under face of the flange 33 is contiguous with the upper face of the flange 27 and the upper face of the flange 32 is contiguous with the under face 19 of flange 17. The bolt 39 is inserted through the openings 35 in the ears 34 and the nut is threadably drawn up on the bolt 39 to force the ears 34 towards each other and lock the lens 26 to the reflector 10. Besides locking these elements to each other, the clamp 30 maintains the air-tight seal between the lens 26 and reflector 10. The clamp 30 forces the bead 28 into the gasket 25 and against the platform 19 to seal these elements.

It is clear that the foregoing headlight may be readily repaired by the replacing therefor any element that may become damaged or burned-out and that the repair may be readily carried out even by an unskilled workman in a fool-proof and easy manner due to the particular elements and combination of parts.

Instead of employing the flange 45' with the teat 46, it is within the purview of this invention to employ another type of asymmetrical flange 55 shown in Figure 6 in place of the asymmetrical flange consisting of the flange 45 and teat 46. The flange 55 is a flat annulus having a sector thereof cut away to define a straight portion 56. When this flange 55 is used, the recess 12 and 13 will be replaced by a recess corresponding to the contour of the flange 55 so that the lamp may be mounted in the reflector 10 in one way only. While only two rings of different contours are shown, any number of other asymmetrical contours may be employed.

Since certain changes may be made in the

above constructions and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. The combination of a lamp comprising a bulb having a light source therein and a base having a transversely extending flange of asymmetrical contour accurately located with respect to said light source, a reflector having an opening therethrough at the apex end thereof, a recess in the interior of said reflector at the apex end thereof, the contour of said recess being similar to the contour of said flange, a plurality of slots in the recessed portion of said reflector, said slots communicating with said opening and being substantially equally spaced from each other, a plurality of blades secured to said base and extending longitudinally thereof, said blades terminating within the ends of said base, the radial distance between the outer surface of the upper portion of each of said blades and the longitudinal center line of said base being no greater than the radius of the opening in the apex end of said reflector and less than the radial distance from the center of said opening to the outer end of said slots, and the radial distance between the lower portion of said blades and the longitudinal center line of said base being greater than the radius of said opening and less than the distance between the center of said opening and the outer end of said slots, said blades and base extending through said

opening and said flange located in said recess, and demountable means cooperating with said blades and reflector to lock said lamp to said reflector, said demountable means located exteriorly of said reflector.

2. The combination of a lamp comprising a bulb having a light source therein and a base having a transversely extending flange of asymmetrical contour accurately located with respect to said light source, a reflector having an opening therethrough at the apex end thereof, a recess in the interior of said reflector at the apex end thereof, the contour of said recess being similar to the contour of said flange, a plurality of slots in the recessed portion of said reflector, said slots communicating with said opening, a plurality of blades extending longitudinally of said base, the radial distance between the outer surface of the upper portion of each of said blades and the longitudinal center line of said base being no greater than the radius of the opening in the apex end of said reflector and less than the radial distance from the center of said opening to the outer end of said slots and the radial distance between the lower portion of said blades and the longitudinal center line of said base being greater than the radius of said opening and less than the distance between the center of said opening and the outer end of said slots, said blades and base extending through said opening and said flange located in said recess, and means cooperating with said blades and reflector to lock said lamp to said reflector from the rear of said reflector.

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