

Feb. 26, 1952

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WATERPROOF PILOT LAMP
Filed Aug. 30, 1950

2,586,869

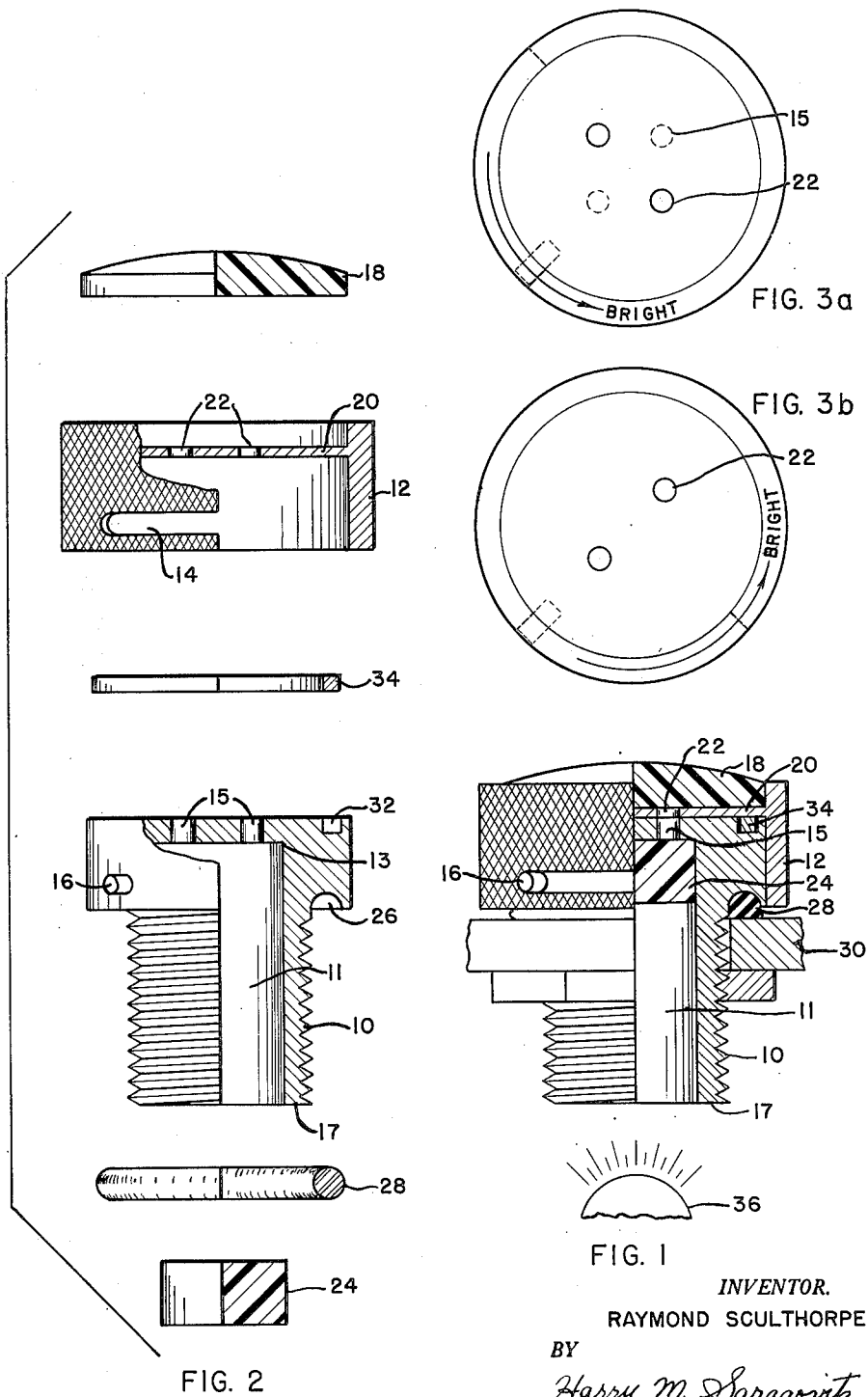


FIG. 1

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2,586,869

WATERPROOF PILOT LAMP

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to the United States of America as represented
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Application August 30, 1950, Serial No. 182,386

7 Claims. (Cl. 177—329)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment of any royalty thereon.

This invention relates to a light assembly, and more particularly to a waterproof pilot light assembly, the intensity of light therethru being easily adjustable.

In the general commercial use of pilot light assemblies to give a visual indication of the operativeness of various types of electronic equipment, such as a pilot light located on the outside panel of a radio receiver or transmitter, no problem of waterproofing presents itself inasmuch as such equipment is usually located within a building or structure which adequately protects the equipment from the atmospheric elements. However, if such equipment is used for military purposes, as in moving vehicles or in field use, such electronic equipment is constantly exposed to the atmosphere. Complete waterproofing of the equipment then becomes an all important consideration for the efficient functioning of the apparatus at all times. It is also desirable for reasons of military security for such visual indicating means to be easily and readily variable in the light intensities projected therethru.

It is, therefore, an object of this invention to provide improved waterproofing means for a pilot light assembly.

It is a further object of this invention to provide a waterproof pilot light assembly with a hood having openings thru which light is projected and means for varying the intensity of the light transmitted.

Further objects and advantages of the invention will be apparent from the following description, reference being made to the accompanying drawings, wherein a preferred embodiment of the perfected invention is clearly shown.

In the drawings

Fig. 1 is a side view of the pilot light assembly, one half being shown in elevation, and the other half being shown in cross section.

Fig. 2 is an exploded view of Fig. 1.

Figs. 3a and 3b are top views showing two positions of the light intensity varying means.

Referring to the drawings, the assembly comprises a light tube 10 composed of brass, aluminum or similar material is hollowed out to provide a light passageway 11, which terminates at the solid outwardly flanged end 13. The solid or closed end 13 is then provided with two small light apertures 15 disposed around the central axis of light tube 10, thus providing for the transmission of light from the threaded end 17 of

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tube 10 thru the solid end 13. Fitted over the flanged or closed end 13 of light tube 10 is a knurled hood or cup-shaped shutter part 12 having a running fit so as to be easily rotatable about the axis of tube 10. The knurled hood 12 is held in position on end 13 by slot 14 in the outside rim of hood 12, and retaining pin 16. Attached to one end of the open portion of hood 12 is a lens of plastic material 18 or any other suitable transparent or translucent material. The lens 18 is firmly held in place by the edges of hood 12.

Adjacent to the inner surface of lens 18 is a shutter which comprises a solid opaque disc 20 disposed within the passageway provided by hood 12 and formed as an integral part therewith. Disc 20 is also provided with two light apertures 22 similar in size and arrangement to light apertures 15. Fig. 3a shows the position of disc 20 with passageways 22 completely out of visual alignment with passageways 15, thus preventing any light from being transmitted thru the pilot light assembly. To permit light to travel thru the assembly, knurled hood 12 is rotated in a counter-clockwise direction so as to bring passageways 22 into any degree of alignment with passageways 15. It is understood that apertures 15 and 22 need not be limited to two holes, but may be any desired number eccentrically spaced about the central vertical axis of tube 10. Slot 14 is of sufficient length to allow hood 12 to rotate to bring the passageways 15 and 22 either completely in or completely out of alignment with each other.

The assembly is made waterproof in the following manner: A solid transparent plastic disc 24 is disposed within light tunnel 10 flush with solid end 13 as shown in Fig. 1, the edges of disc 24 being hermetically sealed to the inner walls of tube 10. Flanged portion 13 is undercut circumferentially 360°, and a rubber grommet or ring 28 is inserted into undercut 25 making a snug fit therewith. The assembly is then threadably secured to panel board 30, and ring 28 is compressed against the outer surface of panel board 30 thus insuring a waterproof joint between the assembly and the panel board. Any moisture or water which may enter the assembly thru the joints where the lens 18 is attached to hood 12 or thru the running fit of hood 12 to tube 10 is effectively prevented from entering the tube 10 by the water impervious transparent plastic disc 24 which is sealed to the inner wall of tube 10. The outer end of flange 13 is provided with groove 32 into which spring 34 is inserted to retain it in any adjusted position under conditions of

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vibration which might cause accidental turning due to the running fit of hood 12 with tube 10. Light source 35 can be any source situated within an apparatus to which tube 10 is to be attached.

A pilot light assembly constructed according to the invention described above has been successfully tested by submersion in six feet of water for one hour at room temperature, no measurable leakage of water thru the assembly having been detected. Although the invention has been described in its particular embodiment as a pilot light assembly, it will be readily apparent that the invention is equally applicable to any light projection system such as a flashlight. Other obvious modifications will occur to those skilled in the art without departing from the spirit of the invention as defined in the appended claims.

What is claimed is:

1. A waterproof light projection assembly comprising a body part having a first end portion shaped for insertion into a light source, said body part being hollow for the transmission of said light, a second end portion of said body part having a first opaque closure, said first closure having at least one light passageway therethru, a hood rotatably mounted on each second end portion, said hood having a translucent closure at its outer end, a second opaque closure disposed within said hood, said second opaque closure having at least one light passageway therethru, said light passageways being positioned relatively to each other so that they are brought into and out of axial alignment by the rotation of said hood, translucent means disposed between said second end portion and said hollow portion, said translucent means being sealed to the inner walls of said hollow portion to prevent the seepage of water therethru, and means disposed about said first end portion to constitute a waterproof seal between said body part and said light source.

2. In a waterproof light projection assembly, as described in claim 1, wherein said translucent means comprises a water impervious plastic disc.

3. In a waterproof light projection assembly as described in claim 1, wherein said last mentioned means comprises a rubber gasket compressably fitted around the outer walls of said first end portion.

4. In a waterproof pilot light, a hollow body part closed at one end thereof and open at the other end, said part being provided with an aperture through the closed end thereof and disposed eccentrically with respect to the longitudinal axis of said part, a shutter part fitted to said closed end and rotatable relatively with respect to said body part and about said axis, said shutter part being provided with an aperture substantially complementary with respect to said first-named aperture in both size and disposition, means holding said parts against movement with respect to each other in the direction along said axis while permitting said relative rotary movement, and translucent means disposed within said body part and sealed thereto over said first-named aperture.

5. In a dimmer device for a light source, a hollow body part closed at one end thereof and open at the other end, said part being provided with an aperture through the closed end thereof

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and disposed eccentrically with respect to the longitudinal axis of said part, a cup-shaped shutter part fitted over said closed end and rotatable relatively with respect to said body part and about said axis, said shutter part being provided with an aperture substantially complementary with respect to said first-named aperture in both size and disposition, said shutter part in the wall structure thereof being provided with a slot, a pin fixed in said body part and extending into and having a sliding fit in said slot thereby to hold said parts against movement with respect to each other in the direction along said axis while permitting said relative rotary movement, and translucent means disposed within said body part and sealed thereto over said first-named aperture.

6. In a dimmer device for a light source, a hollow body part closed at one end thereof and open at the other end, said part being provided with an aperture through the closed end thereof and disposed eccentrically with respect to the longitudinal axis of said part, a cup-shaped shutter part fitted over said closed end and rotatable relatively with respect to said body part and about said axis, said shutter part being provided with an aperture substantially complementary with respect to said first-named aperture in both size and disposition, said shutter part in the wall structure thereof being provided with a slot, a pin fixed in said body part and extending into and having a sliding fit in said slot thereby to hold said parts against movement with respect to each other in the direction along said axis while permitting said relative rotary movement, said body part in the closed end thereof being provided with a groove, and a ring of spring-like material disposed in said groove and compressed between said closed end and the adjacent face of said shutter part.

7. In a dimmer device for a light source, a hollow body part closed at one end thereof and open at the other end, said part being provided with an aperture through the closed end thereof and disposed eccentrically with respect to the longitudinal axis of said part, a cup-shaped shutter part fitted over said closed end and rotatable relatively with respect to said body part and about said axis, said shutter part being provided with an aperture substantially complementary with respect to said first-named aperture in both size and disposition, and translucent means disposed within said body part and sealed thereto over said first-named aperture.

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