Oct. 7, 1958 G. P. LEWIS 2,855,499

FLASHLIGHT

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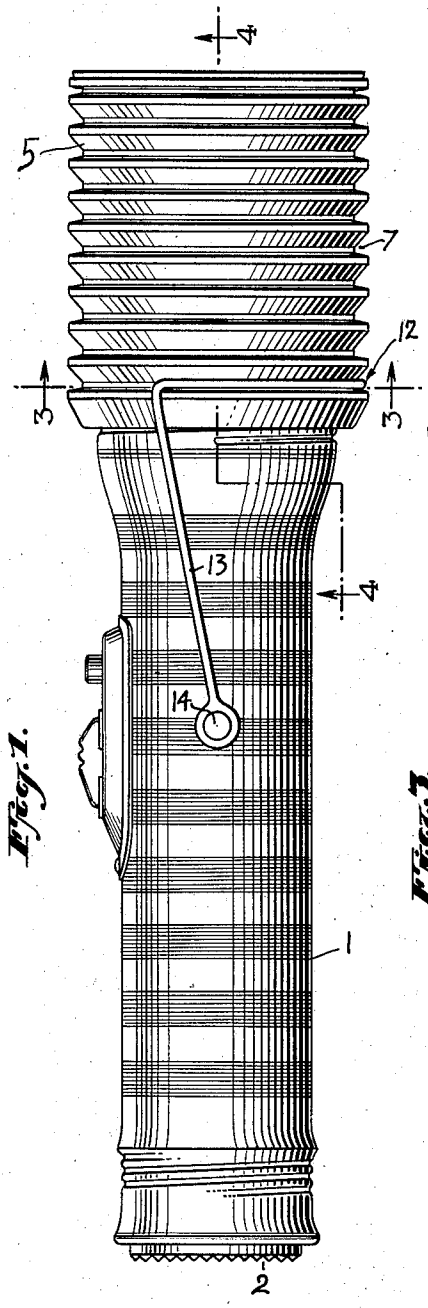


Fig. 1.

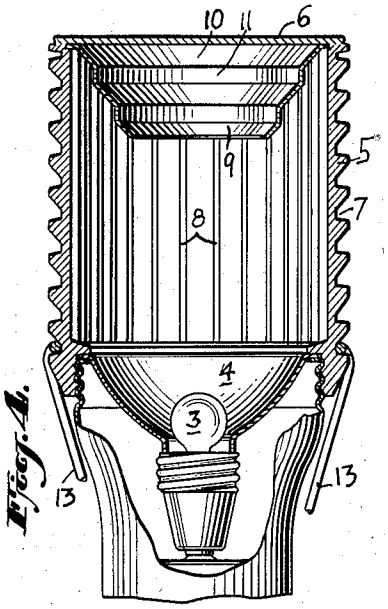


Fig. 4.

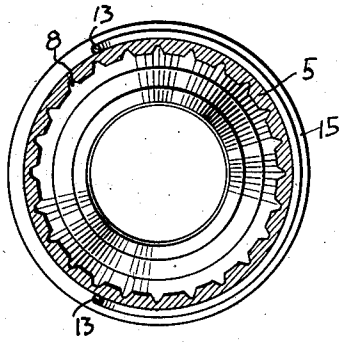


Fig. 3.

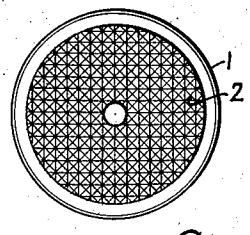


Fig. 2.

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FLASHLIGHT

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3 Claims. (Cl. 240—10.6)

The present invention relates to a flashlight which is particularly suitable for use in traffic.

Flashlights used in traffic must answer a dual purpose: They must provide a bright beam of light for throwing light on the road when walking or on subjects desired to be seen; they must also be seen from a considerable distance to serve as a warning, for example, to oncoming traffic.

To answer the second purpose it has been proposed to provide lateral translucent windows and additional light bulbs for lighting the windows. These additional light bulbs consume too much current which is wasted because, in order to be seen, only a small fraction of the light is needed which is required for producing a powerful light beam to be directed towards objects which must be lighted. It has also been proposed to provide substantially tubular translucent extensions at the front end of the flashlights through which extensions shines a portion of the light beam. These extensions do not receive enough light to be seen.

The invention provides a lantern at the front of a conventional flashlight which lantern is so constructed as to intercept a relatively small portion of the light beam for lighting the side wall of the lantern which side wall is made of translucent material.

It is desirable that the surface of the side wall is not smooth but constructed so that it causes a diffusion of light passing therethrough. Provision of conventional, for example, pyramid shaped protuberances for this purpose entails manufacturing difficulties. The side wall of the lantern is therefore provided, according to the invention, with a plurality of substantially circumferential grooves in one surface of the side wall and with a plurality of substantially longitudinal grooves in the other surface of the side wall. The combined effect of these grooves is the same as that of a multitude of facets as are provided in conventional reflectors.

For intercepting a relatively small portion of the normal light beam of a conventional flashlight, the side wall of the lantern according to the invention either converges towards the front end of the lantern from which the light beam emerges or a reflector is provided in the front end of the lantern which reflects a portion of the light beam onto the side wall. This reflector preferably has the shape of a cone, pointing towards the light bulb which is placed in a reflector at the rear end of the lantern. The reflector may also be in the form of a hollow frustum of a cone placed in the front end of the lantern and affording passage of a major part of the light beam through the reflector.

In order to make the flashlight also visible from the rear, it is proposed to provide a reflector at the rear end of the trunk of the flashlight.

The novel features which are considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself however and additional objects and advantages thereof will best be understood from the following description of embodiments thereof when read in connection with the accompanying drawing in which

Fig. 1 is a side elevation of a flashlight according to the invention;

Fig. 2 is a rear view of the flashlight;

Fig. 3 is a cross sectional view of the flashlight taken along line 3—3 in Fig. 1; and

Fig. 4 is a longitudinal sectional view of the forward portion of the flashlight, the section being made along line 4—4 in Fig. 1.

Like parts are designated by like numerals in different figures of the drawing.

Referring more particularly to the drawing, numeral 1 designates the trunk of a conventional flashlight to the rear end of which a reflector 2 is attached. Numeral 3 designates a light bulb placed in a reflector 4. Forward of the latter extends a lantern having a translucent side wall 5 and a transparent front wall 6. The outside of the side wall 5 is provided with circumferential grooves 7, leaving a saw tooth-like longitudinal sectional configuration of the wall 5, the saw teeth having a substantially radial side and a side diverging from the longitudinal axis of the lantern in the direction away from the light source. The inside of the side wall 5 is provided with substantially longitudinal grooves 8. Light shining through the wall 5 is broken or diffused by the combined action of the sides of the grooves 7 and 8 in a manner similar to the effect of pyramid-like protuberances if such would be provided on one side of the wall 5.

A hollow reflector 9 having substantially the configuration of a frustum of a cone is mounted in the forward portion of the lantern, the small end of the cone facing the bulb 3 and the major portion of the light beam produced by the bulb 3 and the reflector 4 extending through the cone. A relatively small portion of the light rays is intercepted by the reflector 9 and is directed onto the wall 5. The reflector 9 is composed of a plurality of frusto-conical portions 10 with interposed cylindrical portions 11. This structure affords correct angularity of the conical portions to evenly distribute the intercepted light on the wall 5.

A leg member 12 having two arms 13 which are hinged at 14 to the trunk 1, is provided with a curved portion 15 resting in the innermost of the grooves 7 when the leg member is in rest position. The curved portion 15 is somewhat greater than a semicircle so that it can be snapped on the lantern and stay there when the leg member is not in use. When the leg member is swung clockwise in Fig. 1 it forms a stand for the flashlight.

While a specific embodiment of the invention has been shown and described, it will be apparent to those skilled in the art that various changes, modifications, substitutions, additions and omissions may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.

What is claimed is:

1. A flashlight having a tubular body, a reflector mounted in one end of the body, a lamp bulb within the reflector, a tubular lantern body mounted at the end of the flashlight body and extending forwardly of the reflector and bulb, said lantern body being provided in its outer surface for its entire length with a plurality of similar circumferential grooves, said lantern body being provided in its inner surface for the entire area of the same with a plurality of axially-extending grooves, the latter grooves being disposed at substantially right angles to those in the outer surface of the lantern body, a closure member for the forward end of the lantern body, said closure member including a transparent wall extending across the front end of the lantern body and

a reflector member secured to said wall and extending into the lantern body, said reflector member being in the form of a stepped hollow frustro-conical element provided with a central opening through which light rays can pass to reach and pass through the transparent wall while other light rays are reflected by the walls of the frustro-conical element through the grooved translucent wall of the lantern body.

2. A flashlight having a tubular body, a reflector mounted in one end of the body, a lamp bulb located within the reflector, a tubular lantern body mounted at the end of the flashlight body and extending forwardly of the reflector and bulb, the lantern body being provided in its outer surface for its entire length with a plurality of circumferential grooves, the said lantern body being provided in its inner face for said entire inner surface with a plurality of like axially-extending grooves, the latter grooves being arranged at substantially right angles to those in the outer surface of the lantern body, and a transparent closure member at the outer end of the lantern body, said transparent closure member being provided with a plurality of annular reflecting surfaces for reflection of light through the grooved transparent wall of the lantern body.

3. A flashlight having a tubular body, a reflector mounted in one end of the body, a lamp bulb within

the reflector, a tubular translucent lantern body attached at one end of the flashlight body and extending forwardly of the reflector and bulb, said lantern body being provided in its outer surface with a plurality of similar circumferential grooves, said grooves extending for the entire length of the lantern body, the lantern body being provided in its inner surface for the entire area of said surface with axially-extending grooves, a closure member for the forward end of the lantern body, said closure member being transparent and being provided with a centrally-located, integrally formed hollow transparent cone formed integrally with the closure member, said cone having an open end facing the lamp bulb and having a stepped side wall formed with inclined light-reflecting surfaces.

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