Feb. 8, 1938. B. PUTTERMAN 2,107,648

AUTOMOBILE LAMP

Filed Dec. 9, 1935

Fig. 4



Fig. 3.

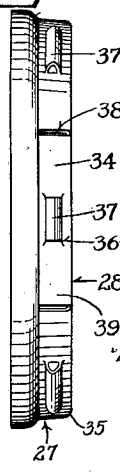
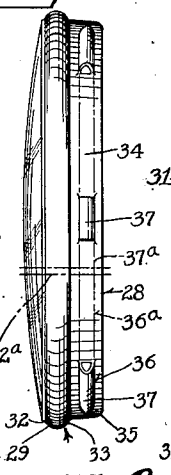


Fig. 2



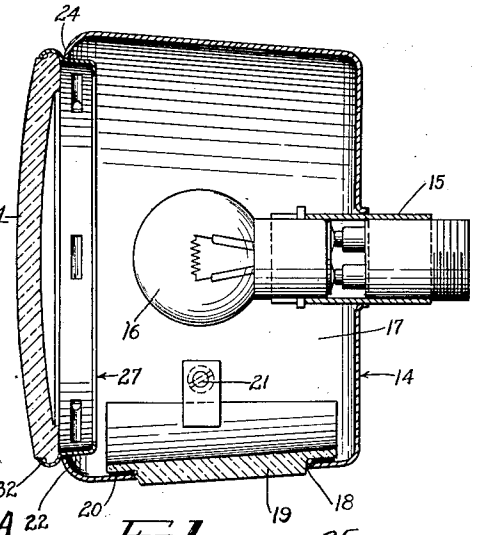


Fig. 9A.

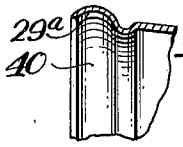


Fig. 2A.

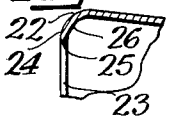


Fig. 1

Fig. 6A.

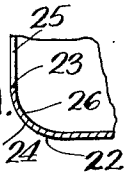


Fig. 9

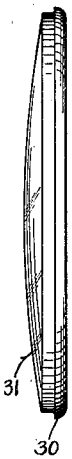


Fig. 7

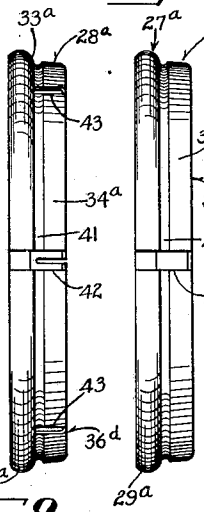


Fig. 5

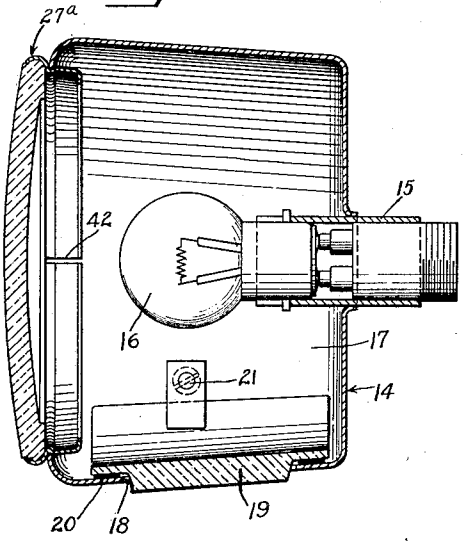


Fig. 8

Fig. 6

Fig. 10

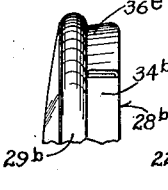
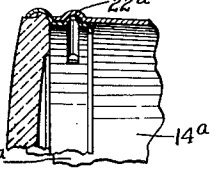


Fig. 11



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AUTOMOBILE LAMP

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Application December 9, 1935, Serial No. 53,501

3 Claims. (Cl. 240—8.3)

This invention relates to new and useful improvements in lamps, especially tail and stop lamps for automobiles.

In many of the lamps of this type heretofore proposed it is necessary to use special tools such as wrenches, pliers, screw drivers, or the like, in order to disassemble and assemble the lamp to replace a lamp bulb.

It is an object of the present invention to provide a lamp in which use of tools may in large part be dispensed with.

To this end the present invention provides a lens which may be merely snapped into or out of place without the use of tools of any kind.

In many of the previously proposed lamps several parts (e. g. bezel ring, screws, nuts, washers, lens) had to be removed before a lamp bulb could be replaced, with the attendant and considerable likelihood that certain parts would be lost, especially at night when bulb changes are usually effected.

It is a further object of the present invention to provide a lamp wherein there is little danger of losing important parts when the bulb is changed.

A feature resulting from the attainment of this object is the provision of a lamp wherein only a single unit need be removed from the casing when a change or repair is made, and since this unit is a large one, there is no danger of losing it.

It is a highly important object of the present invention to provide a lamp with a thoroughly enclosed light chamber so that dust, dirt, moisture, and rain cannot adversely enter the same and impair the efficiency of the lamp, as can occur in those lamps having a split casing or some similar structure.

In meeting this object the present invention provides a lamp wherein the casing is not split and the lamp is thoroughly dust and moisture proof at all times while in use, even though gaskets and other like conventional sealing means are not used. A supplementary feature is the provision of resilient means adapted to draw a flange on the lens snugly against the casing so that undesirable matter cannot enter the casing.

Another advantageous feature of the present invention is the provision of a lamp with a lens and holding ring, in which the lens alone may be replaced if broken without also replacing the holding ring.

Other objects, features, and advantages will be apparent or described hereinafter.

In the drawing:

Figure 1 is a sectional view through the center of the lamp embodying the present invention, the remaining unshown half being a substantial duplicate thereof.

Fig. 2 is a detail of the lens unit.

Fig. 2A is a fragmentary section of the ring engaging portion of the lamp casing shown in Fig. 1.

Fig. 3 is a detail of a modified form of lens ring.

Fig. 4 is a detail of the lens.

Fig. 5 is a view similar to Fig. 1 of a modified form of the present invention.

Fig. 6 is a view similar to Fig. 2 but of the modified form of lens unit shown in Fig. 5.

Fig. 6A is a fragmentary section of the ring engaging portion of the lamp casing shown in Fig. 5.

Fig. 7 is a detail of the split ring.

Fig. 8 is a detail of a modified form of split ring.

Fig. 9 is a detail of the lens.

Fig. 9A is a fragmentary section of the lens ring.

Fig. 10 is a fragmentary detail of a modified form of lens unit.

Fig. 11 is a modified form of casing for use with the preferred form of lens unit.

Referring now in detail to the drawing which shows the present preferred embodiments of the invention, and to Figs. 1–4 first, the lamp comprises a casing **14** of cup like or any other desired shape, which may be secured to a license plate bracket or the like by any of the now well known and conventional securing means. Also, in the conventional manner the casing supports a socket **15** for a lamp bulb **16** within a light chamber **17**. A license plate illuminating opening **18** may be provided on any side of the casing and enclosed with a glass **19** and gasket **20** held in place by screws **21**.

According to the present invention, the casing **14** is at its front provided with an inwardly projecting flange **22** defining a light passage opening **23**. The flange **22** is provided with front, inner, and back walls **24**, **25**, and **26** respectively adapted to receive and hold a lens unit **27**.

The lens unit **27** in its present preferred form comprises a metal ring **28** having a main channelled flange **29** adapted to receive a peripheral flange **30** of a red or other suitably colored lens **31** (Fig. 4). The channelled flange **29** is provided with a curled in top edge **32**, by spinning or other deforming, to hold the lens in the metal ring, as may be seen best in Figs. 1–4, inclusive. The flange **29** is provided with a rear

wall 33 adapted to fit snugly against the front wall 24 of the flange 22 on the casing 14.

A thimble 34, projecting rearwardly of the flange 29 is provided on the lens unit 27 and preferably integral with the flange 29 of a diameter snugly fitting the opening 23 and adapted to project therethrough. A bevel 35 may be provided to facilitate inserting the lens unit into the opening of the casing.

Projections 37 are provided on the thimble 34 to form a snap connection 36 capable of holding the lens unit 27 to the casing 14. Preferably these projections are struck up from the thimble so that they will be resilient and pressed inwardly of the thimble by the inner wall 25, and are spaced from the rear wall 33 of the channelled flange 29 just enough to snap in back of the wall 26 of the casing flange 22 and thereby draw the rear wall of the lens unit securely against the front wall 24 of the casing flange, to make a dust and moisture proof connection at this point and to securely hold the lens unit 27 to the casing 14.

To make this assembly of the lens unit 27 to the casing, it is merely necessary to press the thimble 34 of the lens unit 27 into the opening 23 of the lamp casing 14. No special tools are required. Similarly, when it is desired to remove the lens unit to replace a burnt out bulb, it is merely necessary to grasp the exposed channelled flange 29 with one's fingers and pull the lens unit from the casing. Or, if preferred, any kind of a prying tool may be inserted between the walls 24 and 33 to effect the disconnection, although such tools are really not required.

For economy in manufacturing cost the thimble 34 may be formed with a continuous annular projection rather than with the separate projections 37 shown. However, this does not give very much resiliency to the snap connection and makes it harder to remove the lens unit with one's fingers.

A preferred form of snap connection 36*b* is shown in Fig. 3 in which the thimble 34 is provided with a plurality of short longitudinal slots 38 forming a plurality of resilient fingers 39, one or more of which may be provided with a projection 37. This form is easy to snap into and out of place in the lamp casing 14, yet holds the lens unit in place very effectively.

The metal ring 28 may be given various finishes, different than the exterior of the casing 14, thereby improving the general appearance and esthetic appeal of the lamp.

The snap connections 36 and 36*b* may be used equally well to snap into a female flange 22*a* in a modified casing 14*a*, as will be quickly apparent by viewing Fig. 11.

Figs. 5 through 10 show some forms of the present invention basically similar to the forms just described in detail, differing mainly in the provision of a split metal ring 28*a* whereby it is possible to replace broken lens 31 or change a lens of one color to that of another color without replacing a complete lens unit. With the split ring form of the present invention, as with the forms already described, it is not necessary to use tools of any kind when replacing a lamp bulb, or the like. The casing 14 need not be changed in any way.

Figs. 5, 6, and 7 show a lens unit 27*a* with a snap connection 36*c* of a modified form comprising a split metal ring 28*a* with flange 29*a* having a preformed channel 40 adapted to receive the peripheral flange of the lens 31 and to thoroughly hold the same when the ring is closed in.

A rearwardly projecting thimble 34*a* with a peripheral groove 41 is provided on the ring. This thimble, because of a split 42, is resilient and may be pushed through the opening 23, the wall 25 serving to squeeze in the thimble until the groove 41 aligns with the flange 22 whereupon the groove 41 grips the end wall and holds the unit in place and draws the flange 29*a* thereof against the front wall 24 of the casing.

The advantages of the split ring structure may, if desired, be embodied in the structures disclosed in Figs. 1–4 and described in detail by providing a split in the metal ring 28 similar to the split 42 disclosed in the modified construction of Figs. 5 and 6.

A modified snap connection 36*d* may be provided on the lens unit 27*a* by providing longitudinal slots 43 as disclosed in Fig. 8.

If it is desired to dispense with the peripheral groove 41, a snap connection 36*e* may be provided on a metal ring 28*b* by having a thimble 34*b* of smaller diameter as it approaches the flange 29*b* as disclosed in Fig. 10.

Other variations and modifications may be made within the scope of this invention, and portions of the improvements may be used without others.

Having thus described the invention, what is claimed as new is:

1. A lamp, comprising in combination a casing; an inwardly projecting flange on said casing defining a light opening; a lens; a metal ring having a forwardly projecting channelled flange for holding said lens and having a rearwardly projecting thimble insertable in said light opening; and projections on said thimble spaced circumferentially thereof, cooperable directly with said casing flange to draw the channelled flange against the latter to thereby lock the casing flange between the channelled flange and the projections.

2. A lamp, comprising in combination a casing; an inwardly projecting flange on said casing defining a light opening; a lens; a metal ring having a forwardly projecting and continuous channelled flange for alone holding said lens and having a rearwardly projecting thimble insertable in said light opening; and portions on said thimble projecting outwardly a distance greater than the diameter of said light opening, adapted to be snapped under said casing flange when the thimble is inserted in the light opening to thereby lock the casing flange beween the channelled flange and the outwardly projecting portions.

3. A lamp, comprising in combination a casing; an inwardly projecting flange on said casing defining a light opening; a lens; a metal ring having a forwardly projecting and continuous channelled flange for alone holding said lens and having a rearwardly projecting thimble with rearwardly extending slots therein spaced circumferentially thereof; and portions on said thimble between said slots projecting outwardly a distance greater than the diameter of said light opening, adapted to be snapped under said casing flange when the thimble is inserted in the light opening to thereby lock the casing flange between the channelled flange and the outwardly projecting portions.

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