Aug. 20, 1935. C. A. MICHEL 2,011,868

HEAD LAMP

Filed April 2, 1934 2 Sheets-Sheet 1

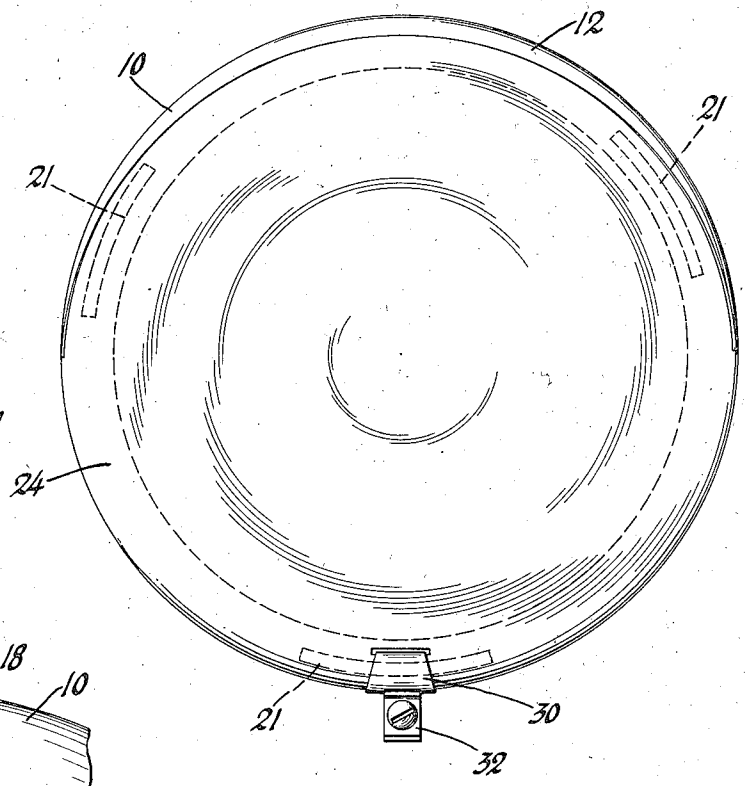

Fig. 1

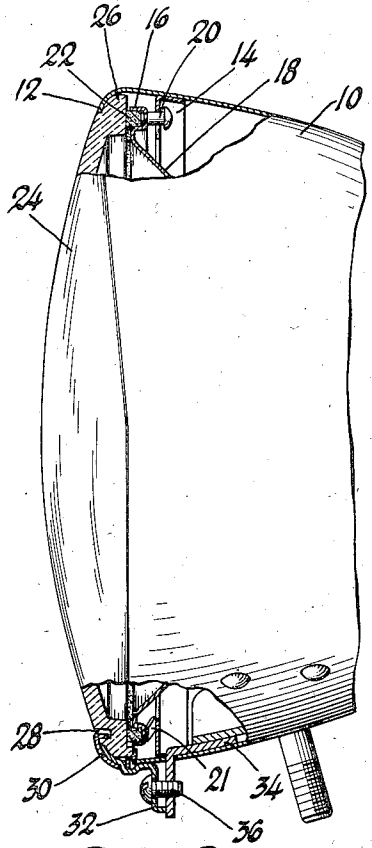

Fig. 2

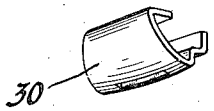

Fig. 3

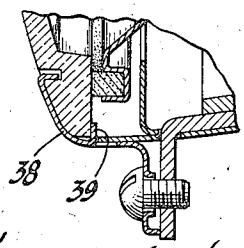

Fig. 4

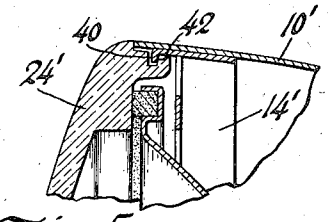

Fig. 5

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HEAD LAMP

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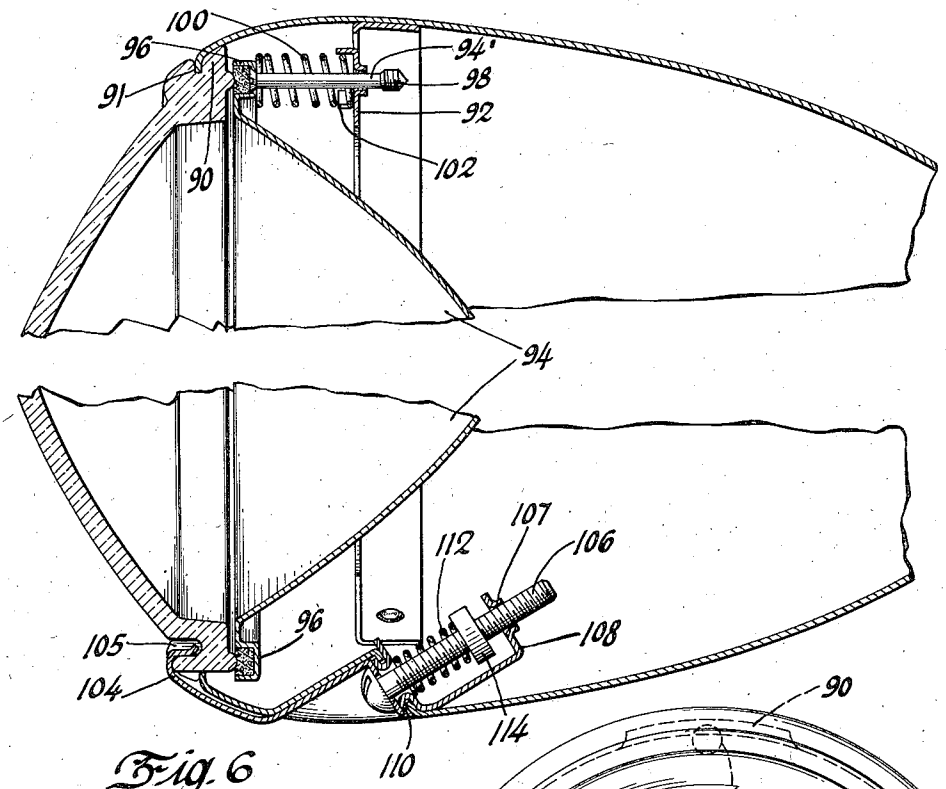

Fig. 6

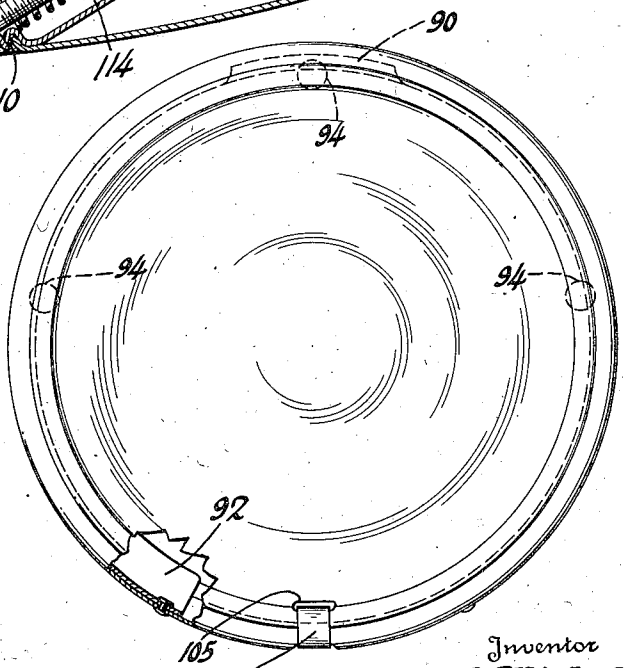

Fig. 7

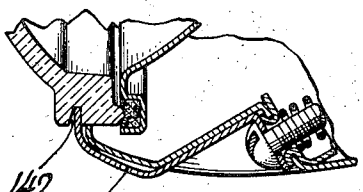

Fig. 8

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Patented Aug. 20, 1935 2,011,868

UNITED STATES PATENT OFFICE

2,011,868

HEAD LAMP

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Application April 2, 1934, Serial No. 718,589

12 Claims. (Cl. 240—41.5)

This invention has to do with a headlamp of the type in which the usual door or lens ring is omitted. The door customarily takes the form of a ring or expanding band within which the lens is secured, and which is in turn secured to the headlamp housing. By eliminating the door the appearance of the lamp is improved and the design is somewhat simplified.

The object of this invention is to provide a doorless headlamp of simple construction so that the lens may be readily removed whenever desired but nevertheless one so well constructed that the parts are at all times held tightly together and well sealed, preventing the entrance of dust or water.

The invention is characterized by the fact that the lens is secured directly to the lamp housing, being provided at one edge with a projection or notch interlocking with the housing and at the opposite edge with suitable fastening means which serves to draw the lens into engagement with the open end of the housing. To maintain the parts in engagement, spring pressure is so applied as to urge the lens outwardly and this spring pressure is likewise preferably utilized to yieldingly urge a sealing gasket against the lens.

In the drawings:

Figure 1 is a front elevation of a headlamp embodying the invention.

Figure 2 is a side view, partly in section.

Figure 3 is a perspective view of the lens engaging clip shown in Figure 2.

Figure 4 is a vertical section showing a modified form of clip.

Figure 5 is a fragmentary section corresponding to the upper part of Figure 2 but showing a modification.

Figure 6 is a vertical section with parts broken away showing a further modification.

Figure 7 is a front view of the lamp of Figure 6.

Figure 8 is a sectional view showing a modification of the securing means at the bottom of the lens.

In the form shown in Figures 1 to 4 the headlamp housing 10 is provided on its upper portion with inturned flange 12 preferably crescent shaped when viewed from the front. Within the housing is fixed an angled ring 14 adapted to support the flange 16 of the usual reflector 18. The reflector is preferably located with respect to the housing by means of pin 20 secured to the edge of the reflector and passing through a slot in the vertical flange of the ring 14. Bowed leaf springs such as shown at 21 are provided between the flange of the reflector and the ring 14, the springs having their free ends in engagement with the flange and their intermediate portions engaging the back of the reflector flange. Three springs are provided, equally spaced about the circumference of the flange. The springs urge the reflector toward the opening in the housing. The edge of the reflector 18 is preferably channelled as shown to receive the sealing gasket 22. The lens 24 is mounted in the headlamp by inserting its upper edge portion, which may take the form of a flange 26, behind the flange 12, this being accomplished by pressing the reflector rearwardly against the resistance of springs 21. The bottom of the lens is provided with a socket 28 adapted to receive a clip 30, shown in detail in Figure 3. The clip is clamped to the housing by means of stamping 32, clamped to bracket 34 secured to the housing, by screw bolt 36. If desired the clip 30 and stamping 32 may be made in one piece as shown at 38 in Figure 4. Lug 39 holds the clip to the lens.

With this construction the usual lens ring is omitted, its function being performed by the flange on the housing and the clip 30—32 or 38. At the same time the appearance of the lamp is improved, and all of this is accomplished with a considerable reduction in cost.

In Figure 5 there is shown a modification in which the top of the lens 24' is provided with a groove or socket 40 engaged by lug 42 preferably pressed out of the metal of the ring 14'. With this construction the flange 12 is unnecessary so that the appearance of the lamp is further enhanced since the usual circular lens opening is retained.

In the form shown in Figures 6 and 7, the lens is provided with an arcuate projection 90, which, in combination with the adjacent portion of the lens, forms a slot 91 in which is received the inturned flange of the lamp housing. In this modification there is fixedly secured within the headlamp a split ring 92, L-shaped in cross section. The reflector 94 is provided with the usual gasket receiving groove 96. The reflector is secured to the split ring 92 by fastening means in the form of pins 94' projecting through apertures in the base of the groove 96 and through alined apertures in the split ring 92. To the ends of the pins are secured enlargements 98 to prevent their withdrawal. Springs 100 encircle the pins 94' and yieldingly urge the reflector toward the open end of the housing. The springs may be confined between metal tabs 102 bent up from the material of the ring 92.

As shown in Figure 7 I prefer to provide three of the pin assemblies, one at the top and one at each side of the lamp, while the lamp is held at the bottom by means of a clip 104 engaging socket 105 in the lens as in the preceding figures. The securing means for clip 104 consists of screw bolt 106 passing through an aperture in the clip and threaded at 107 in stamping 108 secured to the lamp housing as by riveting over an outturned annular flange 110 formed out of the metal of the stamping. Coil spring 112 engages collar 114 on the bolt 106 and yieldingly resists outward movement of the bolt. It will be apparent that by rotating bolt 106 in a direction to compress spring 112, clip 104 is released so that it may be disengaged from socket 105, permitting removal of the lens.

In Figure 8 there is illustrated a slight modification of the lens fastening means. Here the clip 140 engages in a socket 142 in the edge of the lens instead of in its front face. This may be desirable from an appearance standpoint.

Various modifications will occur to those skilled in the art in the design and arrangement of lens holding clamp, and in the provision for interlock between lens and housing. It is clear of course that the lens holding devices need not be at the top and bottom of the lamp but may be at opposite sides. More than one lens retaining clamp may be used if desired.

Obviously in place of the rings shown at 14 in Figure 2 and at 92 in Figure 6, a plurality of circumferentially spaced clips may be employed, these clips being suitably welded or soldered to the body. This really amounts to no more than making the rings discontinuous.

I claim:

1. A headlamp comprising a housing provided at one side of the diameter with an overhanging lip, a lens having an edge portion adapted to engage said lip and means engaging an indenture in the lens at the other side thereof to clamp the lens to the housing.

2. The combination as defined in claim 1, means for resiliently pressing the lens against the lip.

3. The combination of a housing provided at one side thereof with an overhanging lip, a reflector within the housing, means for resiliently pressing the reflector toward the open end of the housing and a lens having a portion adapted to engage the lip and to be yieldingly engaged by the reflector and means engaging an indenture in the other side of the housing for clamping the lens thereto.

4. In a headlamp the combination of a housing provided at its open end with a crescent shaped overhanging lip, a lens having a marginal portion adapted to engage said lip, means at the other side of the housing engaging an indenture in the lens for clamping the lens thereto, and resilient means within the housing for yieldingly urging the lens outwardly thereof.

5. In a headlamp, the combination of a housing provided at its open end with an overhanging lip, a lens having a marginal portion adapted to engage said lip, an abutment secured within the housing, yielding means engaging the abutment and urging the lens out of the housing, and means at the side of the housing opposite the lip engaging an indenture in the lens and clamping it thereto.

6. In a headlamp, the combination of a housing provided at its open end with an overhanging lip, a lens having a marginal portion adapted to engage said lip, an abutment secured within the housing, a reflector in the housing having a flange overlying the abutment, means yieldingly urging the reflector away from the abutment, said reflector bearing against the lens and tending to urge it out of the housing, and means at the side of the housing opposite the lip engaging an indenture in the lens and clamping it thereto.

7. A headlamp comprising a housing having a lens receiving opening, and a lens fitting in the aperture in the housing, and provided at one side with means for interlocking with the housing to prevent axial separation thereof, and means at the other side of the lamp engaging an indenture in the lens for drawing the lens toward the housing and into clamping engagement therewith.

8. A headlamp comprising a housing having a lens receiving opening, a ring within the housing, a lens provided at one side thereof with means for interlocking with the edge of the opening to prevent axial separation of the lens and housing, means at the other side of the lens engaging an indenture therein for drawing the lens toward the housing and into clamping engagement therewith and means associated with said ring for resiliently urging the lens into engagement with the housing.

9. A headlamp comprising a housing provided at one side of the diameter with a crescent-shaped overhanging lip, a lens having an edge portion adapted to engage said lip, a groove in the opposite edge of the lens and a clamping member having a tongue to fit within the groove secured to the housing to clamp the lens in place.

10. A headlamp comprising a housing provided at one side with an overhanging lip, a lens having a grooved portion into which the lip is adapted to fit, a second short groove diametrically opposite the first and penetrating at right angles to the first groove in the lens, and a clamp member secured to the housing having a tongue adapted to engage the second groove to hold the lens in place.

11. A rimless headlamp comprising a housing having in one end a circular opening, a crescent lip overhanging one side of the opening, a lens adapted to engage the lip to support one side of the former against the housing, a short groove in the lens opposite the lip, and clamping means engageable in the groove, said means including a multi-angled strip the opposite end of which engages a screw threaded into an extension of the casing.

12. A headlamp comprising a housing having a lens receiving opening, an overhanging lip on one side of the opening, a lens adapted to engage the lip to support one side of the former against the housing, a multi-angular clamp engaging an indenture in the opposite side of the lens and a spring biased bolt concealed within a pressed-in portion of the housing securing the opposite end of the clamp to complete the assembly.

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