

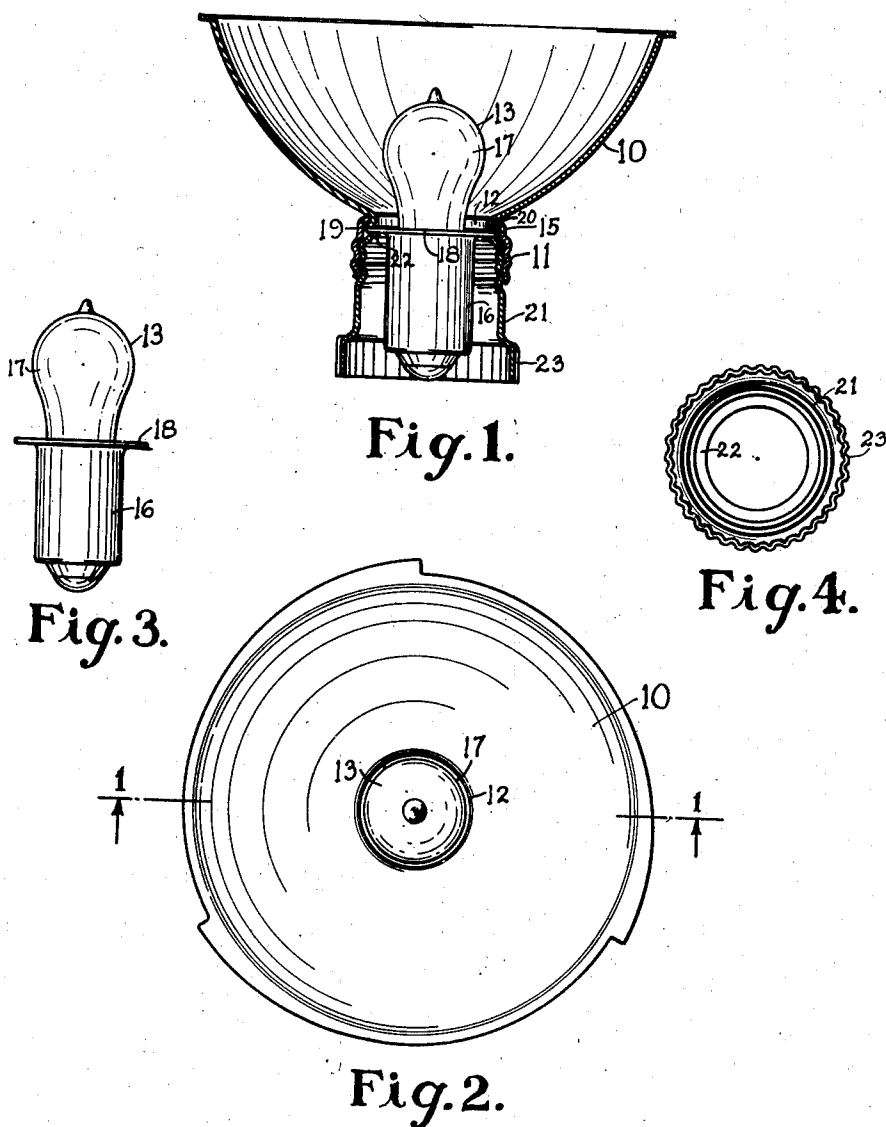
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REFLECTOR

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REFLECTOR

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2 Claims. (Cl. 240—10.6)

This invention relates to the manufacture of reflectors and more particularly reflectors of the type adapted for use in connection with flashlights and the like comprising a pressed sheet metal reflector body portion having an initially separate extension or neck portion secured thereto.

It is an object of the present invention to secure the reflector body portion and neck portion, each to the other, in such a manner as to keep the working face of the reflector free of joints or seams and thereby obtain uniform light reflecting surface throughout the full area of the reflector face.

With the above and other objects in view, as will be apparent, this invention consists in the construction, combination and arrangement of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawing, wherein:

Fig. 1 is a central vertical section through a reflector constructed in accordance with the present invention, and including a lamp and locking device in operative relation thereto.

Fig. 2 is a front elevation of the structure shown in Fig. 1.

Fig. 3 is a detail view of a lamp of standard design.

Fig. 4 is a detail view of a locking device for holding the lamp in operative relation to the reflector construction contemplated by this invention.

Flashlight reflectors, particularly the type now in use in connection with "prefocused" lamps employing a reference collar or flange adjacent the bulb portion for quick and easy disposal of the lamp in proper focusing relation to the reflector, are usually equipped with a tubular socket or neck which extends rearwardly from the central opening or base of the reflector for receiving the base of the lamp. The cost of providing a one-piece reflector and neck unit, in view of the limited price range prevailing in merchandise of this character, has made it desirable to provide a reflector construction consisting of a pressed sheet metal reflector body portion having an initially separate pressed sheet metal extension or neck portion secured thereto. In the two-piece constructions, however, it has been usual to clinch the forward end of the neck portion forwardly through the opening in the reflector to effect a rigid connection of these parts. As a result, the clinched through neck portion overlapped and covered up a portion of the reflector face whereby the available field of light

projection behind the lamp was reduced. In addition, the seam or joint so created on the face of the reflector furnished a trap for dirt and particles of reflector polishing compound and the like and the dirt so lodged in the joint caused a dark ring to be imposed on the lighted surface produced during operation of the light.

Referring to the drawing, the numeral 10 designates a reflector of the conventional semi-spherical or parabolic shape, of pressed sheet metal construction, having an initially separate extension or neck portion 11, also preferably of pressed sheet metal construction, projecting rearwardly therefrom and communicating with an opening 12 in the base of the reflector to provide a passageway for a lamp 13.

In the manufacture of a two-piece reflector and neck structure in accordance with the present invention, the material of the reflector 10 adjacent its opening 12, is formed to create a rearwardly projecting hollow shank portion 15. The neck portion 11, shown in the drawing, is particularly adapted for use in connection with "pre-focused" type lamps, such as shown in Fig. 3, having a plain cylindrical base portion 16, a bulb portion 17, and a reference collar or flange 18 at the inner end of the bulb portion 17 for quick positioning of the filament of the lamp in proper focus with the reflector. To this end, the neck 11 is preferably of a diameter at its rear or free end to permit the collar 18 to have a loose fit therewith so as not to hinder quick and easy insertion of the lamp therethrough preparatory to seating the lamp in operative position relative to the reflector. The forward portion of the neck 11 is constricted so as to define an internal shoulder 19 adapted to serve as a bearing coacting with the edge of the lamp collar 18 to maintain the lamp in coaxial relation with the axis of the neck 11 and reflector 10. The extreme forward end of the neck 11 is provided with an inwardly directed flange or lip 20, the opening defined by said lip 20 being slightly larger than the bulb 17 of the lamp 13 and preferably smaller than the diameter of the lamp collar 18.

To complete the assembly of the neck 11 and reflector 10, the flange or lip 20 of the neck 11 is placed on the shank 15 of the reflector 10, after which pressure is applied to the parts so assembled as to bend the marginal portion of the shank 15 radially outwardly to grip the flange or lip 20 of the neck 11 between the bent portion of the shank and the base of the reflector.

By so disposing the joint or seam between the

neck 11 and the reflector 10 in a position remote from the reflecting face of the latter, the said face of the reflector is smooth and unbroken by any seams or crevices in which dirt or the like might otherwise become pocketed, and the full axial distance of the reflector face, extending from the extreme edge of the opening 12 to the front edge of the reflector body 10, is available for uniform light projection.

In providing means for retaining the collar 18 of the lamp against the seat at the inner end of the neck 11 it is preferred to employ a tubular plug 21 having an end portion adapted to fit within and have threaded engagement with said neck 11. As shown in Fig. 1, a flange 20 projecting inwardly from said end portion of the plug 21 is engageable with the rearward surface of the collar 18 of the lamp to press said collar against the seat at the inner end of the neck 11, and the length of the plug is such that it provides a guard or fender device within which the full length of the portion of the lamp rearward of the collar 18 is adapted to be confined when the collar is thus engaged by the flange 20. In the form of the plug shown in the drawing it will also be observed that it affords exposure of the rear terminal of the lamp for direct contact with the central terminal of a battery. Knurling, or the like, may be applied to the rearward end of the plug, as at 23, to facilitate turning the plug into and out of engagement with the neck 11.

The foregoing description is directed solely towards the construction and assembly of reflector and neck portion, as illustrated, but it is desired to be understood that various mechanical changes to which the construction and assembly is susceptible may be made without departing from the invention sought to be covered hereby.

What is claimed is:

1. In a flashlight, a reflector formed of sheet metal and having a central opening with the material of the reflector adjacent its opening formed to create a rearwardly projecting tubular shank, a separate sheet metal tubular neck having an inwardly directed flange at one end thereof adapted to encircle said reflector shank and to be clinched between the body of the reflector and the portion of the reflector shank disposed inwardly of said flange to create a seat for the flange of a pre-focus type lamp, threads formed on the internal surface of said tubular neck, a

tubular plug having an end portion adapted to be arranged within and to have threaded engagement with said neck, a flange projecting inwardly from said end portion of the plug engageable with the rearward surface of the flange of the lamp to press said flange of the lamp against said seat upon such interengagement of the plug and said neck, said plug being of sufficient length that the full length of the portion of the lamp rearward of the flange carried thereby is adapted to be confined therein when said flange on the plug is in engagement with the flange on the lamp, and said plug being open at its rearward end to afford exposure of the rear terminal of the lamp for direct contact with the central terminal of a battery.

2. In a flashlight, a reflector formed of sheet metal and having a central opening with the material of the reflector adjacent its opening formed to create a rearwardly projecting tubular shank, a separate sheet metal tubular neck having an inwardly directed flange at one end thereof adapted to encircle said reflector shank and to be clinched between the body of the reflector and the portion of the reflector shank disposed inwardly of said flange to create a seat for the flange of a pre-focus type lamp, threads formed on the internal surface of said tubular neck, a tubular plug having an end portion adapted to be arranged within and to have threaded engagement with said neck and an opposed enlarged end portion provided with a knurled surface to facilitate rotation of the plug toward and away from engaged relation to said neck, a flange projecting inwardly from said end portion of the plug adapted to be arranged within the neck aforesaid which flange is engageable with the rearward surface of the flange of the lamp to press said flange of the lamp against said seat upon such interengagement of the plug and said neck, said end portions of the plug combining to form an enclosure of sufficient length that the full length of the portion of the lamp rearward of the flange carried thereby is adapted to be confined therein when said flange on the plug is engaged with the flange on the lamp, and an opening at the rear limits of the plug through which the rear terminal of the lamp is exposed for direct contact with the central electrode of a battery.

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