May 1, 1962 M. P. DEPUTY 3,032,641

FOG LIGHT FOR ILLUMINATING AIRPORT RUNWAYS

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Fig. 1.

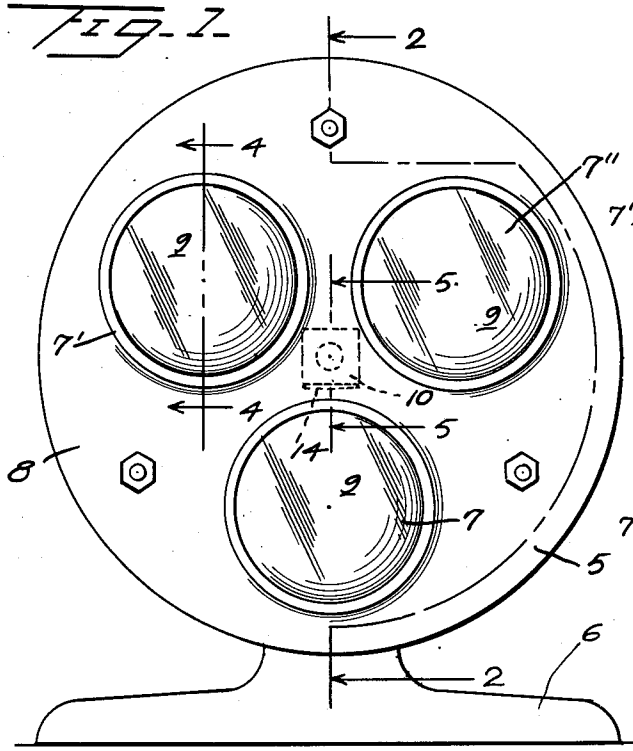


Fig. 2.

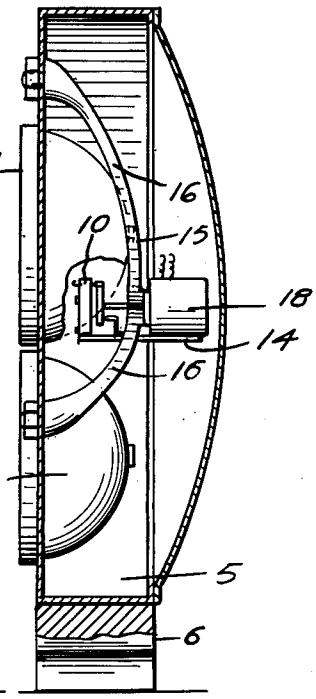


Fig. 3.

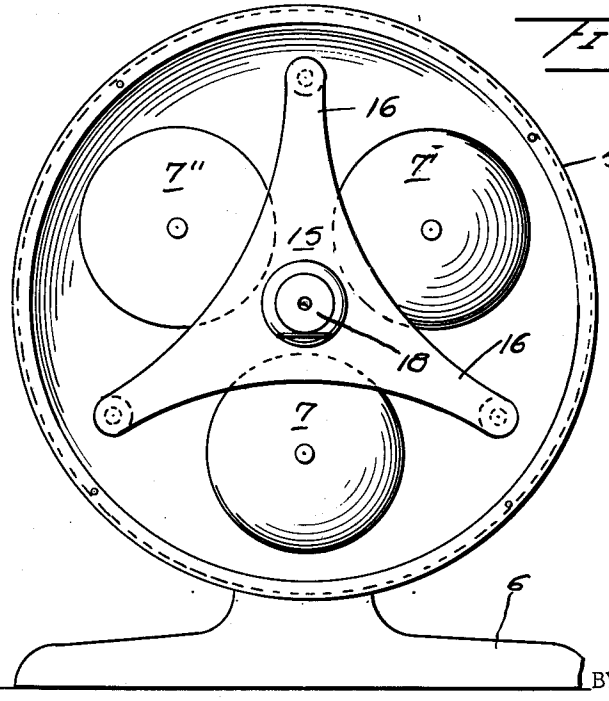
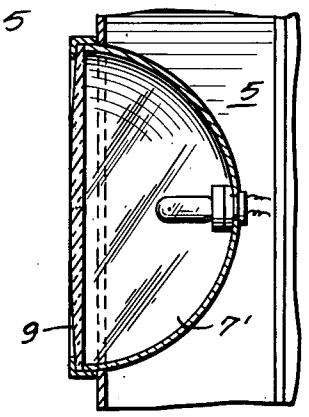


Fig. 4.



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Fig. 5.

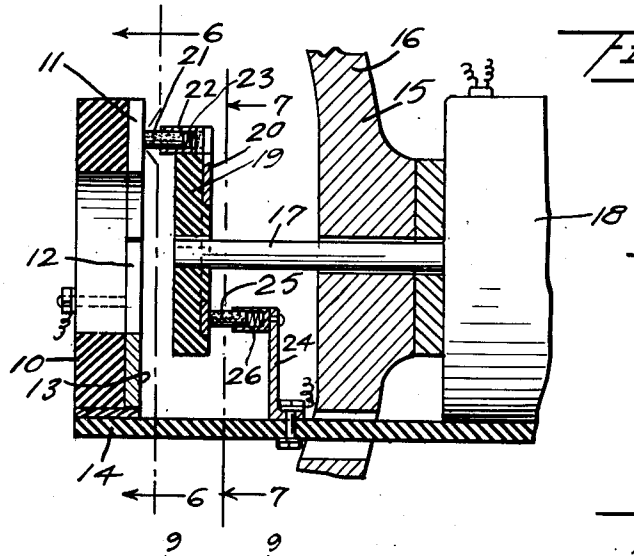


Fig. 9.

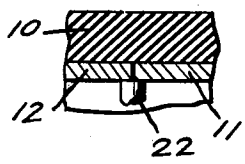
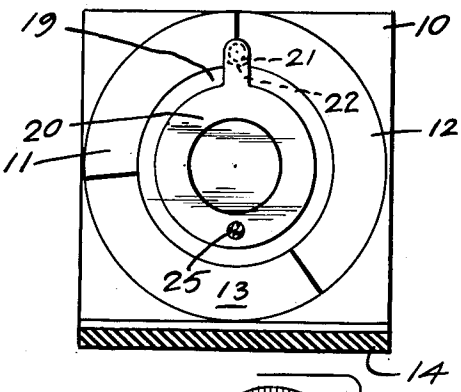


Fig. 7.



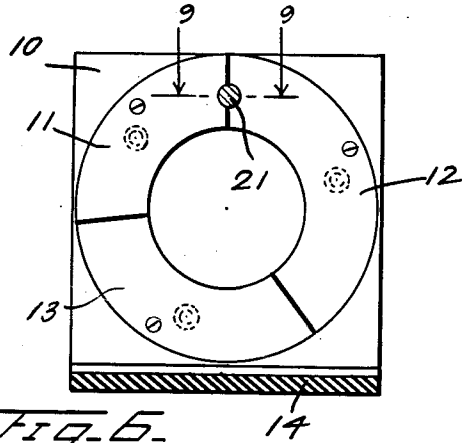


Fig. 6.

Fig. 10.

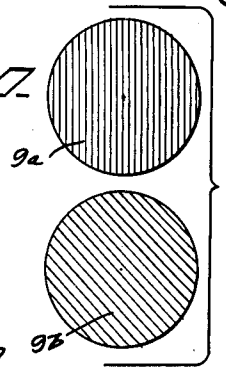
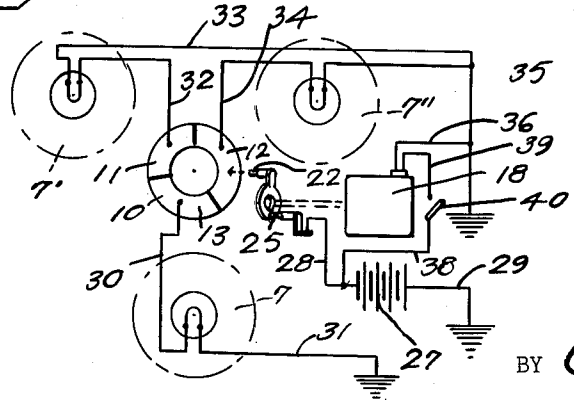


Fig. 8.



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United States Patent Office 3,032,641
Patented May 1, 1962

3,032,641
FOG LIGHT FOR ILLUMINATING AIRPORT RUNWAYS

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Filed June 7, 1960, Ser. No. 34,519
1 Claim. (Cl. 240—1.2)

This invention relates to lighting systems, particularly designed for illuminating the runways of airport landing fields or the like.

An important object of the invention is to provide a light of this character embodying a main focusing light casing in which a plurality of individual lights are mounted, which are so constructed and arranged that the lights will be operated successively as a warning signal, as well as a light for increasing visibility during a fog condition, enabling an airplane pilot to execute a more perfect landing.

Another object of the invention is to provide a series of lights arranged within a single light casing, the lights having lenses of distinctive selected colors successively illuminated, the lights remaining lit for various periods of time, to meet various requirements of use.

A further object of the invention is to provide a system of this character embodying a plurality of fog filtering lights which may be installed along the approaches and runways of landing fields.

A still further object of the invention is to provide a series of fog lights wherein a light remains lit until the succeeding light is lit, thereby insuring the continuous illumination of the runway.

Other and further objects and advantages of this invention will be hereinafter described, and the novel features thereof defined in the appended claim.

Referring to the drawings:

FIGURE 1 is a front elevational view of a fog light, constructed in accordance with the invention.

FIGURE 2 is a vertical sectional view through the fog light, taken on line 2—2 of FIGURE 1.

FIGURE 3 is a rear elevational view of the fog light, illustrating the motor supporting bracket.

FIGURE 4 is a sectional view taken on line 4—4 of FIGURE 1.

FIGURE 5 is a sectional view taken on line 5—5 of FIGURE 1, the view being slightly enlarged.

FIGURE 6 is a sectional view taken on line 6—6 of FIGURE 5.

FIGURE 7 is a sectional view taken on line 7—7 of FIGURE 5.

FIGURE 8 is a diagrammatic view illustrating the wiring system for supplying electric energy to the lights.

FIGURE 9 is a fragmental sectional view illustrating the movable contact member as bridging adjacent contact plates of the contact block.

FIGURE 10 is a view illustrating the lenses of certain of the lights as lined for color.

Referring to the drawings in detail, the main light casing is indicated generally by the reference character 5. This casing is of generally cylindrical shape, has a front cover 8, and is mounted on a base 6 which may be secured in position by any suitable means, not shown.

As better shown by FIGURE 2 of the drawings, the casing supports a plurality of independent lights 7 which, as shown, have the conventional incandescent bulbs therein but which may be of the seal beam type, the lights being so arranged that one light will be clearly distinguishable from the adjacent lights.

The cover 8 forms a part of the light casing, and is provided with a plurality of openings for the reception of the lights 7.

Each light 7 includes a lens 9, and each lens is of a

distinctive color, the color being determined during the fusing of the lens, and may be green, yellow, red or any desirable color to meet the requirements of usage.

As clearly shown by FIGURE 8 of the drawings, a contact ring 10 is provided, which contact ring is supplied with conducting segment 11, 12 and 13, the conducting segment 11 being slightly shorter than the conducting segment 12, while the conducting segment 12 is substantially longer than the conducting segment 13 or adjacent conducting segment.

The stationary contact ring 10 is supported on a bar 14 that forms a part of a bracket 15 which is of a particular structure, and includes a plurality of radiating arms 16 that have their forward ends secured to the cover 8, as better shown by FIGURE 2 of the drawings.

The bracket 15 is provided with a bearing opening through which the shaft 17 of the motor 18 extends, the shaft 17 supporting the rotor 19 of the switch. A circular contact plate 20 is secured to the rotor 19, this circular contact plate being in circuit with a contact member 21 at all times, through the socket 22 and a biasing spring 23 mounted within the socket 22, which normally urges the contact member 21 into engagement with the conducting segments 11, 12 and 13, as the rotor 19 rotates with the motor shaft 17.

The reference character 24 indicates a stationary contact arm which is also mounted on the bar 14, and carries a contact member 25 at its upper end, the contact member 25 being urged into engagement with the circular contact plate 20 by means of the coiled biasing spring 26.

The stationary contact arm 24 is in circuit with a source of electrical energy, which in the present showing is the battery indicated by the reference character 27, through the wire 28, a return ground wire being indicated by the reference character 29.

As shown by FIGURE 8 of the drawings, the light 7 is in circuit with the conducting segment 13, through the wire 30, the return ground wire being indicated by the reference character 31.

The light 7′ is in circuit with the conducting segment 11, through the wire 32 which in turn is connected to a return ground wire 33.

The light 7″ is in circuit with the conducting segment 12, through the wire 34, while the return ground wire for the light 7″ is indicated by the reference character 35, the motor 18 being also in circuit with the ground wire, through the wire 36.

The motor 18 is in circuit with the battery 27, through wire 38 and wire 39, there being provided a manually controlled switch 40 for controlling the circuit through wires 38 and 39 to operate the motor.

It might be further stated that while the conducting segments 11, 12 and 13 are insulated from each other, the contact member 21 is of a diameter so that it will bridge the adjacent ends of the conducting segments in passing from one conducting segment to the other, to the end that the lighting of the runway or landing field will be continuous, although the contact member 21 passes from one conducting segment to another.

It will also be understood that because of the form of the conducting segments, the lights connected or in circuit with the conducting segments will be successively maintained lit for greater lengths of time, and since the lenses of the individual lights are distinctively colored differently, signals will be made by the continuous rotation of the rotor 19 of the switch and the movement of the contact member 21 over the various conducting segments, 10, 11 and 12.

In operation, it is contemplated to position fog lights such as described, along the longitudinal edges of an airport runway or landing field, and since the lenses of the various lights are of distinguishing colors, the colors

selected being designed to dissipate fog and glaring light rays, it will be obvious that the illumination of the runways and airport landing fields will be increased over the usual lighting systems employed in airport landing fields and runways.

While I have shown and described the invention as designed primarily for use in illuminating runways of airports and landing fields, it is to be understood that the lighting system forming the subject matter of the present invention may be effectively employed for illuminating boat wharves, or as a matter of fact any place desired where it is necessary to increase the lighting facilities, particularly during a fog condition.

It might be further stated that while three lights are shown as a component of the present invention, it is to be understood that the number of lights and time limits for the lighting successively of the lights, may be varied, to adapt the device for a particular use.

Having thus described the invention what is claimed is:

A multi-color fog light comprising a casing, a plurality of lights symmetrically positioned in said casing, varied colored lenses over each said lights, a rotary switch mounted in said casing, said switch comprising an annular member having a plurality of closely spaced coplanar arcuate segments of progressively increasing length

mounted thereto, a contact member movable over said arcuate segments, said contact member having a contact surface of greater dimension than the space between said arcuate segments, a motor having a drive shaft operatively connected to said contact for rotating the same, a source of electrical energy, a circuit for each of said lights including the source of electrical energy, a conductor from the source of electrical energy to each of said lights, a conductor from each of said lights to one of said arcuate segments of the rotary switch, a conductor from the contact member of said rotary switch to the source of electrical energy, and a return connection from each light to the source of electrical energy.

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