

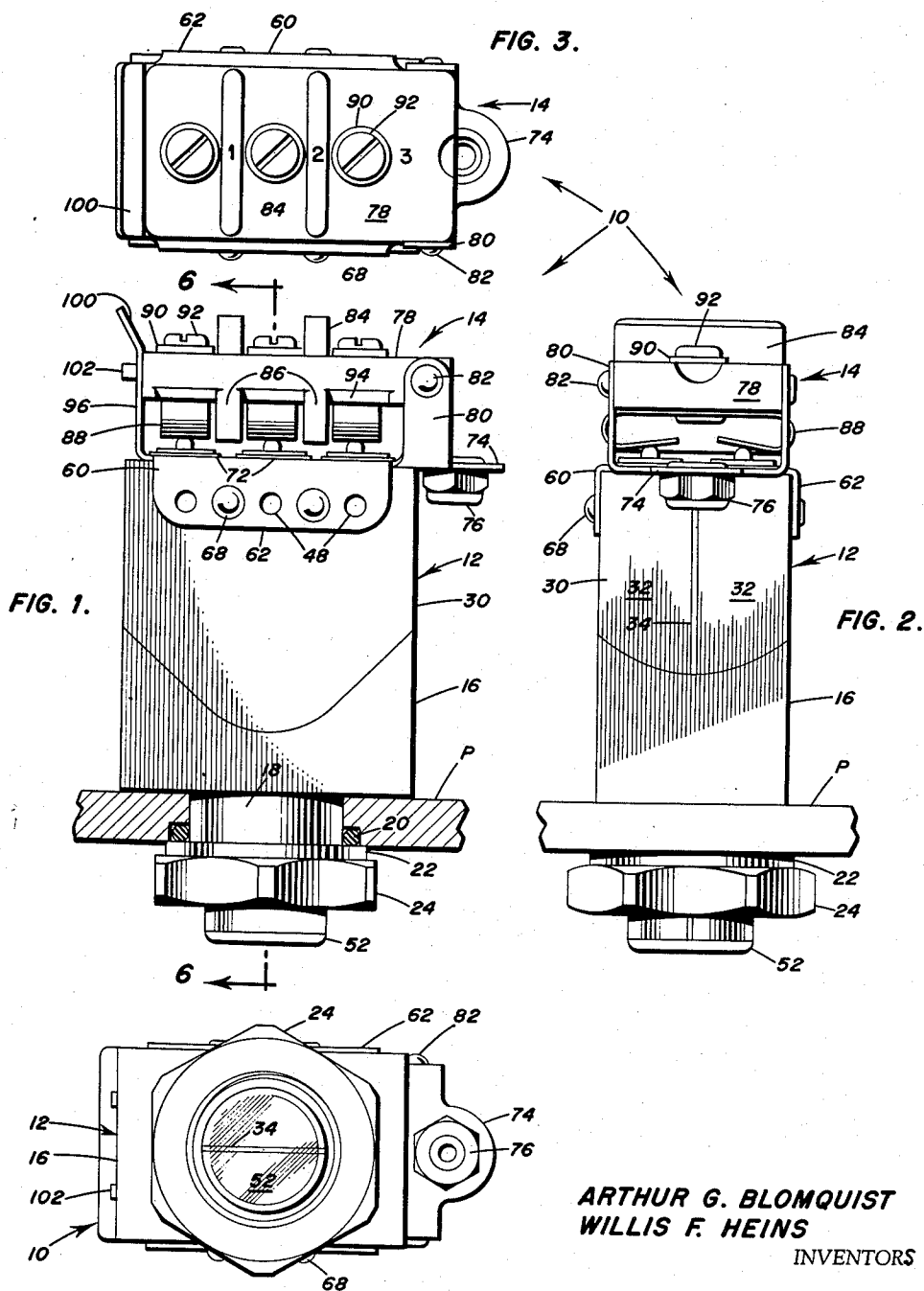
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A. G. BLOMQUIST ETAL  
TRI-COLOR INDICATOR LIGHT

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FIG. 5.

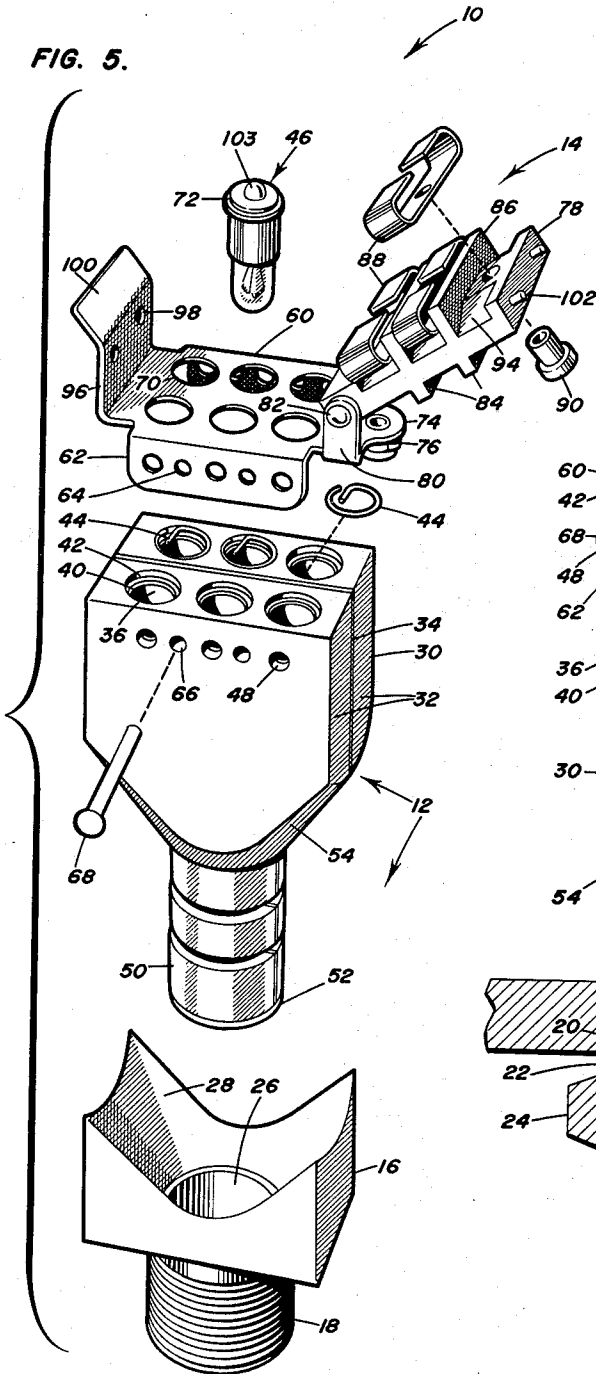
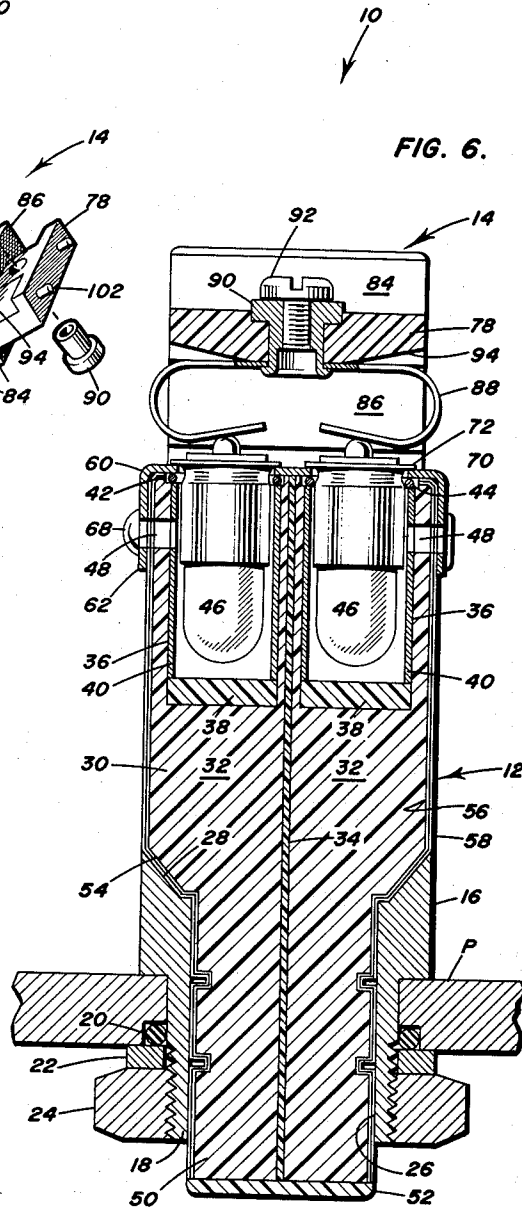


FIG. 6.



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## TRI-COLOR INDICATOR LIGHT

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4 Claims. (Cl. 340—378)

This invention relates generally to electric light devices, and more particularly it pertains to a signal or pilot light which is capable of displaying separately in a plurality of colors.

In present day complex electronic circuits used in military ordnance equipment, there has arisen a requirement for more functions of the circuits in less space. Among such requirements of the circuits is that for displaying a pilot light signal in more than one color.

Accordingly, basic objects of this present invention are to provide a compact tri-color indicator light which is one-hole mounting, moisture proof, shock and vibration resistant, capable of continuous operation without overheating, and with dual lamp reliability provision which indicates the need for replacement of a lamp.

Another object of this invention is to provide a tri-color pilot light of a dual bulb type which is easy to re-bulb without tools and which retains the bulbs from accidental ejection during this process.

Still another object of this invention is to provide a plural lamp socket assembly of great compactness and simplicity having a finger release bulb latch.

These and other objects and advantages of this invention will become more apparent and understood from the detailed specification and accompanying drawings in which:

FIG. 1 is a top plane view, considerably enlarged, of the novel indicator light incorporating features of this invention;

FIG. 2 is a side elevation of the indicator light shown in FIG. 1;

FIG. 3 is a rear elevation of the indicator light;

FIG. 4 is a front elevation of the indicator light;

FIG. 5 is an exploded perspective view showing the relative locations of the parts of the indicator light; and

FIG. 6 is a longitudinal section of the indicator light taken along the line 6—6 of FIG. 1.

Referring now to FIGS. 1, 2, 3, and 4, of the drawings the novel indicator light is designated generally by reference numeral 10 therein and throughout the remaining drawings and text of this specification. The indicator light 10 consists generally of a body assembly 12, a terminal board assembly 14, and a lower body 16, having an integral threaded bushing 18.

The bushing 18 is used in conjunction with an O-ring 20, washer 22, and a locknut 24 to mount the indicator light 10 in a conventional one-hole fashion on a panel P. As best shown in FIG. 5, the lower body 16 of which bushing 18 is a part is machined out for a conical concave surface bezel 28 and a bore 26.

The body assembly 12 is made up of an upper body 30 consisting of a pair of plastic light piping halves 32 each having three spaced side-by-side bores 36 at the rear or upper-most ends as shown best in FIG. 5.

These light piping halves 32 are cemented together with an intervening opaque vinyl partition 34, best shown in FIG. 6 and machined to provide a conical shaped light gathering surface 54 and a cylindrical boss 50 to closely fit respectively, the contour of previously mentioned bezel 23 and the bore 26.

The bottoms of each of the three pairs of bores 36 are equipped with cemented-in colored transparent discs 38, and cemented-in brass sleeves 40 which extend nearly to

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the edge of the bores. The edges of the bores 36 are shouldered as indicated by reference numeral 42 for a retaining spring 44. These retaining springs 44 are shaped to bear against the base portion of miniature lamps 46.

The body assembly 12 is coated on its four sides and around the surface 54 and the cylindrical boss 50, with a translucent light-turning white coating 56 and thereover an opaque black outer coating 58, as shown in FIG. 6. The surface 54 and cylindrical boss 50 are then assembled to and cemented within the bezel 28 and bore 26 of the lower body 16. A frosted transparent disc 52 is next cemented to the end of the cylindrical boss 50.

A receptacle plate 60, equipped with side flanges 62, is next secured to the end of the upper body 30 of the body assembly 12 by long rivets 68 which are passed through matching holes 64 and 66. Additionally, ventilating ports 48 are drilled from the outside into each brass sleeve 40 to open each lamp cavity therein to the atmosphere.

The receptacle plate 60 is formed at one side with a tongue 74 to which is clinched a ground terminal nut 76. A pair of hinge tabs 80 are bent up from the plate 60, at the nut end thereof, to receive the terminal board assembly 14 which is pivotally mounted on a hinge pin 82 which is passed therethrough.

The terminal board assembly 14 consists of a molded insulation terminal board 78 provided with raised upper and lower partitions 84 and 86, respectively, in the two opposite faces thereof. The upper partitions 84 serve as electrical barriers between three hollow threaded rivets 90 having terminal screws 92, while the lower partitions 86 receive three C-shaped flat spring contacts 88 which are each centrally riveted to the respective hollow threaded rivets 90.

Each spring contact 88 is backed by pairs of relief spaces or sloped notches 94 in the terminal board 78. These notches 94 provide flexure space when the terminal board assembly 14 is swung to press against the lamps 46 which are inserted through apertures 70 in the receptacle plate 60 to match the locations of the bores 36.

The lamps 46 are provided with flanges 72 which make common ground contact with the receptacle plate 60. Base tips 103 of the lamps 46 make contact with the C-shaped springs 88 in pairs.

A finger operated latch in the form of a resilient vertical tab 96 is formed from the receptacle plate 60 at the side opposite the hinge tabs 80. This tab 96 is provided with a camming surface 100, and latching holes 98 which are positioned to receive a pair of latch pins 102 in the end of terminal board 78.

Thus, by selectively energizing one of the terminals or hollow threaded rivets 90, a pair of lamps 46 is caused to glow and transmit a desired color of light through the light piping plastic halves 32 of the body assembly 12 to immerge at the facing transparent disc 52. Because of the dividing partition 34 should one lamp 46 of a pair of spaced lamps 46 be defective, it will be immediately apparent since only one-half of the disc 52 will show light thus warning service personnel that early replacement is required.

Obviously many modifications and variations of the present invention are possible in light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A multiple color signal light, comprising a first body section with a conical concave bezel formed at one end for channeling light and a bore extending as a continuation of the inner diameter of said conical concave bezel through said first body section to the opposite end

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thereof, a second body section having at one end a conical shaped light gathering surface engaging said conical concave bezel and a boss portion extending from said light gathering surface for engaging in said bore of said first body section, said second body section being light transmitting, a barrier element positioned transversely within said second body section and extending the length thereof to divide said second body section including said boss portion longitudinal light transmitting halves, said light transmitting halves having a light turning coating on their external side surface, said second body section having at the end opposite said end containing said boss portion at least one recess on each side of said barrier element and terminating short of said light gathering surface, a lamp positioned within each said recess, transparent means positioned at the end of said boss portion, and a filter element positioned between its respective lamp and said transparent means, whereby illumination from each said lamp is transmitted through said light transmitting halves and displayed at said transparent means at the end of said boss portion.

2. A multiple color signal light, comprising a first body section with a conical concave bezel formed at one end for channeling light and a bore extending as a continuation of the inner diameter of said conical concave bezel through said first body section to the opposite end thereof, a second body section having at one end a conical shaped light gathering surface engaging said conical concave bezel and a boss portion extending from said light gathering surface for engaging in said bore of said first body section, said second body section being light transmitting, a barrier element positioned transversely within said second body section and extending the length thereof to divide said second body section including said boss portion longitudinal light transmitting halves, said light transmitting halves having a light turning coating on their external side surface, said second body section having at the end opposite said end containing said boss portion at least one recess on each side of said barrier element and terminating short of said light gathering surface, a lamp positioned within each said recess, said boss portion, a filter element positioned between its respective lamp and said transparent means, and means including a terminal board secured to said opposite end of said second body section and having terminals parallelly connecting each said lamp with another thereof to make a pair, one lamp of said pair being positioned on the opposite side of said barrier element from the other lamp of said pair, whereby illumination from each said lamp is transmitted through said light transmitting halves and displayed at said transparent means at the end of said boss portion.

3. A multiple color signal light, comprising a first body section with a conical concave bezel formed at one end for channeling light and a bore extending as a continuation of the inner diameter of said conical concave bezel through said first body section to the opposite end thereof, a second body section having at one end a conical shaped

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light gathering surface engaging said conical concave bezel and a boss portion extending from said light gathering surface for engaging in said bore of said first body section, said second body section being light transmitting, a barrier element positioned transversely within said second body section and extending the length thereof to divide said second body section including said boss portion longitudinal light transmitting halves, said light transmitting halves having a light turning coating on their external side surface, said second body section having at the end opposite said end containing said boss portion at least one recess on each side of said barrier element and terminating short of said light gathering surface, a lamp positioned within each said recess, said boss portion, a filter element positioned between its respective lamp and said transparent means, and a terminal board assembly positioned at the opposite end of said second body section, said terminal board assembly including a receptacle plate secured to said opposite end of said second body section and having spaced tabs extending therefrom adjacent opposite sides of said second body section, one said tab having an aperture therein and a terminal board pivotally connected with the other of said spaced tabs and having a latch pin means extending to releasably engage said aperture in said one tab, whereby flexing said one tab disengages said latch pin means from said aperture permitting pivoting of said terminal board, said terminal board having terminals parallelly connecting each said lamp with another thereof to make a pair, one lamp of said pair being positioned on the opposite side of said barrier element from the other lamp of said pair, whereby illumination from each said lamp is transmitted through said light transmitting halves and displayed at said transparent means at the end of said boss portion.

4. The multiple signal light as recited in claim 3 wherein said second body section has a plurality of said recesses on each side of said barrier element.

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