Oct. 29, 1940. E. W. PUMMILL 2,219,906

LAMP

Filed Oct. 25, 1937

FIG. 1

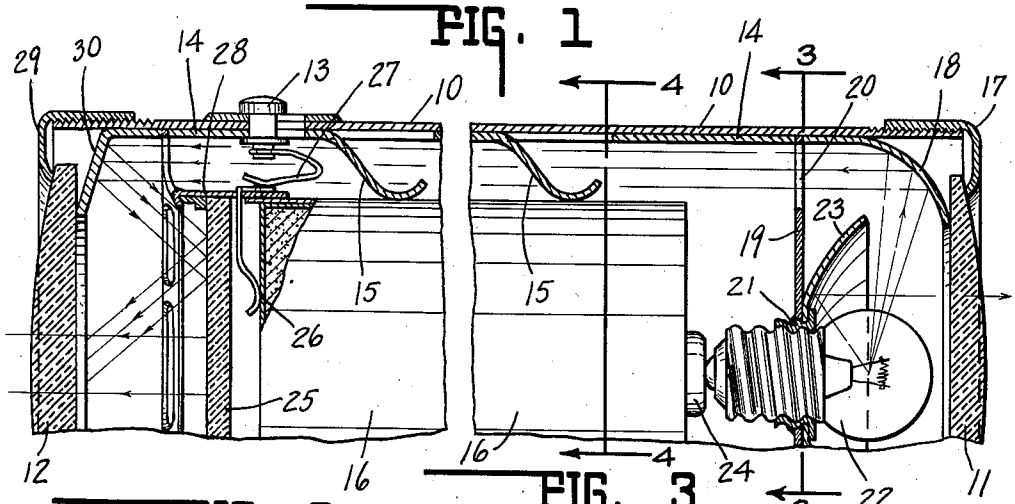


FIG. 2

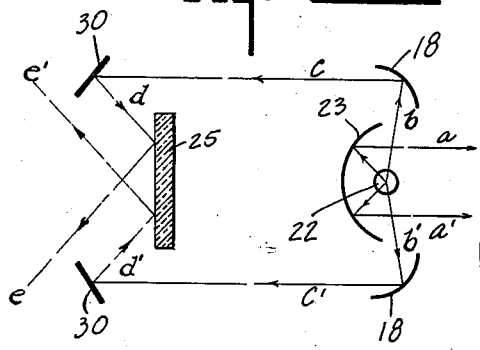


FIG. 3

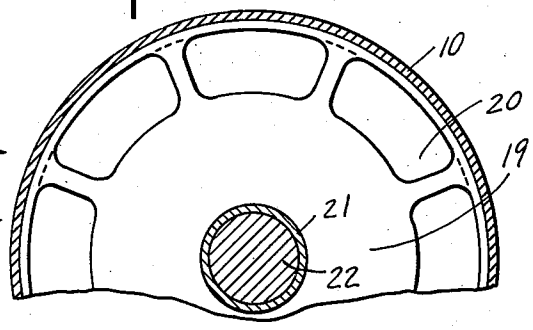


FIG. 4

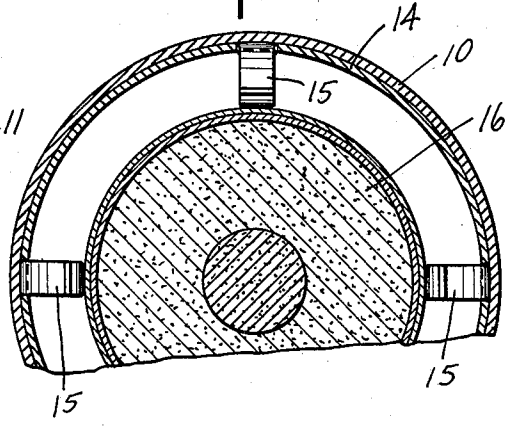
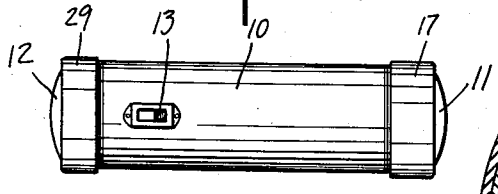


FIG. 5



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Patented Oct. 29, 1940 2,219,906

UNITED STATES PATENT OFFICE

2,219,906

LAMP

Edwin W. Pummill, Indianapolis, Ind.

Application October 25, 1937, Serial No. 170,780

4 Claims. (Cl. 240—10.6)

This invention relates to a lamp, particularly adapted for use in connection with bicycles, and which may be either clamped upon the bicycle, such as the handle bars, or may be held in the hand while riding.

The purpose of the invention is to provide a simplified flash-light type of lamp which will provide both a headlight beam and a tail light.

This is accomplished by suspending the usual battery in a tubular housing, such as that now commonly employed in flash lights, together with suitable reflectors so arranged that certain of the rays, preferably the direct rays, from the lamp bulb will be reflected rearwardly about the battery contained in the housing to the rear end thereof and there reflected through a red lens to provide a signal, danger or tail light.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

Fig. 1 is a central vertical section taken through the lamp with parts thereof broken away. Fig. 2 is a diagrammatical illustration of the reflected light rays. Fig. 3 is a section taken on the line 3—3 of Fig. 1. Fig. 4 is a section taken on the line 4—4 of Fig. 1. Fig. 5 is an elevation of the lamp.

In the drawing there is shown a tubular lamp casing 10 provided with a clear glass lens 11 at the forward end thereof and a red or signal lens 12 at the rear thereof. The casing 10 is provided with the usual switch button 13. Mounted within the casing 10 there is a tubular metal lining 14 having inwardly sprung spacing fingers 15. Said fingers 15 support the usual flash light battery 16 in spaced and floating relation with respect to the lining 14 and casing 10.

The front end of the casing is provided with a screw threaded portion upon which a bezel 17 is threaded for securing the lens 11 in position against a reflecting member 18. Between the reflecting member and the lining 14 there is a supporting disk 19 having a plurality of apertures 20 spaced around the periphery thereof for admission of light rays therethrough. Said disk is clamped and securely held between the abutting edges of the lining 14 and reflector 18, the latter being held in place between said lining and lens 11 by the bezel 17.

The center of the disk 19 is turned up and threaded to provide a socket 21 for the reception of a lamp bulb 22, and also secure in position a concavo-convex reflector 23. The flexing of the disk 19 holds the lamp 22 in contact under spring pressure of the contact plate 24 on the battery 16.

The rear end of the battery has clamped thereto a concave reflecting surface 25 herein illustrated as a mirror, but which may be of reflecting metal. For providing an electric contact with the rear end of the battery, there is provided a contact finger 26 which extends radially beyond the periphery of the battery in position to be slidably engaged by the contact spring 27 mounted upon the switch button 13. Thus the spring 27 may be caused to slide out of engagement with the terminal of the contact finger 26 to break the circuit and be caused to slide into engagement therewith for closing the circuit. The finger 26 with its terminal, as well as the reflector 25, is clamped to the end of the battery 16 by a flanged ring 28 provided with apertures corresponding with apertures 20 of the disk 19. Said ring also functions to anchor the battery to prevent longitudinal rearward movement, and to that end it is held between the abutting ends of the reflector 30 and lining 14.

The lens 12 is secured in position by a bezel 29 which screws upon the rear end of the casing 10, clamping said lens against a rear reflector 30 which in turn abuts against the rear end of the lining 14, said reflector 30 having its central portion open to emit the light rays through the lens 12.

The lamp may be readily assembled or disassembled for removal or replacement of the battery by unscrewing the bezel at either end and sliding the parts from the casing 10 other than the lining which would remain therein. The reflector 25 may be readily removed from an old battery and clamped to a new one. When assembled and in use, the depression of the switch button 13 will close a circuit through the strip 27, lining 14, disk 19 and lamp 22.

When the lamp is illuminated, the rays are directed as indicated in the diagram of Fig. 2. The headlight rays projected through the lens 11 comprise both direct rays from the lamp and the reflected rays from the reflector 23. These are indicated as rays *a*, *a'*. More laterally directed rays of the lamp are reflected by the reflecting ring 18 rearwardly between the battery and casing to the reflecting ring 30, as indicated by the rays *b*, *c* and the rays *b'*, *c'*. The reflecting ring 30 directs the rays *c* to the reflector 25, as indicated at *d*, which again reflects the rays rearwardly as indicated at *e* through the colored or signal lens 12. Similarly the rays

c' are reflected as the rays d' which are again reflected as the rays e'.

By reason of the reflector **25**, any light projected from the rear toward the lamp will pass through the lens **12** and be projected thereon by the reflector **25** so as to illuminate the colored signal lens even though the lamp **22** is not illuminated.

The invention claimed is:

1. A lamp structure comprising a casing, a light emitting lens mounted at each end thereof, a battery supported within said casing in spaced relation thereto so as to provide a passageway between said battery and casing throughout the length thereof, a lamp bulb mounted within said casing adapted to be illuminated by said battery, and reflecting means mounted within said casing for simultaneously projecting light rays from said lamp bulb to one of said lenses and through said passageway to the other lens.

2. A lamp structure comprising a casing, a light emitting lens secured to each end thereof, a battery supported within said casing, a plurality of inwardly extending projections for supporting said battery in spaced relation to at least a portion of the inner periphery of said casing, a lamp bulb carried by said casing at one end of said battery adapted to be illuminated thereby, and reflecting means mounted within said casing for simultaneously directing a portion of the light rays from said bulb directly through one of said lenses and a portion thereof between the battery and casing through the other lens.

3. A lamp structure comprising a casing having a light emitting lens at each end thereof, a battery carried within said casing, means for supporting said battery in spaced relation to at least a portion of said casing, a lamp bulb carried by said casing adjacent one end of said battery and one of said lenses, a concave reflector directly associated with said lamp bulb for projecting rays directly through said adjacent lens, and an oppositely disposed reflector ring carried by said casing forwardly of said bulb beyond the periphery of said reflector to receive rays from said bulb for reflection between the casing and battery to the other end thereof for projection through the other lens.

4. A lamp structure comprising a casing having a light emitting lens at each end thereof, a battery carried within said casing, means for supporting said battery in spaced relation to at least a portion of said casing, a lamp bulb carried by said casing adjacent one end of said battery and one of said lenses, a concave reflector directly associated with said lamp bulb for projecting rays through said adjacent lens, an oppositely disposed reflector ring carried by said casing forwardly of said bulb beyond the periphery of said reflector to receive rays from said bulb for reflection between the casing and battery to the other end thereof, and a reflector ring adapted to receive the rays projected beyond said battery for projecting them upon a centrally positioned reflector adapted to reflect the rays through the other lens.

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