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MULTICOLORED ELECTRIC FLASHLIGHT

Ernest G. De Bow and Henry S. Golland,
Cleveland, Ohio

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This invention relates to new and useful improvements in signal lights, and more particularly those adapted to throw beams of light of different colors, and suitable for use during periods of blackouts.

The primary object of this invention is to provide a signal light which may be readily adjusted to emit light of various selected colors, and which may be operated to flash intermittently to send coded messages, or the like.

It is still another important object of the present invention to take advantage of the various light absorption characteristics of differently colored light-transmitting plates for not only transmitting differently colored beams of light, but to so combine the use of plates having different light absorption characteristics that the signal lamp may be operated to emit a very small quantity of light so that the same will be useful during periods of blackouts.

A meritorious feature of the present invention resides in the arrangement of the variously colored light transmitting plates which are arranged in such a manner that any one or a selected group of the same may be interposed between the light source and the outlet opening of the device so as to be able to control not only the colors of the lights emitted from the signal light but also the amounts thereof.

Another very important feature of the present invention resides in the provision of the blackout slit or opening that is provided in the device to allow the passage of a small amount of light therethrough, such blackout opening being so constructed and arranged with respect to the light source and the colored light-transmitting plates that light will be free to pass through the blackout opening even when the plates are interposed between the light source and the main opening in the device.

Other important features of the present invention reside in the sectional construction of the housing and the arrangement of the electric circuit so that the circuit is interrupted upon opening the housing, together with the manually operable switch for intermittently operating the lamp for signalling purposes and the like.

These, together with various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by the present invention, a preferred embodiment of which has been illustrated by way of example only in the accompanying drawings, wherein:

Figure 1 is a perspective view of the present invention;

Figure 2 is a central vertical sectional view taken through the device shown in Figure 1, this view being taken upon the plane of the section line 2-2 in Figure 4;

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Figure 3 is an elevational view of the invention when the housing is opened and shows the interior thereof; and

Figures 4 and 5 are each an enlarged horizontal sectional view taken upon the plane of the section lines 4-4 and 5-5 of Figure 2, respectively.

Reference is now made more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, and in which the subject matter of the present invention is designated generally at 10.

The signal light 10 comprises a sectional housing formed of a front section 12 that is hingedly secured to a rear section 14, as at 16, and a suitable spring fastener 18 is fixed to the rear section 14 to hold the housing closed. A spring clip 23 is suitably secured to the rear wall 30 of the housing at 32 and is of a type adapted for use as a handle or a belt clip.

A partition wall 20 is positioned in the housing, such wall 20 being provided with side flanges 22 that are frictionally fitted within inwardly turned portions 24 of the front wall 26 of the housing, as clearly shown in Figure 4. Additional means, not shown, may, of course, be provided for detachably securing the partition wall 20 to the front section 12 if desired.

The partition wall 20 is of metal so as to be electrically conductive. However, the front and rear sections 12 and 14 of the housing are formed of opaque, non-electrically conductive material, preferably a plastic material, such as Bakelite, or the like.

The front wall 26 of the housing is provided with an opening 34 in which a lens 36 is secured, and the partition wall 20 is provided with an opening 38 in registry with the opening 34, and secured to the partition wall 20 so as to surround the opening 38 is a metallic frusto-conical reflector 40. The reflector 40 is provided with a central aperture in which is threaded a conventional flashlight bulb 42. It will be noted that the arrangement is such that the reflector 40 and the bulb 42 extend into the rear section 14 of the housing when the latter is closed, and the purpose of such an arrangement will be explained presently.

The arrangement of the front wall 26 and the partition wall 20 together with the flanges 22 of the latter is such as to define a casing in which variously colored light-transmitting plates 44, 46 and 48 are fitted for vertical sliding movement. In order that such plates may be moved selectively, the front wall 26 is provided with vertical slots 50 in which finger posts 52, 54 and 56 are received for vertical sliding movement, it being noted that the posts 52, 54 and 56 are respectively secured to the plates 44, 46 and 48. When the posts 52, 54 and 56 are disposed at the bottom of the slots 50, the upper extremities of the

plates 44, 46 and 48 are disposed below the opening 34 in the front wall 26. However, each of the plates may be moved upwardly by the use of the appropriate post to a position in which such plate is interposed between the bulb or lamp 42 and the entire opening 34. It is to be noted that the plates may be moved individually to the latter mentioned position and, if desired, any number of the same may be moved into such a position simultaneously. In the preferred construction, the plate 44 is colored red, the plate 46 is colored green, and the plate 48 is amber colored. Thus, when only the plate 44 is raised, the light passing through the lens 36 will be colored red, etc. However, when all of the plates are raised, practically no light will pass from the source of light through the lens 36 for the reason that the plates 44 and 46 are of complementary colors so as to absorb substantially all the frequencies of the light emitted by the source of light with the amber colored plate 48 absorbing nearly all of the residual light of such frequencies capable of passing through the red and green colored plates. It will, of course, be appreciated that other selections of colors for the plates may be made such that when all of the same are raised they absorb nearly all of the light that would normally pass through the lens 36.

The side walls 53 of the housing at the top of the housing section 12 is provided with a slit-like opening 60, the purpose of which is to allow a restricted amount of light to pass therethrough for use during blackout periods. It is to be observed that the plates 44, 46 and 48, even when raised to their upper limit as permitted by the length of the slots 59, will, at most, only reduce the light passing through the opening 60 and not cut the same off entirely. Thus, when it is necessary to use the lamp 10 during a blackout, it is only necessary to raise all of the plates 44, 46, and 48 to substantially cut off the light passing through the opening 34.

A pair of L-shaped resilient brackets 62 and 64 are secured to the rear wall 30 of the housing to clamp a dry cell battery 66 therebetween. The bracket 62 includes an integral portion 68 that is contacted by the lamp bulb 42 when the housing is closed, so as to connect one pole of the battery 66 to the lamp bulb 42. A switch 70 is provided to complete the circuit to the lamp bulb 42. Such switch 70 includes an integral contact 72 formed on the bracket 64 and a contact 74 secured to the partition wall 20. A post 76 is journaled through the bottom of the housing section 14, which post 76 is provided with an elliptical contact 78 at its upper end that is disposed between the contacts 72 and 74, the arrangement being such that the post 76 may be rotated to selectively bridge the contacts 72 and 74, as will be evident upon inspection of Figures 2 and 5. The electrical circuit is completed upon closure of the switch 70 by the passage of electricity through the bracket 64, the switch 70, the partition wall 20, the reflector 40, the lamp bulb 42, and the bracket 62. A finger knob 80 is provided at the lower end of the post 76 to facilitate manipulation of the switch 70.

For convenience, a pair of clips 82 are secured to the rear wall of the housing for holding spare lamp bulbs 84.

Since, from the foregoing, the construction and advantage of this device are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications and equivalents will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the exact embodiment shown and described, but all suitable modifications and equivalents may be resorted to which fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. In a signal light, a casing having a light source therein, said casing having an opening therein in alignment with the light source, a plurality of differently colored light-transmitting plates mounted in the casing, said plates being movable in said casing, selective means operative to move said plates into and out of positions interposed between the light source and the opening, at least two of said plates being of complementary colors so that when both of such colored plates are interposed between the light source and the opening substantially no light may pass through the opening from the light source, said casing having a further opening arranged with respect to the light source and of such size that only a minor fraction of the light emitted by the light source will pass therethrough, said further opening extending through said casing between said source and said first opening and transversely thereof so that light from the light source may pass through said further opening when the plates are interposed between the first-mentioned opening and the light source.

2. In a signal light, a casing having a light source therein, said casing having first and second openings therein, said first opening being substantially in register with said light source, said second opening being laterally disposed with respect to the light source whereby a much larger fraction of the light emitted by the light source will pass through the first opening than the second opening, and a plurality of variously colored light-transmitting plates movably mounted in the casing, control means selectively moving each of said plates into and out of a position interposed between the first opening and the light source.

3. The combination of claim 2, wherein at least two of said plates are provided and are of complementary colors.

4. The combination of claim 2, wherein three of said plates are provided and they are colored red, green, and amber, respectively.

5. A signal light comprising a housing which includes a front wall, a rear wall and side walls connecting the peripheries of the front and rear walls, a partition in the housing dividing the interior thereof into front and rear chambers, an electric lamp in the front chamber, said front wall having an opening to permit the passage of light from the lamp, a plurality of variously colored light-transmitting plates mounted in the first chamber for selective movement into and out of a position intermediate the lamp and the opening, one of the side walls having an opening therethrough to allow a limited amount of light therethrough, said plates being incapable of obscuring said opening in said side wall, a battery in the rear chamber, and electric circuit means including an electric switch operatively connecting the battery to the lamp.

6. In a signal lamp, a sectional housing formed of sections hingedly connected together, a par-

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tition in one of the sections defining a chamber in such section, an electric lamp in said chamber, said one section having an opening therein to allow light from the lamp to pass therethrough, a battery in the other section, electric circuit means operatively connecting the battery and the lamp, said circuit means including a lamp mounting on said one section, a resilient conductor mounted on said other section and contacting said lamp whereby the operative connection is interrupted upon opening the housing. 10

7. In a signal lamp, a sectional housing formed of sections hingedly connected together, a partition in one of the sections defining a chamber in such section, an electric lamp in said chamber, said one section having an opening therein to allow light from the lamp to pass there-through, a further opening in said housing to permit the passage of a small fraction of the light emitted by the lamp, means in the chamber for restricting the amount of light passing there-

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through, a battery in the other section, electric circuit means operatively connecting the battery and the lamp, said circuit means including a lamp mounting on said one section, a resilient conductor mounted on said other section and contacting said lamp whereby the operative connection is interrupted upon opening the housing.

ERNEST G. DE BOW.
HENRY S. GOLLAND.

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