

May 26, 1970

R. R. ROSSI

3,514,010

LAMP HOUSING

Filed Sept. 5, 1967

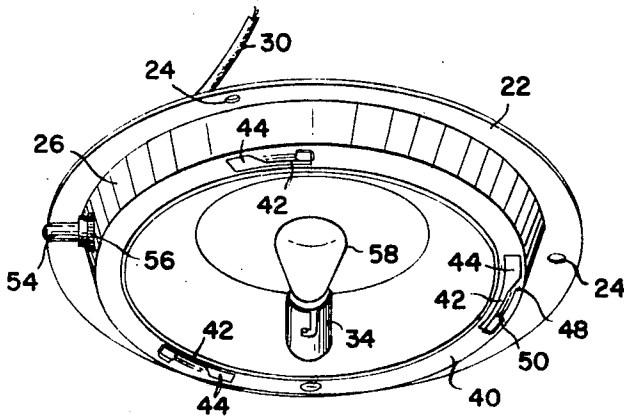


FIG. 2.

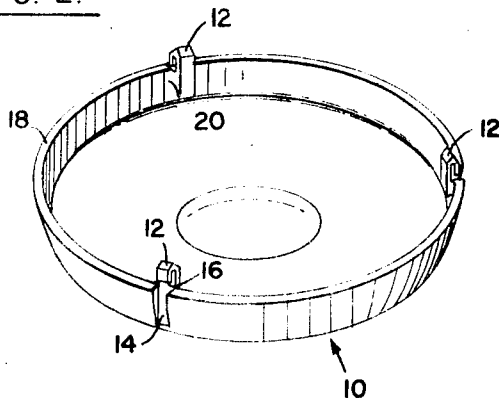


FIG. 1.

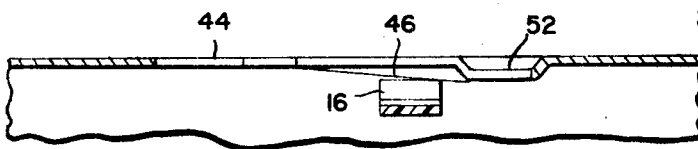


FIG. 7.

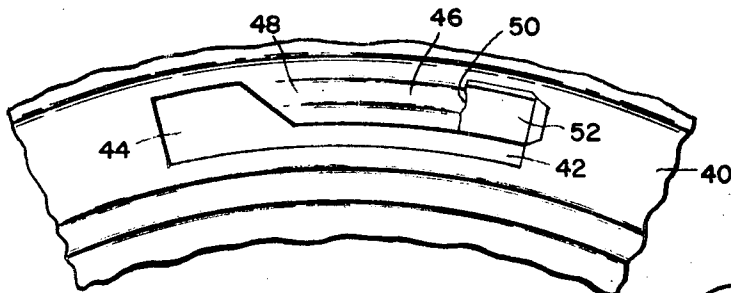


FIG. 8.

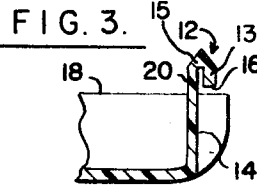
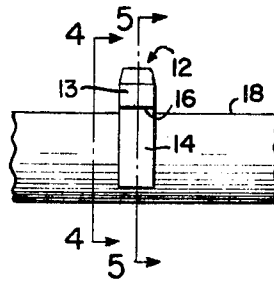


FIG. 5.

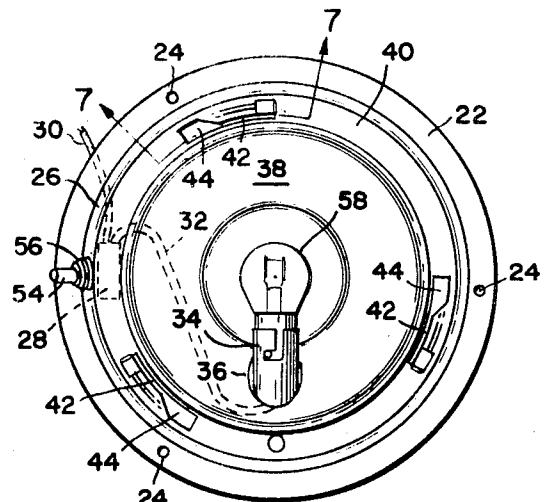


FIG. 6.

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3,514,010

LAMP HOUSING

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Filed Sept. 5, 1967, Ser. No. 665,327

Int. Cl. B65d 41/06

U.S. Cl. 220—40

1 Claim

ABSTRACT OF THE DISCLOSURE

A lamp housing for vehicular dome light having a sheet metal backing, to which is attached a translucent cover. The backing is provided with a plurality of slots, parallel to and adjacent to which are provided ramps. At the end of each ramp, a depression is provided. At the end of each slot, an enlarged opening is provided for the insertion of hook-shaped elements molded integrally with the translucent cover. Attachment of the cover is accomplished by inserting the hook-shaped elements into the enlarged openings, and rotating the cover so that the ends of the hook-shaped elements ride up the respective ramps and fall from the ramps onto the depressions to provide a secure closure.

BACKGROUND OF THE INVENTION

This invention relates to lamp housings of the type used in dome lights in vehicles, and particularly to the means by which the transparent or translucent cover is attached to the backing member.

Heretofore, dome light covers have been attached to backings by screws, or by providing both the cover and the backing with threads which engage each other. In the former, a number of screws must be removed each time a bulb is replaced, and in the latter, loosening of the cover by vibration due to movement of the vehicle is likely to occur. In both, construction is relatively expensive.

SUMMARY OF THE INVENTION

In accordance with the invention, slots are provided in the backing assembly for receiving flexible hooks which are molded integrally with the cover. When the cover is rotated, the ends of the hooks ride against ramps formed in the backing adjacent to the slots, and the cover is thereby tightened against the backing. At the end of the rotation, the ends of the hooks fall from the ramps onto depressions provided in the backing, and the cover is thereby securely attached to the backing.

No additional parts or fasteners are necessary to complete the assembly, and the slots, ramps, and depressions in the backing can be formed in a stamping operation, while the hooks can be formed during the molding of the cover.

The object of the invention, accordingly, is to provide a lamp housing which is simple to construct, and in which the cover is securely fastened to the backing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the translucent cover in accordance with the invention;

FIG. 2 is a perspective view of a backing assembly showing the side which normally faces downwardly from the ceiling of a vehicle when the assembly is used as a dome light;

FIG. 3 is an elevation of a flexible hook showing its relationship to the translucent cover of FIG. 1;

FIG. 4 is a vertical section taken on the plane indicated at 4—4 in FIG. 3;

FIG. 5 is a vertical section of the flexible hook taken on the plane indicated at 5—5 in FIG. 3;

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FIG. 6 is a bottom view of the backing assembly; FIG. 7 is a section taken on the cylinder indicated at 7—7 in FIG. 6; and

FIG. 8 is an enlarged bottom view of the slot and ramp illustrated in FIGS. 6 and 7.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, the cover, indicated generally at 10, is desirably translucent, and may be produced by molding a suitable plastic such as Plexiglas. Cover 10 is generally saucer-shaped, and is provided with three integrally molded hooks 12, which are 120° apart from each other. Each hook 12 consists of a back 20, an end portion 13 and a connecting portion 15 which connects end portion 13 to the back and maintains the end portion in parallel relation to the back.

Referring to FIGS. 1, 3, 4 and 5, the relationship between the hooks and the cover is indicated. Because hooks 12 extend from a depressed portion 14 of the wall of the cover, the ends 16 of the hooks do not extend beyond the periphery 18 of the cover. The depressions permit the cover to be removed from the mold.

Because of their narrow width, hooks 12 are flexible, and it will be seen that upward pressure on end 16 results in bending primarily at 20.

FIGS. 2 and 6, which illustrate the underside of the backing, show rim 22, which is provided with holes 24 for mounting screws and wall 26, through which passes a threaded portion of on-off switch 28. Wire 30 delivers current to switch 28, and wire 32 delivers current from switch 28 to bayonet socket 34, which extends through hole 36 in wall 38. The current is returned through the backing assembly and through the body of the vehicle to which the backing assembly is attached.

Referring now to FIGS. 6, 7 and 8, annular portion 40 of the backing is provided with slots 42 having enlarged openings 44 at their ends. Ramps 46 extend adjacent slots 42 from their lower ends 48 to their higher ends 50. The high ends of the ramps terminate at depressions 52, which are above the surface of annular portion 40, but which are lower than the ends 50 of ramps 46.

Referring to FIG. 6, push-button 54 of switch 28 is shown. Switch 28 is secured to wall 26 by a knurled nut 56. Bayonet socket 34 is shown extending through hole 36 in wall 38, and bulb 58 is held in bayonet socket 34.

Referring to FIGS. 7 and 8, end 16 of a hook is shown in engagement with the middle portion of ramp 46. This is a position in which the hook would be during tightening of the cover.

During the attachment of the cover 10 to the backing, it will be apparent from FIGS. 7 and 8 that each hook 12 is inserted through an opening 44, and as the cover 10 is rotated clockwise, the end 16 of each hook engages ramp 46. Since the periphery 18 is simultaneously in engagement with annular portion 40 of the backing, the ramps impart pressure to the ends 16 of each hook, and causes the hooks to be bent at 20 as indicated in FIG. 4. When the ends 16 of the hooks drop onto depressions 52, each hook is still bent slightly at 20, and the force resulting from this bending holds the rim 18 of the cover tightly against annular portion 40 of the backing.

The tight engagement of the cover with the backing provides a secure seal against the entrance of dirt and moisture, and only a small gap exists where depressions 14 meet the edges of slots 42.

It will be apparent that the cover can be installed and removed for the purposes of replacing the bulb with comparative ease since the rotation of cover 10 imparts a great deal of force to the hooks under the action of the ramps. When the cover is in position on the backing,

hooks 12 are bent slightly at 20, and the resulting force on ends 16 acting against depressions 52 holds the cover firmly against the backing. Although the arrangement described is particularly suitable for use as a vehicular dome light, it will be apparent that it may be modified in various ways in order that it may be used for other purposes, for example, as a marker lamp. Other modifications can be made without departing from the scope of the invention as defined in the following claim.

I claim:

1. A lamp housing for mounting on a surface comprising a backing member adapted to be mounted on said surface, said backing member having a substantially flat, annular portion and means holding said annular portion in fixed relation to and separated by a distance from said surface so that one side of said annular portion faces said surface and the other side faces away from said surface, at least one arcuate slot in said annular portion, a ramp extending parallel to said slot on the side of said annular portion facing said surface, said ramp having a lower end and a higher end, the higher end being closer to said surface than the lower end, an opening in said annular portion wider than said slot and connecting with said slot adjacent the lower end of said ramp, a raised portion on said annular portion adjacent and in line with the higher end of said ramp, said raised portion being

lower than the higher end of said ramp but higher than the lower end of said ramp, and a cover engaging said annular portion on the opposite side from said ramp, said cover being made from a plastic and having a plastic hook-shaped member, said hook-shaped member comprising a narrow, resilient, elongated back integrally molded with the cover, said back extending through said slot, and an end portion separated from said back, and a connecting portion connecting said end portion to said back, the back and end portions of the hook-shaped member being so dimensioned that, when the free end of said end portion is in contact with said raised portion, said back is bent.

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U.S. Cl. X.R.

240—7.35, 41.55, 78