Oct. 15, 1940. G. C. TICE ET AL 2,218,013

AVIATION BEACON LIGHT

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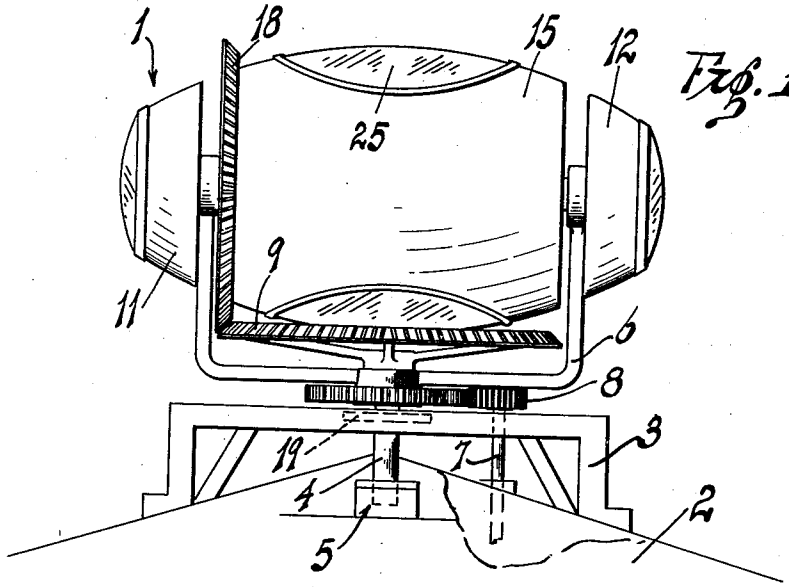


Fig. 1.

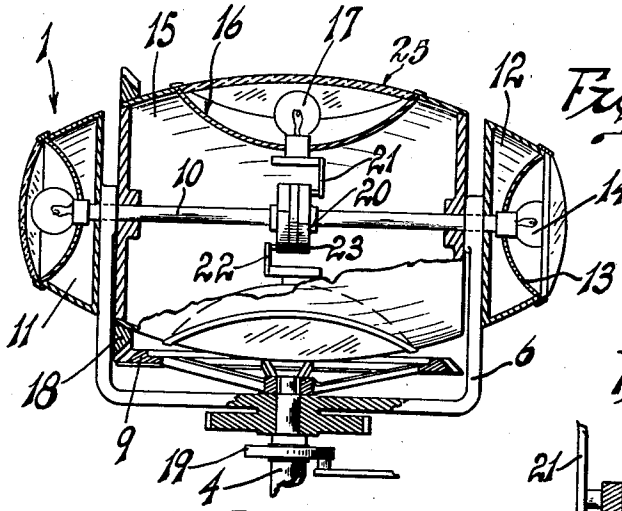


Fig. 2.

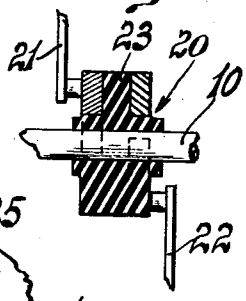


Fig. 3.

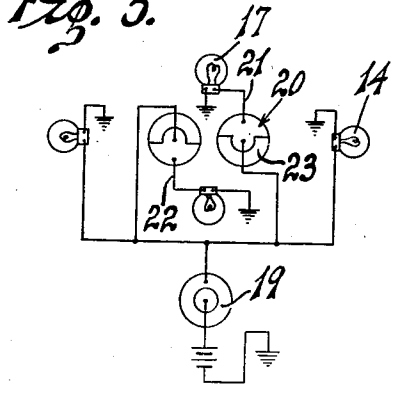


Fig. 5.

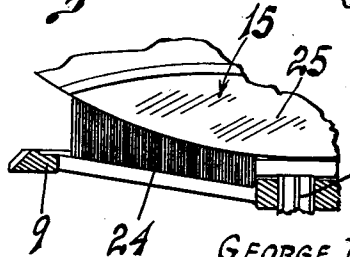


Fig. 4.

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AVIATION BEACON LIGHT

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Los Angeles, Calif.

Application May 18, 1938, Serial No. 208,615

3 Claims. (Cl. 240—1.2)

This invention relates to an aviation beacon light, and particularly one in which there is provided, a moving, substantially vertical, beam of light, whereby an aviator may know that a beacon light is below him.

An object of our invention is to provide an aviation beacon light with both horizontally directed and substantially vertically directed lights are provided, together with a novel means of revolving the lights horizontally and vertically.

Another object of our invention is to provide a beacon light which is simple in construction and effective in operation.

A further object is to provide a beacon light of the character stated in which the vertically directed light is turned off during the ground sweep of the light.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description, and the appended claims.

In the drawing:

Figure 1 is a side elevation of our beacon light.

Figure 2 is a side elevation of our beacon light with parts broken away to show interior construction.

Figure 3 is a fragmentary transverse sectional view of one of the rotary switches.

Figure 4 is a fragmentary transverse sectional view of the driving gear showing the lens brush.

Figure 5 is a diagrammatic electrical wiring view.

Referring more particularly to the drawing, the beacon light 1 is mounted on a tower or house 2, by means of a stand 3 which is suitably attached to the tower or house. A trunnion 4 is fixedly held in the stand 3, and in a bearing 5, which bearing is positioned below the stand.

A yoke 6 is journalled on to the upper end of the trunnion 4 and, therefore, rotates on the trunnion. The yoke is continuously rotated from a shaft 7 which is driven from a suitable source of power not shown. The meshing gears 8 transmit the power from the shaft 7 to the yoke 6, thereby causing the beacon light to continuously rotate. A ring gear 9 is fixedly attached to the upper end of the trunnion 4 and is, therefore, held stationary.

A horizontal tube 10 is mounted in the arms of the yoke 6 and on each end of this tube, we provide the lights, 11—12, each of which lights includes a usual reflector 13, and a light bulb 14. The light bulbs are adjustably mounted in their reflectors, all of which is usual and well known, so that these lights can be properly directed to prevent glare on the earth surface.

The light bulbs 14 burn continuously and provide horizontal beams of light which sweep over the ground, for the purpose of indicating a port, or a lane of travel for the airplanes.

A drum 15 is journalled on the tube 10 between the arms of the yoke 6. This drum is provided with two or more reflectors 16, and in each reflector, a light bulb 17 is mounted. A gear 18 meshes with the ring gear 9, and as the yoke 6 is rotated, the gear 18 will move over the ring gear 9, thus rotating the drum 15, and thereby causing a beam of light to be directed upwardly, or in a substantially vertical plane. As the drum 15 rotates with its lights 17, it is obvious that as these lights are directed downwardly towards the ground, it would be desirable to shield or turn the lights off so as not to interfere with travel on the ground.

We, therefore, provide a means of turning these lights off during their ground sweep, substantially as follows:

Electrical current is fed to a ring switch or commutator 19, which rotates with the yoke 6. Electrical wires then pass from the commutator 19 to each of the lights 14. The return current may be grounded if desired. A rotary switch 20 is mounted on the tube 10, and this switch is engaged by the brushes 21—22, which convey the current to each of the lights 17. The upper portion of the switch 20 is formed of a conducting material, while the lower part of the switch is formed of an insulating material, shown at 23.

Thus, as the brushes 21 rotate over the surface of the switch 20, the lights 17 will be lit during their upward sweep, and will be turned off during their downward sweep.

It will be evident from the foregoing description that we provide a beacon light with horizontally directed beams rotating in a horizontal plane, and a substantially vertically directed beam which moves in a substantially vertical plane.

It is obvious that the lights 17 may be arranged at an angle greater or less than ninety degrees from the lights 14, as it is found desirable.

If desired, a brush 24 may be mounted on the ring gear 9 for the purpose of brushing the lenses 25, which cover the light 17.

Having described our invention, we claim:

1. An aviation beacon light, comprising a stand, a trunnion mounted in the stand, a yoke journalled in the trunnion, drive means extending to the yoke, whereby the yoke is continuously

rotated, horizontally directed lights on the yoke, a tube mounted in the yoke, a drum journalled on the tube, drive means on the drum whereby the drum is continuously rotated, lights in the drum, said lights being directed in a substantially vertical plane, switch means in the drum, said switch means being electrically connected to the lights in the drum, whereby said lights are turned off during the ground sweep.

2. An aviation beacon light comprising a stand, a yoke, means journaling the yoke on a vertical axis, drive means extending to the yoke whereby the yoke is continuously rotated, a drum, means journaling the drum in the yoke on a substantially horizontal axis, drive means extending to the drum whereby the drum is continuously rotated, lights in the drum, said lights being directed in a substantially vertical plane, and a horizontally directed light positioned adjacent the end of the drum and mounted in the yoke.

3. An aviation beacon light comprising a stand, a yoke, means journaling the yoke on a vertical axis, drive means extending to the yoke whereby the yoke is continuously rotated, a drum, means journaling the drum in the yoke on a substantially horizontal axis, drive means extending to the drum whereby the drum is continuously rotated, lights in the drum, said lights being directed in a substantially vertical plane, and a pair of horizontally directed lights, there being one light arranged adjacent each end of the drum.

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