March 4, 1941. M. P. PORTNOW 2,233,486

HEADLIGHT

Filed Dec. 13, 1939

Fig. 1

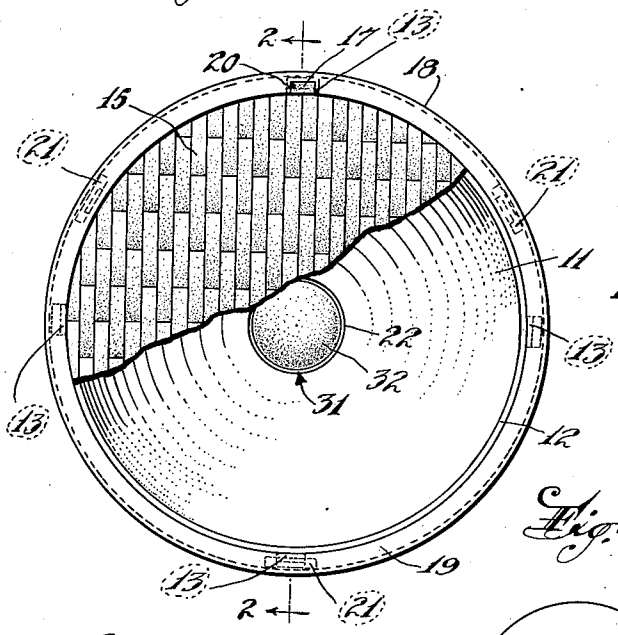


Fig. 2

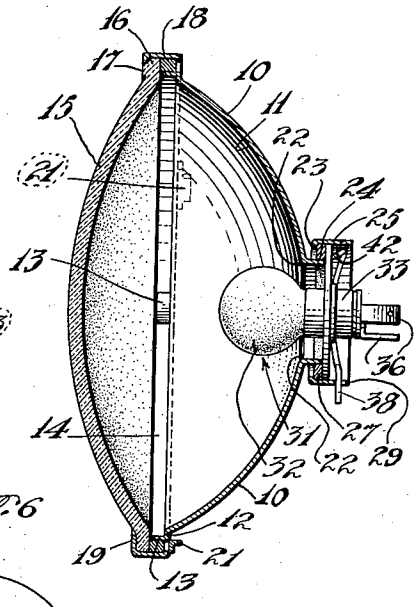


Fig. 6

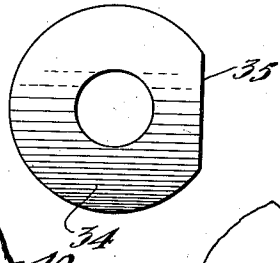


Fig. 3

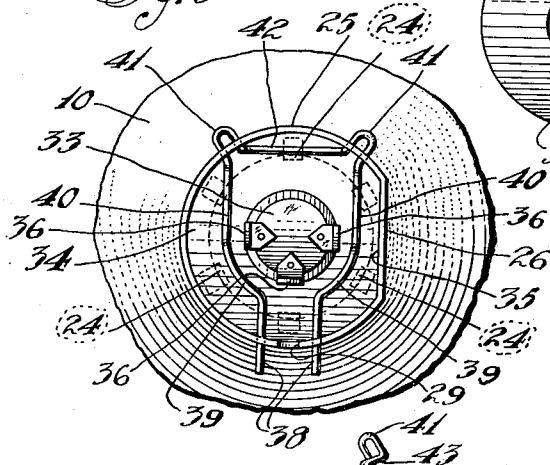


Fig. 4

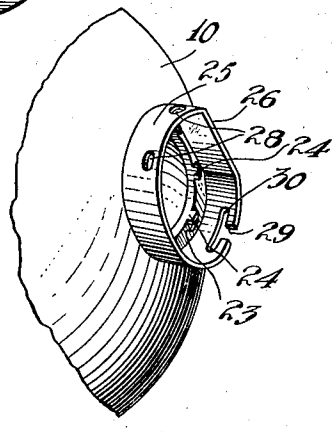
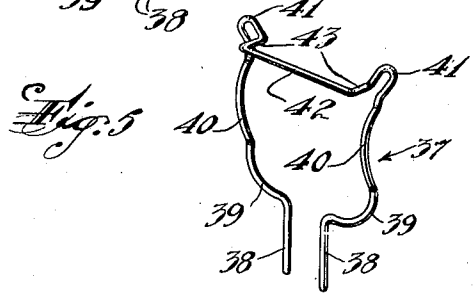


Fig. 5



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HEADLIGHT

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1 Claim. (Cl. 240—41)

This invention relates to headlights.

The main purpose of this invention is to provide a headlight which may be manufactured at a reasonable cost and which after filament burnout may be renewed by merely replacing the burned-out lamp with a similar new lamp which may be quickly and easily connected thereto even by an unskilled person. The headlight of this invention is of such construction that the assembly and substitution of parts is fool-proof.

These and other advantages of the invention will be apparent from the following description and appended drawing, wherein—

Figure 1 represents a front view of the headlight embodying the invention, with a portion of the lens broken away.

Figure 2 is a cross sectional view taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary rear view showing the reflector, lamp and locking device assembly.

Figure 4 is a fragmentary rear view showing the construction on the rear of the reflector to which may be connected a lamp.

Figure 5 is a perspective view of the locking device.

Figure 6 is a plan view of the lamp flange.

As shown in the drawing there is provided a reflector 10 of parabolic or other desired contour. The reflector 10 is preferably of predetermined size and contour and has a predetermined focal point. The interior or reflecting surface 11 of the reflector 10 is a polished or mirror surface of any desirable composition, such as silver or the like. The body of the reflector 10 may be of any desired composition and I prefer that it be metallic. Integral with the front edge of the reflector and extending outwardly therefrom is a narrow flange 12 having a plurality of and at least three struck out tabs 13 bent over, with the extreme or outer free ends of the tabs 13 being located in a predetermined plane and at a predetermined distance from the focal point of the reflector.

An annular gasket or packing ring 14 is mounted on the flange 12. The gasket or ring 14 may be composed of any desirable material, such as asbestos, rubber, soft leather and the like, I prefer that it be a weatherproof material adapted to be compressed. The thickness of the gasket 14 is preferably a little greater than the distance between the outer face of the flange 12 and the outer limit of stops 13.

A lens 15 terminating in a ring or flange 16 is mounted on the reflector 10, with the ring 16 bearing against the compressible gasket 14. The lens is of predetermined size and contour and has a predetermined focal point. A boss 17 is located at a predetermined point on the flange 16 so that the lens may be mounted in one position only.

Integral with the flange 12 and extending upwardly therefrom is a narrow ring 18 whose diameter is approximately the same as the external diameter of the gasket 14 and flange 16. Integral with the ring 18 and extending inwardly therefrom is a narrow flange 19 which presses the lens 15 towards the flange 12, compresses the gasket 14 and presses against the outer extremities of the tabs 13 so that the lens is located at a predetermined distance from the focal point of the reflector 10 and the locating flange 16 is located in a predetermined plane. The flange 19 has a small cut out 20 therein to accommodate the boss 17 so that the lens cannot be mounted upside down, but may be mounted in one position only. Mounted on the rear of the flange 12 are a plurality of lugs 21 for properly positioning the reflector in an automobile or the like. These lugs 21 are asymmetrically spaced from each other and bear a predetermined angular relationship to said focal point of said reflector.

The rear end of said reflector has an opening therein through which may be inserted the bulb of a lamp. Integral with the reflector at the opening at the rear thereof is a curved portion 22 terminating in an outwardly extending flange or shelf 23. The flange 23 is narrow and has a plurality of and at least three struck out tabs or stops 24. The stops 24 are spaced from each other and the extreme ends or outer faces thereof are located in a predetermined plane and at a predetermined distance from the focal point of reflector 10. Integral with the flange 23 is a ring or band 25 of considerable depth or width. I prefer that the ring 25 be circular over about three-quarters of its periphery, but the remainder thereof be straight or of some other contour at 26 so that a lamp may be mounted in one position only.

A compressible weatherproof gasket 27 similar in composition and characteristics to gasket 14 is located on the shelf 23 and between the stops 24 and ring 25. The thickness of the gasket 27 is preferably greater than the distance between the face of the shelf 23 and the outer limit of stops 24.

The ring 25 has a pair of spaced short elliptical openings 28 through the circular portion thereof, and an inverted T slot substantially di-

ametrically opposite the mid-space between the openings **28**. The T slot consists of a short stem **29** extending through the outer free edge of ring **25**, with the cross part **30** thereof extending an appreciable distance from either side of stem **29** and communicating therewith.

A three post, two filament incandescent electric lamp **31** may be mounted into the reflector **10** from the rear thereof so that the headlight is weatherproof as well as dust proof and the lamp may be replaced after it has burned out to again provide a weatherproof and dust proof headlight. The lamp **31** may include a filament enclosing bulb **32** and base **33** on which is secured a ring **34** located at a predetermined distance from the filaments and in a predetermined plane with respect to the filament. The ring **34** is circular except for a portion thereof which is straight as at **35** so that the external perimeter of the ring is only a trifle less in size but of exactly the same contour as is the interior surface of the ring **25**. The straight portion **35** of said ring **34** is disposed at a predetermined angle with respect to the lamp filaments. Secured to the insulator portion of base **33** are three prongs **36** electrically connected to the three filament supporting posts, not shown.

The lamp **31** having the flange **34** secured thereto at the position described is grasped at the base, care being taken that the hand does not touch the bulb thereof to assure a clean and clear bulb. The bulb is inserted through the opening in the rear of reflector **10** and the lamp is rotated until the straight edge **35** of flange **34** is coincident with the straight portion **26** of ring **25** so that the lamp can be mounted in one way only. Then the lamp is pushed forwardly towards the lens and the flange **34** is pressed against gasket **27** to compress the same and pressure is continued until the flange **34** presses against the outer extremities of the stops **24**.

Then with the other hand a detachable locking device **37** is mounted on the ring or band **25** to lock the lamp **31** in position and maintain the flange **34** against the stops **24**. In this construction there is provided a headlight which is weatherproof, the lamp thereof, when burned out, may be replaced in an easy manner to provide a "new" unit without the necessity of replacing all of the parts because the characteristics of the "new" unit will be exactly the same as those of the original unit.

The locking device **37** may be made from a single elongated piece of spring steel or the like. As shown it may be of the contour shown in Figure 5, with a pair of straight ends **38** parallel to and spaced from each other, outwardly curved portions **39** extending from one extreme of each of ends **38** defining a split stem Y, side arms **40** extending from the curved portions **39**. The side arms **40** are curved or bowed and are parallel to each other. A portion **41**, in the same horizontal plane as the ends **38** extends from each bowed side arm **40**.

The portions **41** extend outwardly, curve around and then extend inwardly to define a U angularly disposed with respect to the length of side arms **40**. A cross bar **42** is located in the same plane as the outer parts of the bowed arms **40** and is connected to the inner ends of the U portions **41** by short arms **43**.

In operation the lamp **31** is inserted into the reflector with flange **34** on the gasket **27**. It is pushed forward to compress the gasket and until the flange **34** presses against stops **24**. Then the U portions **41** are located in the openings **28** and the ends **38** are pulled downwardly to spring the bowed arms **40** and the cross arm **42** against the outer face of the flange. The ends **38** are brought together and pushed through the slot **29** and into slot **30** when they are released and spring outwardly to become engaged in the ends of slot **30**. The locking device **37** is anchored in openings **28** and **30** and its cross bar **42** and side arms **40** press against flange **34** to rigidly maintain the lamp **31** in position and against stops **24** and to compress the gasket **27**.

When lamp **31** burns out, the locking device is removed by compressing ends **38** towards each other and sliding them upwardly out of slot **29** and then pulling is applied at ends **38** to pull the U portions **41** out of the elliptical openings **28**. A lamp exactly the same as the removed lamp is replaced and locked to the reflector with locking device **37** in the manner heretofore described.

Although the invention has been described in detail, it is not to be limited to the exact construction shown, because such changes may be resorted thereto which are within the scope of the invention as claimed.

What is claimed:

A headlight comprising a lamp including a bulb, a filament located therein, a base and an asymmetrical flange secured to said base in a predetermined plane and at a predetermined distance from said filament, a reflector, a flange extending outwardly from said reflector, a plurality of stops secured to said flange and extending outwardly therefrom, a compressible weatherproofing band located on said flange, the thickness of said band normally being greater than the distance said stops extend from said flange, a lens, means connecting said lens to said reflector, said means compressing said band and maintaining said lens against said stops, said reflector having an opening in the rear thereof adapted to accommodate said bulb, a shelf secured to said reflector adjacent said opening, a collar secured to said shelf, the periphery of said collar being the same as the periphery of said asymmetrical flange, a plurality of stops secured to said shelf, a compressible weatherproof band mounted on said shelf, said lamp mounted in said reflector, with the bulb thereof located in said reflector and the asymmetrical flange adjacent said second band, removable means cooperating with said collar and pressing against said asymmetrical flange to lock said lamp in position, to compress said second band and maintain said asymmetrical flange against said second stops.

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