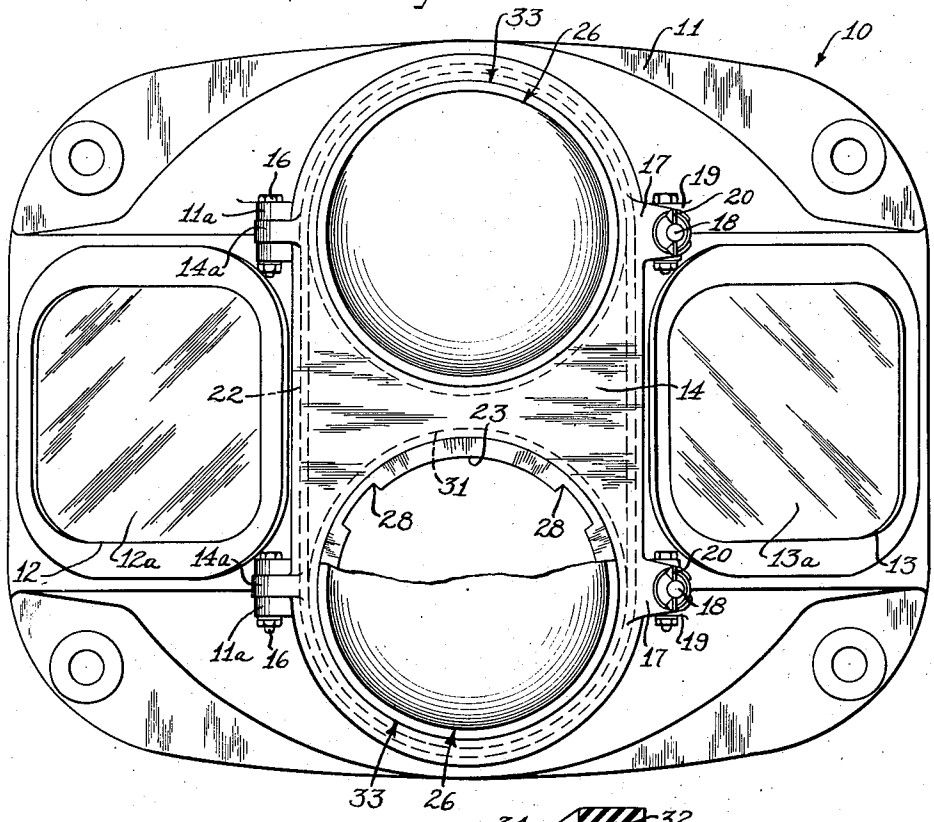
Aug. 3, 1954 T. E. McDOWELL 2,685,641

SEALED BEAM LAMP RETAINING RING FOR HEADLIGHTS

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Fig. 1



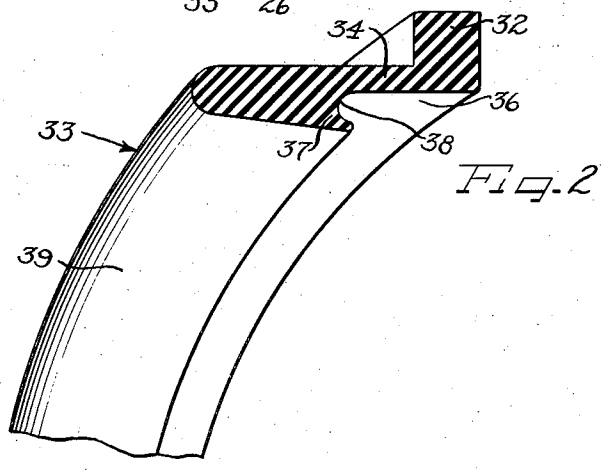


Fig. 2

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Fig. 3

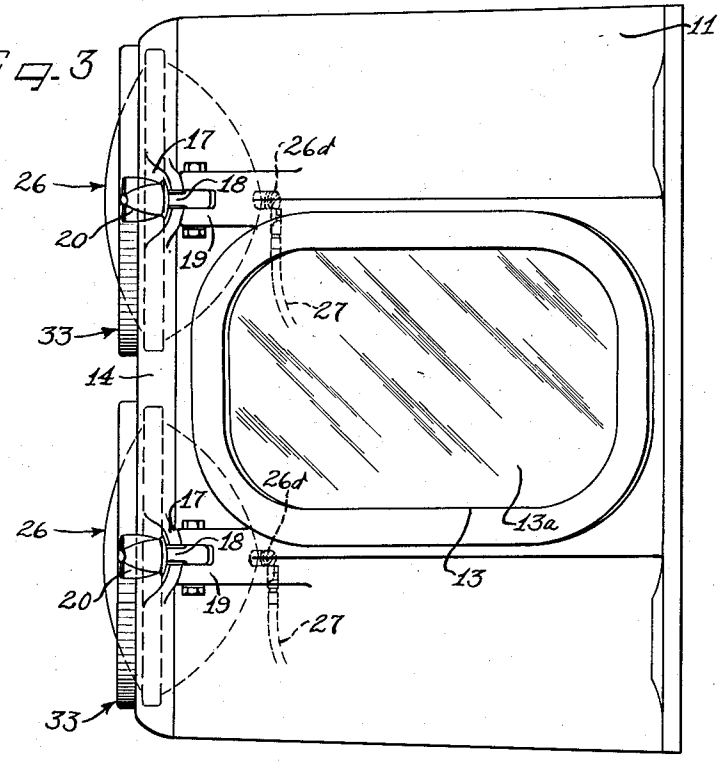


Fig. 4

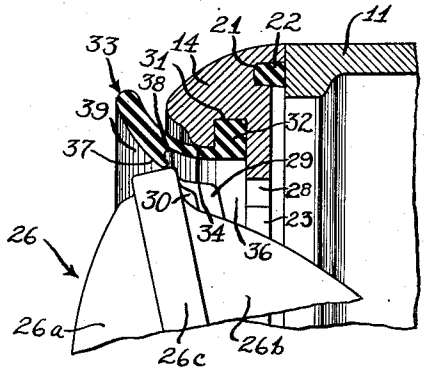
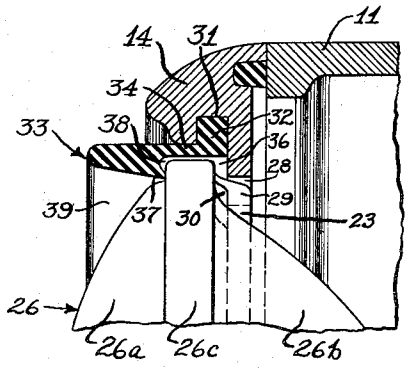


Fig. 5



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UNITED STATES PATENT OFFICE

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SEALED BEAM LAMP RETAINING RING FOR HEADLIGHTS

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2 Claims. (Cl. 240—41)

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This invention relates generally to locomotive headlight assemblies and more particularly to a molded rubber retaining ring and lamp door structure affording a mounting for a sealed beam lamp whereby servicing operations may be effected without the use of tools and without requiring the use of removable parts in the sealed beam lamp retaining structure.

According to the general features of the present invention, a locomotive headlight assembly is provided which includes an open ended casing having a lamp door hinged on the open end thereof, the lamp door having at least one opening therein to receive a sealed beam lamp of the type having a flange overlying the edges of the opening. An undercut annular recess is provided adjacent the opening in the lamp door and receives an annular ring portion of a flexible molded rubber retaining ring, the retainer ring being carried by the door normally although being removable therefrom. A relative thin walled portion of the retainer ring adjoins the portion thereof carried by the door and terminates in a radially inwardly extending lip portion adapted to overlie the flange of the sealed beam lamp. The flange of the lamp is therefore firmly retained between the lamp door and the lip of the retainer ring. An axially extending finger manipulable flanged portion adjoins the lip portion of the retainer ring and may be manipulated to hinge the lip about the thin walled portion whenever it is necessary or desirable to insert or remove the sealed beam lamp from the opening in the lamp door. The ring further includes a relieved recessed portion which lies between the lip portion and the thin walled portion. By the provision of this recess, the lip may be subjected to flexure at the locale of said recess in order to accommodate dimensional tolerances in lamp flange thicknesses.

It is an object of the present invention, therefore, to provide a novel and improved sealed beam lamp retaining arrangement for a locomotive headlight assembly which permits the ready assembly of a sealed beam lamp unit in the headlight assembly without necessitating the use of special tools or without requiring the provision of removable elements which may be lost during a servicing operation.

Another object of the present invention is to provide a lamp retaining ring for a sealed beam lamp type locomotive headlight assembly whereby a sealed beam lamp may be inserted in a lamp door and placed in firm assembly therewith merely by finger manipulation of a portion of the retaining ring.

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Yet another object of the present invention is to provide a sealed beam lamp type locomotive assembly which may be fabricated from a reduced number of simplified elements.

Many other advantages, features and additional objects of the present invention will become manifest to those versed in the art upon making reference to the following detailed description and the accompanying drawings in which a preferred embodiment of a headlight assembly incorporating the principles of the present invention is shown.

On the drawings:

Figure 1 is a front elevational view with parts broken away of a locomotive headlight assembly constructed in accordance with the principles of the present invention;

Figure 2 is an enlarged fragmentary perspective view with parts shown in cross-section of a lamp retaining ring provided in accordance with the principles of the present invention;

Figure 3 is a side elevational view of the locomotive headlight assembly shown in Figure 1;

Figure 4 is a fragmentary cross sectional view with parts shown in elevation illustrating the insertion or withdrawal of a sealed beam lamp from or into the lamp door of a headlight assembly equipped with the structure provided in accordance with the principles of the present invention; and

Figure 5 is a view similar to Figure 4 showing the sealed beam lamp in fully assembled relationship with the lamp door of the headlight assembly constructed in accordance with the principles of the present invention.

As shown on the drawings:

Referring first to Figures 1 and 3, a locomotive headlight assembly is indicated generally by the reference numeral 10 and includes an open ended casing 11 having windows 12 and 13 therein which carry translucent members 12a and 13a which, in the case of a locomotive headlight assembly, could take the form of a numeral indicia for identifying the locomotive upon which the headlight assembly 10 is carried.

A door 14 is provided and is hinged at the open end of the casing 11, the door 14 being provided with suitable aperture bosses 14a and the casing being provided with suitable aperture bosses 11a through which hinge pins 16 may be passed to pivotally mount the door 14 on the casing 11.

A suitable latching structure is provided on the other side of the door 14 so that the door 14 may be locked in closed relationship with the casing 11, the latching structure including a pair of slotted bosses 17 which receive latch studs 18

pivotally carried by appropriate bosses 19 on the casing 11. A wing nut 20 is threaded on each of the latch studs 18 and may be drawn up to tighten the door in assembly with the casing 11.

Referring now to Figures 4 and 5, the details of the door construction 14 are shown. A peripheral recess 21 is provided to receive a gasket 22 adapted to sealingly shoulder against the casing 11 whenever the door 14 is in closed position. In this manner, leakage of moisture or foreign particles of dirt into the casing is precluded.

The door 14 is provided with one or more openings 23 to receive a sealed beam lamp therein. Although the sealed beam lamp, per se, does not form a part of this invention, such lamps being commercially available, the features thereof will be briefly described because the principles of the present invention favorably exploit the various structural characteristics thereof. Since the structural details of the sealed beam lamps and the retaining means provided in the door 14 for such lamps are identical, similar reference numerals will be employed wherever possible.

The sealed beam lamp is indicated generally by the reference numeral 26 and includes a clear lens portion 26*a* and a bowl-shaped back portion 26*b*, which is appropriately silvered to comprise an integral reflector, there being an annular flange 26*c* between the bowl-shaped back portion 26*b* and the clear lens portion 26*a*. As shown in Figure 3, suitable electrical contacts 26*d* are provided to afford electrical connection to filament means within the bowl of the sealed beam lamp. Conductors 27 may be connected to the contacts 26*d*, and are also connected in a well known manner to a source of electrical energy.

As will be noted particularly upon Figures 1 and 4, the edge portions of the opening 23 are slotted as at 28 to receive a polarizing boss 29 formed at spaced apart points on the sealed beam lamp 26. The provision of such polarizing means is desirable in order to dispose the filament of the sealed beam lamp 26 in predetermined relationship to the headlight assembly 10.

Most sealed beam lamps 26 are also provided with a pair of seating bosses 30 one of which lies adjacent each side of the various polarizing bosses 29. The seating bosses, like the flange portion 26*c*, extend radially outwardly so as to overlie the edge portions of the opening 23 thereby engagingly abutting the door 14.

Directly adjacent the opening 23 in the door 14 is an annular recess 31 which receives an annular rib 32 formed in a configuration complementary to the recess 31 and comprising an integral portion of a lamp retainer ring 33.

The lamp retainer ring 33 is preferably made of a molded rubber-like material suitably compounded so as to have favorable weather resistant characteristics and preferably of such composition as to remain elastically flexible under all possible weather conditions under normal usage.

A relatively thin walled hinge portion 34 is defined by the ring 33, the hinge portion 34 together with the rib 32 defining the walls of a bore 36 which is adapted to receive the flange 26*c* of the sealed beam lamp 26.

The hinge portion 34 extends axially and terminates in a radially inwardly extending lip portion 37 which is adapted to overlie the outward face of the flange 26*c* of the sealed beam lamp 26, the lip 37 together with the abutment means defined by the edge portions of the opening 23 operating to securely clamp the flange 26*c* and retain the lamp 26 in firm assembly with the door 14.

Attention is invited to the fact that a relieved recess area 38 is provided between the lip portion 37 and the hinge portion 34. By the provision of such recess 38, the lip 37 may be subjected to flexure in the locale of the recess 38 to accommodate dimensional tolerances in lamp flange thicknesses.

As will be noted on the drawings, an axially extending finger manipulable flange portion 39 is provided on the ring 33, thus the flexible ring 33 may be distorted or, in other words, the lip 37 may be hingedly displaced about the hinge portion 34 so as to be moved out of alignment with the flange 26*c* of the sealed beam lamp 26.

In Figure 4, the retainer ring 33 is shown in its flexed position and the sealed beam lamp 26 is shown being moved into or away from the assembled position in the opening 23 of the door 14.

In Figure 5, the sealed beam lamp 26 is shown in regular assembled position, the retaining ring 33 also being shown in its normal undistorted retaining position.

It will be apparent, therefore, that in operation, the sealed beam lamp 26 will shoulder against the door 14 and the retainer ring 33 will operate to thrust axially inwardly against the flange 26*c* of the sealed beam lamp 26 to retain same in firm assembly with the door 14.

The distortable lip 37 promotes a snug sealing engagement with the flange 26*c* which not only weatherproofs the headlight assembly but operates to axially load the sealed beam lamp 26 in the direction of the door 14. The radius area 38 permits accommodation of manufacturing tolerances in the sealed beam lamp 26 and the hinge area 34 permits bending or hinging of the ring when the axially extending flange 39 is manipulated through a simple finger operation as, for example, in replacing a sealed beam lamp 26.

Although various minor structural modifications might be suggested by those versed in the art, it should be understood that I do not wish to be limited to the precise details herein described for the sake of clarity only but wish to embody within the scope of this patent all such modifications as reasonably and properly come within the scope of my contribution to the art as defined in the appended claims.

I claim as my invention:

1. In a headlight assembly, a rigid support member having an opening therein to receive a sealed beam lamp of the type having a support flange adapted to overlie the edges of said opening, a flexible retainer ring having a peripheral portion supported inside of said opening by said rigid support member, said ring having a flexible hinge portion terminating in a lip portion overlying said support flange of said lamp, said retainer ring together with said support member normally operative to clamp said lamp therebetween in firm assembly with one another, the lip portion of said ring being hingedly displaceable about said flexible hinge portion to permit removal of said lamp from said support member, said ring further including a relieved recess area between said lip portion and said hinge portion, whereby limited flexure of said lip in the locale of said recess will accommodate varying lamp flange thicknesses, said ring further including an axially extending flange adjacent said lip portion and projecting outwardly of said opening and forwardly of said support member and forming a

lever means with which to hingedly displace said lip portion.

2. In a headlight assembly, a rigid support member having an opening therein, an undercut annular recess adjacent said opening in said support member, said opening adapted to receive a sealed beam lamp of the type having a flange overlying the edges of the opening, and a flexible retainer ring including an annular rib portion formed in a configuration complementary to said annular recess for supporting said flexible retainer ring inside of said opening on said rigid support member, a relatively thin walled portion adjacent said rib portion to encircle the flange of said lamp and to operate as a flexible hinge, said thin walled portion terminating in a radially inwardly extending lip portion to overlie said flange of said lamp, whereby said lamp will be normally retained between said support member and said lip portion and an axially extending flange portion adjacent said lip projecting outwardly of said opening and forwardly of said support member to be manipulated in hinging said lip about said thin walled portion for inserting and removing said lamp from said opening, said ring further including a recesesd portion between said lip portion and said thin walled portion, said lip portion being subject to flexure at said recess to accommodate dimensional tolerances in lamp flange thickness.

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