June 19, 1945. J. B. BARTOW 2,378,823

LIGHT-RESTRICTING DEVICE

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FIG. 1.

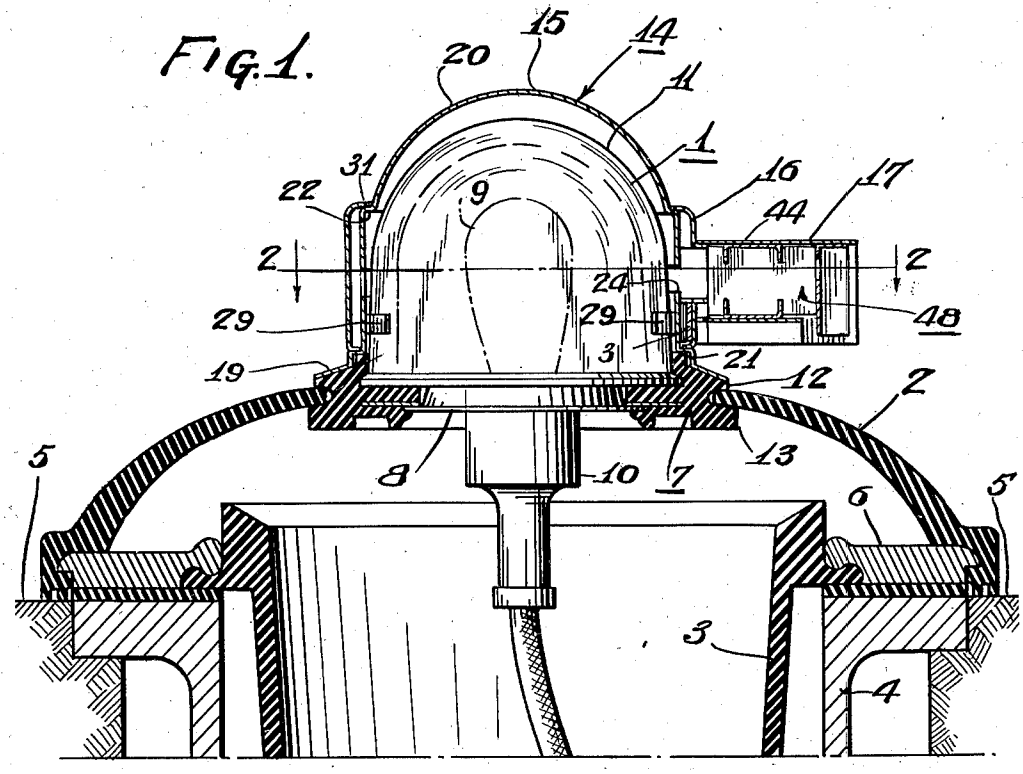
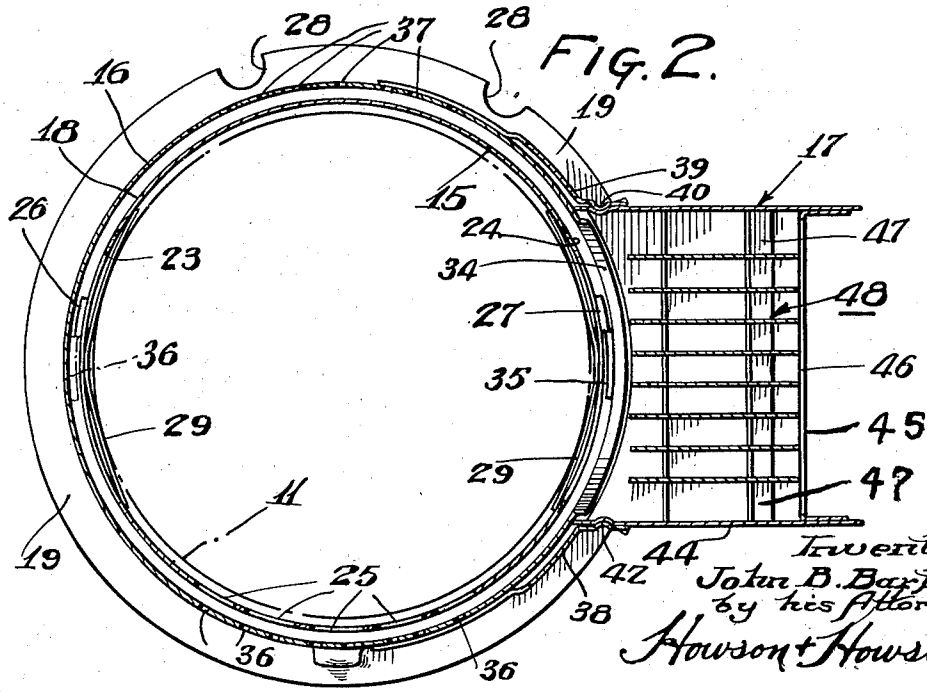


FIG. 2.



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FIG. 3.

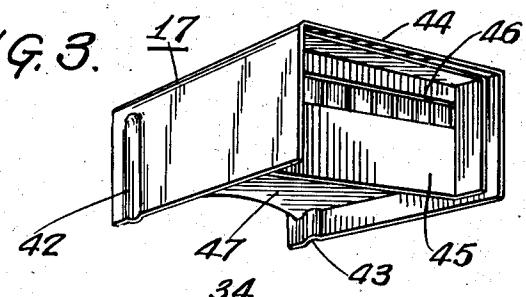


FIG. 4.

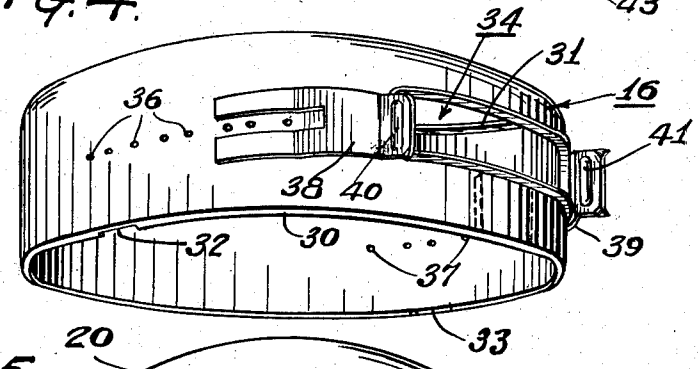


FIG. 5.

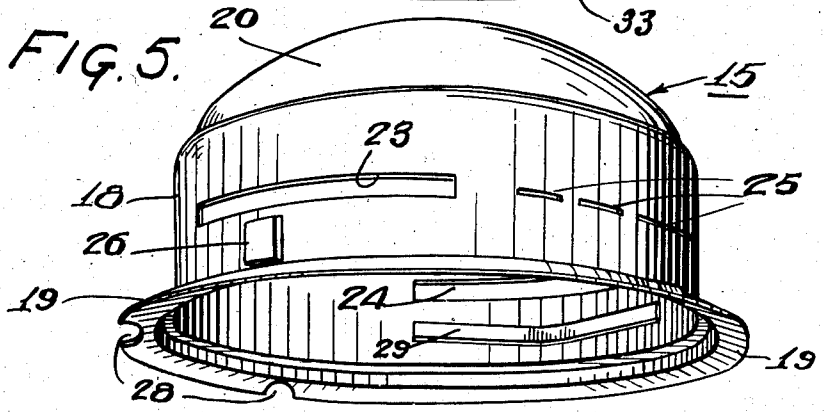
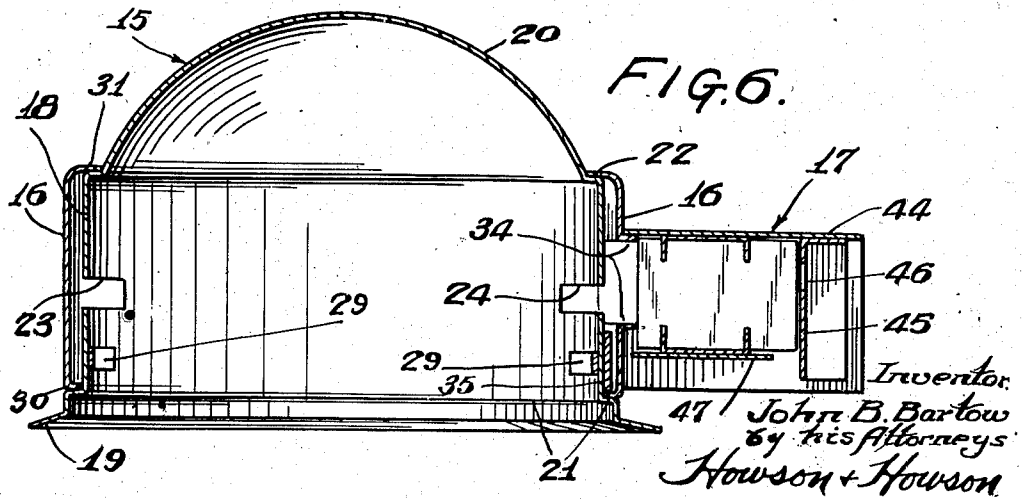


FIG. 6.



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UNITED STATES PATENT OFFICE

2,378,823

LIGHT-RESTRICTING DEVICE

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Application October 23, 1943, Serial No. 507,446

5 Claims. (Cl. 240—1.2)

This invention relates to a novel light-restricting device for use with a lamp unit, and more particularly to a device for use with a ground lamp unit mounted for depressive detachment from its support, such as that disclosed and claimed in U. S. Patent No. 2,332,362, granted October 19, 1943.

The principal object of this invention is to provide a simple and efficient light-restricting device having the structural features described hereinafter.

Another object of the invention is to provide a novel light-restricting device for use with a lamp unit mounting of the character disclosed in the aforementioned patent.

A further object of the invention is to provide a light-restricting device comprising a hood structure and a visor removably secured thereto so as to be detachable by a jarring force, whereby the device is particularly adapted for use with a lamp unit mounting of the above-mentoneid character, as described more fully hereinafter.

A still further object of the invention is to provide a light-restricting device of the stated character whch is adjustable to permit light projection in a selected one of a plurality of directions.

A more specific object of the invention is to provide a device of this character, comprising an opaque hood adapted to fit over a lamp unit and having angularly spaced openings or windows therein, an opaque collar or ring rotataby mounted on the hood and having an opening or window which is alignable with a selected one of the first-mentioned openings, and a visor removably secured to the said collar adjacent its said opening so as to be detachable from the collar by a jarring force.

Other objects and features of the invention will be apparent from the following detailed description with reference to the accompanying drawings, in which

Fig. 1 is a cross-sectional view of a lamp unit mounting according to the aforementioned patent, having the device of the present invention cooperatively associated therewith;

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1;

Figs. 3 to 5 are perspective views, respectively, of the elements forming the device of the present invention; and

Fig. 6 is a cross-sectional view of the assembled device.

Referring first to Fig. 1 of the drawings, there is shown a ground lamp unit designated generally by reference character 1 which is detachably supported by a resilient (e. g. rubber) dome-shaped or concavo-convex member 2 which, in turn, is mounted in association with a resilient sump 3 arranged to receive the lamp unit 1 in the event of its depressive detachment from the resilient support member 2. Such a lamp mounting is disclosed and claimed in the aforementioned patent, and it is particularly intended for use as a runway or other marker on an airfield or air-port, but is capable of other uses, for example it may be used as a marker on streets or highways.

Considering the lamp mounting in greater detail, there is provided a metal sump 4, which is adapted to be disposed below the ground level indicated at 5, and which serves to house any current supply equipment, such as a transformer, which may be employed. A retaining ring 6 serves to hold the inner resilient sump 3 in the manner shown, and also serves to retain the resilient mounting member 2 in place. The lamp unit 1 comprises a resilient support member or ring 7 to which is affixed a plate 8 carrying the lamp 9 and its socket 10. The support member 7 also carries a dome-shaped lens or lamp enclosure 11.

The lamp unit assembly is detachably mounted on the resilient support member 2 by means of annular lips 12 and 13 formed on member 7, which embrace the inner edge of the annulus 2. The interfitting portions of members 2 and 7 are so formed that the ring 7 may be inserted from the bottom, and it is readily detachable in this direction. To this end, the lip 12 is relatively thin as illustrated. The purpose of this to enable the entire lamp assembly to detach itself and fall into the resilient sump 3 in the event that the lamp unit is struck by a vehicle wheel or is subjected to any other force acting generally downward. In this manner, the lamp unit is preserved against injury, as it merely falls into the resilient sump below the ground level, and its fall is cushioned by the resilience of the receiving sump.

The structure thus far described is that disclosed and claimed in the aforementioned patent. It is believed that the foregoing description will suffice for the present purpose and will enable a clear understanding of the present invention now to be described. Any further details of the lamp unit mounting which may be desired may be obtained by reference to the said patent.

By the present invention, there is provided a

novel light-restricting device which is particularly intended for use with the lamp unit mounting shown in Fig. 1, and which may be used for example, for dim-out purposes. As shown in Fig. 1, the device of the present invention, designated generally by reference character 14, is adapted to fit over the lamp unit 1 and comprises essentially an opaque hood 15, a rotatable opaque collar or ring 16 thereon, and an opaque visor 17 detachably carried by the collar 16.

The device of the present invention may be more clearly understood by reference to Figs. 2 to 6. The hood 15 is clearly shown in Fig. 5 and comprises a cylindrical portion 18, a lower flange portion 19, and an upper dome portion 20. Further, the hood is formed so as to provide shoulder portions 21 and 22 (see Fig. 6) to seat the rotatable collar or ring 16, as hereinafter described. A pair of diametrically spaced elongated windows 23 and 24 are provided in the cylindrical portion 18. These windows may simply comprise slot-like openings, as illustrated. In addition, the hood is preferably provided with a series of small slit openings 25, the purpose of which will be explained presently. A pair of spaced lugs 26 and 27 (see Figs. 2 and 5) are also provided on the cylindrical portion 18 of the hood. As shown in Fig. 1, the hood is adapted to seat upon member 7 of the lamp unit or assembly 1, and in order to fix the position of the hood in a predetermined position and to prevent its rotation, there are preferably provided one or more recesses 28 in its seating flange 19, and these recesses may cooperate with corresponding projections on member 7 (not visible). It is essential, of course, that the hood be fixed in position in order that the light will be projected in the desired direction. Furthermore, the hood is preferably provided on its inside with resilient spring elements 29, which snugly engage the lamp enclosure or dome 11, as shown in Fig. 1.

Referring particularly to Figs. 4 and 6, the collar or ring 16 is adapted to fit over the cylindrical portion 18 of the hood and has inwardly-extending flanges 30 and 31 at its bottom and top portions, respectively, which seat upon the shoulders 21 and 22, respectively, of the hood. A pair of recesses 32 and 33 in the lower flange 30 are located in correspondence to the lugs 26 and 27 on the hood, so that the collar 16 may be placed on the hood 15 by aligning the recesses 32—33 with the lugs 26—27. Thereafter, the collar 16 may be rotated and the lugs 26—27 cooperate with the flange 30 to retain the collar 16 on the hood 15.

The collar 16 is provided with a window or opening 34 which may be brought into alignment with either of the openings 23 and 24 in the hood, by rotation of the collar when it is in place on the hood. A lug or stop 35 (see Fig. 2) is provided on the inside of collar 16 below the window or opening 34. This lug or stop serves cooperatively with lugs 26—27 on hood 15 to fix the position of the collar in either of its operative positions with its window 34 in alignment with one or the other of the hood windows 23 and 24. Thus in Fig. 2, the collar is in such position that the lug or stop 35 abuts against the lug 27, and the proper position of the collar is thus established. It will be appreciated, of course, that the lug or stop elements 26—27 and 35 must be properly located in relation to one another to establish the proper positions of the rotatable collar relative to the fixed hood.

The collar 16 is also preferably provided with rows of small apertures 36 and 37 which are selectively aligned with the openings 25 in the hood when the collar is in either one of its operative positions.

The collar 16 carries a pair of resilient fingers 38—39 which extend outward on opposite sides of the window 34. These elements may comprise resilient strips affixed to the collar, as shown in Fig. 4. The extending fingers project outward only a small distance and they are provided with inward indentations 40—41. The purpose of these fingers is to removably hold the visor 17 which has indented portions 42—43 to receive the indentations of the said fingers. Thus when the indented portions of the visor are inserted between the resilient fingers 38 and 39, the visor is held in place on the collar 16. It will be noted, however, that by virtue of the manner in which the visor is removably held, it is readily detachable from the collar by any appreciable jarring force.

The purpose of the visor is, of course, to control the emitted light—particularly to prevent upward projection of the light. The visor preferably comprises an inverted U-shaped shell or cover 44, a front wall 45 secured therein and having an elongated window or opening 46, a bottom wall 47 (see Fig. 6) also secured within the shell or cover, and a louvre structure 48 (see Fig. 2) disposed within the aforesaid elements. However, the particular structure of the visor is relatively unimportant, as this member may take any form desired as long as it serves its intended function.

From the foregoing description, it will be seen that the hood 15 and the collar 16 cooperatively form a two-part hood structure, one part of which is adjustable relative to the other part, and the visor is detachably carried by the composite hood structure. If it were desired to project the light in one direction only, the hood structure could be formed as a single part.

Referring now to the use and operation of the light-restricting device in conjunction with the lamp unit mounting of Fig. 1, the assembled device is mounted on the lamp unit as previously described and as shown in Fig. 1, with the hood 15 properly located with reference to the directions in which it is desired to project light. The collar 16, carrying the visor 17, is then rotated to one of its operative positions, for example as shown in Fig. 2, to project light in one direction. In the position of the collar shown in Figs. 1 and 2, the visor is located at the right of the device, as viewed, and a limited amount of light from the lamp is projected through the visor to the right. In this condition of the device, the small apertures 36 in collar 16 are adjacent the apertures 25 of the hood 15, and therefore a small quantity of light is emitted on one side through the said apertures. This is desirable in the case of runway lights on an air-field, but of course the auxiliary apertures may be eliminated if desired.

When it is desired to project light in the opposite direction, the collar 16 is rotated clockwise, as viewed in Fig. 2, until the stop 35 abuts the stop 26. As previously described, this places the window or opening of collar 16 in alignment with the window on the opposite side of the hood 15. Since the collar 16 will have been rotated through approximately 180°, the small apertures 37 will now be aligned with the apertures 25 to emit a small quantity of auxiliary light on the same side of the device as before.

Regardless of the position of the collar 16 and the visor 17, if a vehicle wheel or other object should strike the device, the lamp unit and the

light-restricting device mounted thereon will be depressed, owing to the resiliency of the support member 2, and the lamp unit will be detached from member 2 as previously described. Due to the manner in which the visor 17 is held, it will be detached or knocked loose from the device, thus permitting the lamp unit and the hood structure thereon to pass downward through the opening in member 2 into the sump 3. Were it not for the manner in which the visor is mounted which permits ready detachment of the same, the device would interfere with the depressive detachment of the lamp unit and the passage of the same downward into the resilient sump. Therefore the manner of attachment of the visor is an important feature of the device.

It will be seen that the invention provides a novel device which is particularly useful in conjunction with a lamp mounting of the character illustrated. It will be understood, however, that the invention is not limited to any particular use but may be employed in any instance where it finds useful application.

The parts of the light-restricting device may be constructed of any suitable material. Preferably however, they are formed of sheet metal which readily lends itself to stamping and cutting operations.

It will be understood, of course, that the invention is not limited to the specific form of the device illustrated but is capable of various modifications within the scope of the appended claims.

I claim:

1. A light-restricting device, comprising an opaque hood adapted to fit over a lamp unit, said hood having a peripheral wall with angularly spaced openings therein, an opaque collar rotatably mounted on said hood and encircling said peripheral wall, said collar having an opening therein alignable with a selected one of the openings in said wall by rotation of said collar, a pair of resilient fingers on said collar on opposite sides of its said opening, and a visor removably held by said fingers so as to be readily detachable from the collar.

2. A light-restricting device for use with a ground lamp unit detachably mounted within an opening of a support member and adapted to pass through said opening, said device comprising an opaque hood structure adapted to fit over said lamp unit and dimensioned to pass through said opening while remaining on said lamp unit, said hood structure having a light-emitting window therein, and a visor removably secured to said hood structure adjacent said window and detachable from the hood structure upon application of a force depressing said lamp unit, whereby the hood-covered lamp unit is permitted to pass through said opening in response to such a force.

3. A light-restricting device for use with a ground lamp unit detachably mounted within an opening of a support member and adapted to pass through said opening, said device comprising an opaque hood structure adapted to fit over said lamp unit and dimensioned to pass through said opening while remaining on said lamp unit, said hood structure having a light-emitting window therein, a pair of resilient fingers extending horizontally from said hood structure on opposite sides of said window, said fingers being of short length and being wholly within the greatest horizontal dimension of the hood structure so as not to obstruct the latter's passage through said opening, and a visor removably held by said fingers adjacent said window so as to be detachable from the hood structure upon application of a force depressing said lamp unit, whereby the hood-covered lamp unit is permitted to pass through said opening in response to such a force.

4. A light-restricting device for use with a ground lamp unit detachably mounted within an opening of a support member and adapted to pass through said opening, said device comprising an opaque hood adapted to fit over said lamp unit and dimensioned to pass through said opening while remaining on said lamp unit, said hood having a peripheral wall with angularly spaced openings therein, an opaque collar rotatably mounted on said hood and encircling said peripheral wall, said collar having an opening therein alignable with a selected one of said last-named openings by rotation of the collar, a visor, and means adapted to secure said visor to said collar so that the visor is detachable from the collar upon application of a force depressing said lamp unit, whereby the hood-covered lamp unit is permitted to pass through the first-mentioned opening in response to such a force.

5. A light-restricting device for use with a ground lamp unit detachably mounted within an opening of a support member and adapted to pass through said opening, said device comprising an opaque hood adapted to fit over said lamp unit and dimensioned to pass through said opening while remaining on said lamp unit, said hood having a peripheral wall with angularly spaced openings therein, an opaque collar rotatably mounted on said hood and encircling said peripheral wall, said collar having an opening therein alignable with a selected one of said last-named openings by rotation of the collar, a pair of resilient fingers extending horizontally from said collar on opposite sides of its said opening, said fingers being of short length and being wholly within the greatest horizontal dimension of the hood structure so as not to obstruct the latter's passage through the first-mentioned opening, and a visor removably held by said fingers so as to be detachable from the collar upon application of a force depressing said lamp unit, whereby the hood-covered lamp unit is permitted to pass through the first-mentioned opening in response to such a force.

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