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Brudy et al.

[11] **3,781,538**

[45] **Dec. 25, 1973**

[54] **EMERGENCY WARNING LAMP**

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[52] **U.S. Cl.** ..... **240/49,** 240/7.1 R, 340/50

[51] **Int. Cl.** **F21m 7/00**

[58] **Field of Search** ..... 240/49, 7.35, 8.18, 240/8.2, 8.3, 41.55, 151, 152, 7.1 R; 340/50

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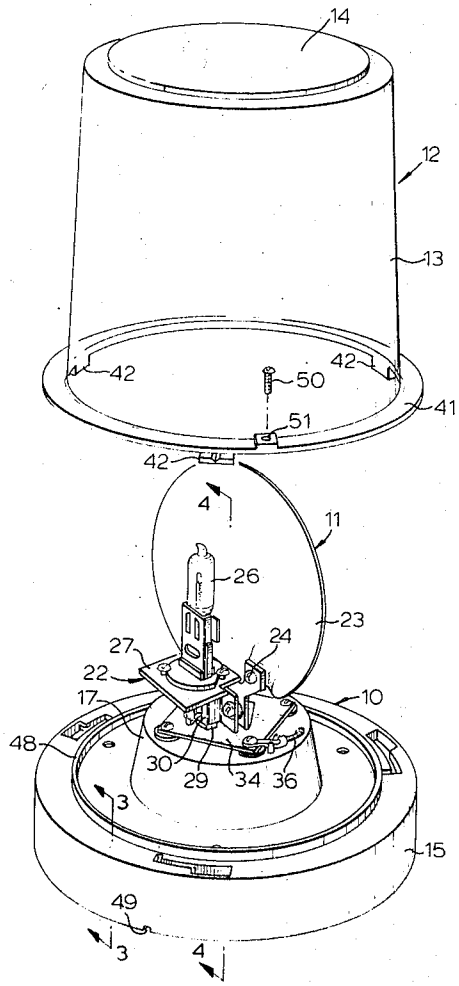
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[57] **ABSTRACT**

An emergency warning lamp comprising a base on which a motor is mounted with the shaft thereof extending vertically. A lamp and reflector assembly are mounted on the shaft. In addition, a brush assembly is mounted for rotation with the shaft. Electrical connection is made between the brush and the lamp, the brush engaging a contact plate on the base. Novel means are provided for holding a lens on the base such that water will not enter and adversely affect the operation of the lamp. Upon rotation of the motor, the lamp and reflector assembly are rotated.

12 Claims, 9 Drawing Figures



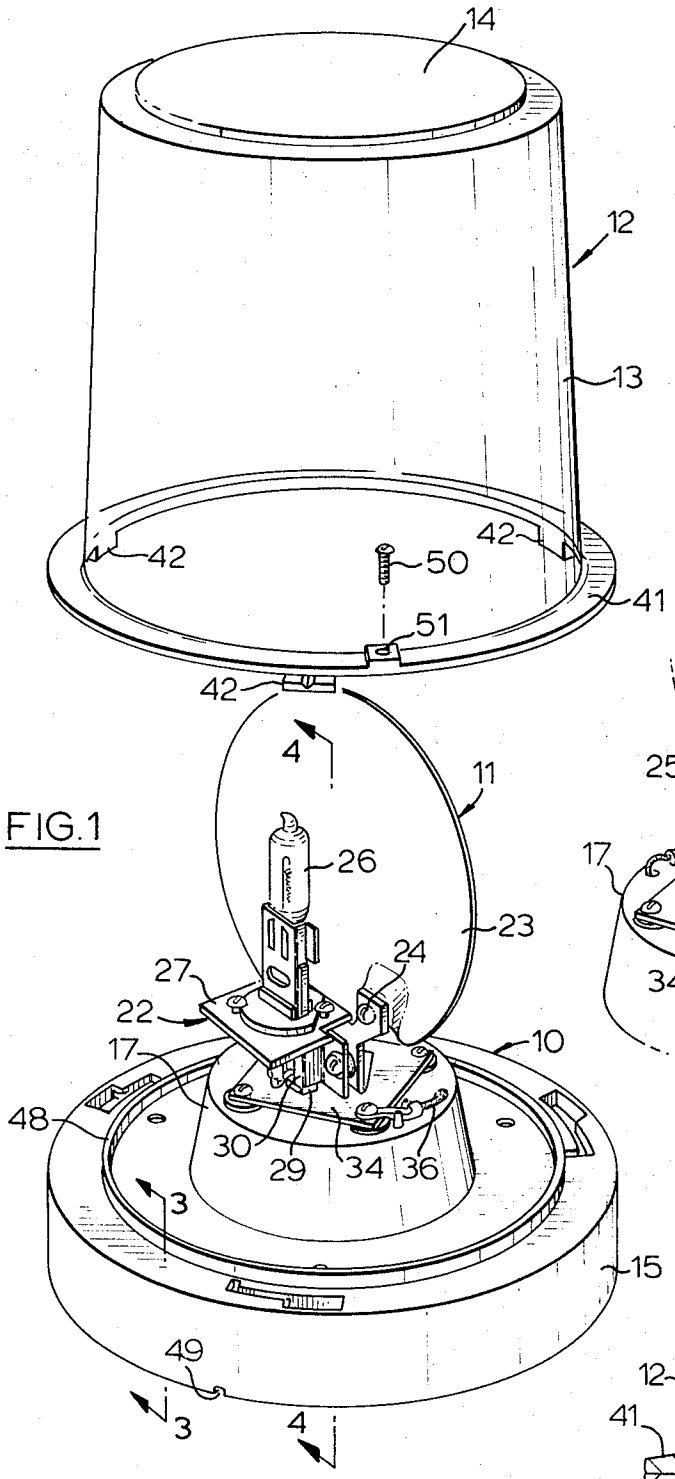


FIG. 1

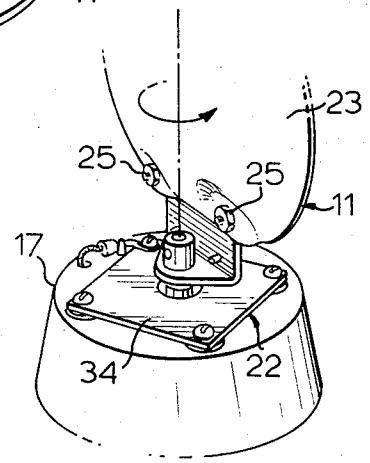


FIG. 2

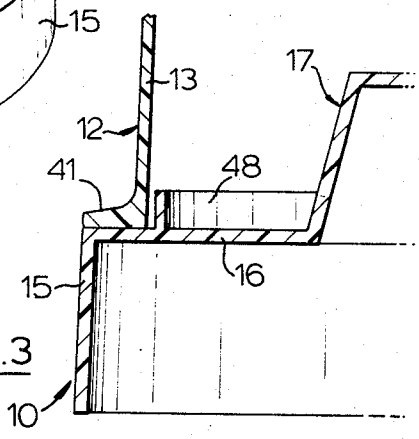


FIG. 3

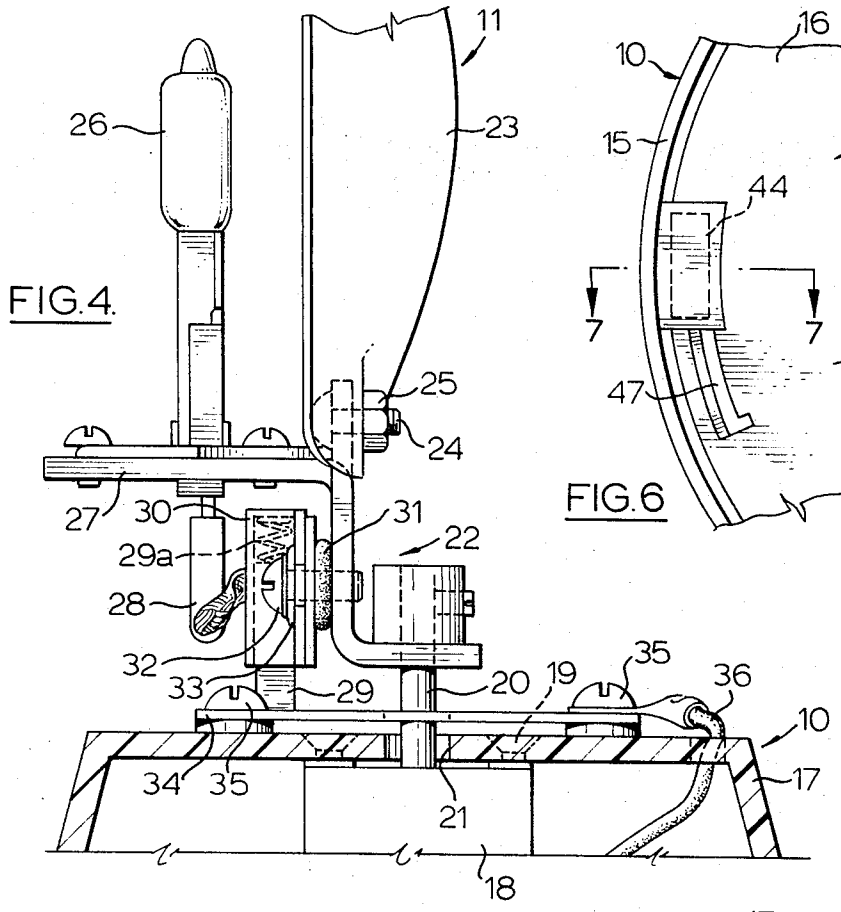


FIG.4.

FIG.6

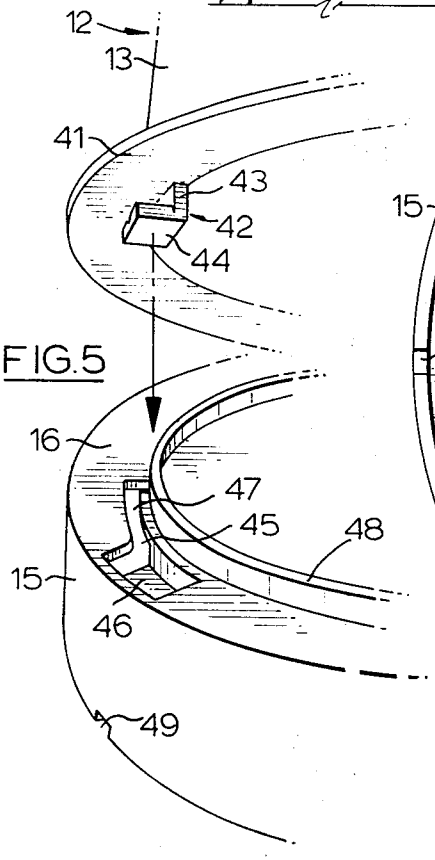


FIG.5

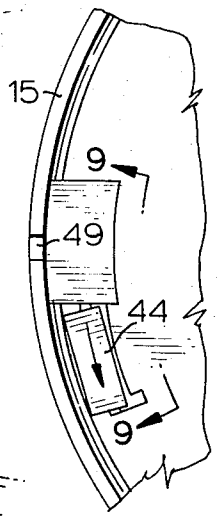


FIG.8

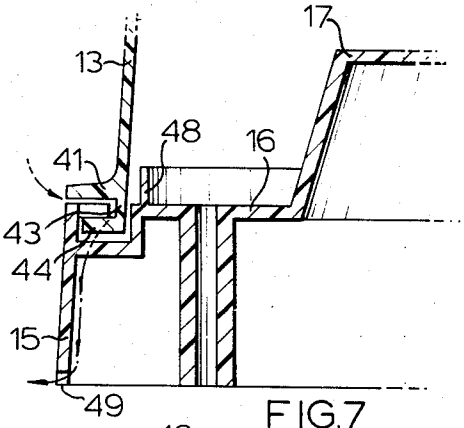


FIG.7

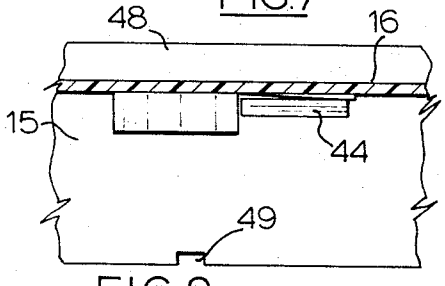


FIG.9

EMERGENCY WARNING LAMP

This invention relates to emergency warning lamps.

BACKGROUND OF THE INVENTION

The common type of emergency warning device used on public service vehicles and the like is a rotating lamp and reflector.

Among the objects of the invention are to provide a low-cost rotating warning lamp which is simple to construct, relatively inexpensive to service, and avoids the need for expensive seals and wiring.

SUMMARY OF THE INVENTION

The emergency warning lamp embodying the invention comprises a base on which a motor is mounted with the shaft thereof extending vertically. A lamp and reflector assembly are mounted on said shaft. In addition, a brush assembly is mounted for rotation with the shaft. Electrical connection is made between the brush and the lamp, the brush engaging a contact plate on the base. Novel means are provided for holding a lens on the base such that water will not enter and adversely affect the operation of the lamp. Upon rotation of the motor, the lamp and reflector assembly are rotated.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of the emergency warning lamp embodying the invention.

FIG. 2 is a fragmentary view similar to FIG. 1 showing the parts in a different operative position.

FIG. 3 is a fragmentary sectional view taken along the line 3—3 in FIG. 1.

FIG. 4 is a vertical sectional view taken along the line 4—4 in FIG. 1.

FIG. 5 is a fragmentary exploded view of a portion of the lamp shown in FIG. 1.

FIG. 6 is a fragmentary bottom plan view of another portion.

FIG. 7 is a fragmentary sectional view taken along the line 7—7 in FIG. 6.

FIG. 8 is a fragmentary plan view similar to FIG. 6 showing the parts in a different position.

FIG. 9 is a fragmentary sectional view taken along the line 9—9 in FIG. 8.

DESCRIPTION

Referring to FIG. 1, the emergency warning lamp embodying the invention comprises a base 10 made of plastic such as acrylonitrile butadiene styrene which is adapted to be mounted on the roof of a vehicle or the like. A bulb and reflector assembly 11 is rotatably mounted on the base 10 as presently described and a transparent lens 12 having a generally cylindrical side wall 13 and a closed top wall 14 is telescoped over the lamp and reflector assembly 11. The lens 12 can be colored in accordance with the requirements of the particular public vehicle with which the emergency warning lamp is to be used.

Referring to FIG. 4, the base 10 includes a peripheral side wall 15, a transverse top wall 16 with a central raised portion 17. An electric gear motor 18 is mounted on the underside of the central portion 17 by screws 19 and has a shaft 20 projecting upwardly through an opening 21 in the raised portion 17 of base 10. A bracket 22 is fixed to the shaft 20 and provides an electrical connection thereto, as presently described. The bracket 22 forms a part of the lamp and reflector assembly 11. The reflector 23 is mounted on the bracket 22 by bolts 24 and nuts 25. The lamp 26 which is preferably of the quartz type is mounted on a horizontal portion 27 of the bracket 22 and has one lead thereof electrically connected to the bracket and the other extending downwardly. A connector 28 extends from the other lead of the lamp 26 to a brush 29 that is contained within a housing 30 mounted on the bracket 22 but electrically insulated therefrom by an insulator 31. Screws 32 extend through the brush housing 30 into the bracket 22 but are electrically insulated therefrom by the insulator 31 and a resilient washer 33.

Brush 29 is yieldingly urged downwardly by a spring 29a into contact with an electrical contact plate 34, made of brass or the like, that is mounted by screws 35 on the central portion 17 of the base. A lead 36 extends from one of the screws 35 to a lead of the electric motor 18 to provide one leg of the circuit. The other leg of the circuit to the lamp is achieved through the shaft 20 which is grounded by lead 37.

Referring to FIGS. 1, 5 and 7, the lens 12 includes an outwardly extending peripheral flange 41 that extends from the lower end of the wall 13 and engages the upper surface of the transverse wall 16 of the base at its periphery. In addition, integrally molded hook members 42 having a vertical portion 43 and horizontal portion 44 are provided and extend downwardly from the flange 41 at circumferentially spaced points. The base 10 includes circumferentially spaced elongated slots 45 each of which have a wide portion 46 and narrow portion 47 so that the lens 12 can be engaged with the base 10 by moving the hook members 42 downwardly through the wide portions 46 and then rotating the lens 12 relative to the base 10 (from the position shown in FIG. 8 to the position shown in FIG. 6) to lock the lens 12 on the base 10. It will be noted that there is no gasket between the lens 12 and the base 10. Any water such as rain and the like entering laterally between the flange 41 and the wall 16 is prevented from moving within the housing by an integral upstanding annular wall 48 extending from the wall 16 within the wall 13 of the lens. The base 10 includes drain passages 49 in wall 15 so that the water that moves downwardly is permitted to pass outwardly.

It has been found that the aforementioned construction effectively holds the lens on the base against the action of wind, rain and the elements as well as from rocks and other objects. In order to discourage vandals and the like from removing the lens 12, a screw 50 extends through an opening 51 in the flange 41 and is threaded into the base 10.

We claim:

1. In an emergency warning lamp, the combination comprising

a base,

an electric motor mounted on said base,

said motor having a shaft projecting therefrom,

a lamp and reflector assembly,

means for mounting said lamp and reflector assembly on said shaft such that there is an electrical connection to said shaft,

a lens on said base surrounding said lamp and reflector assembly,

said lens and base having complementary annular contacting surfaces,

interengaging means between said lens and said base comprising slot and flange means,
and an upstanding annular wall extending from said base within said lens to provide a water wall such that liquid cannot move transversely between said lens and said base into said lens.

2. The combination set forth in claim **1** including drain openings in said base permitting liquid such as water to be drained from said base in the event it passes between said lens and said base toward said annular wall.

3. The combination set forth in claim **2** wherein said interengaging means between said base and said lens comprises circumferentially spaced slots in said base,
said lens having downwardly and outwardly extending hook members engaging said slots,
said slots having a wide portion to permit axial movement of the hook members downwardly onto said base,
and a narrow, circumferential and transverse portion to permit the outwardly extending portion of said hook portions to move upon rotation of said lens with respect to said base beneath said transverse wall of said base.

4. The combination set forth in claim **3** including releasable means extending between said flange on said lens and said base for locking said lens on said base.

5. In an emergency warning lamp, the combination comprising
a base,
an electric motor mounted on said base,
said motor having a shaft projecting therefrom,
said motor shaft being electrically connected to said motor casing,
a lamp and reflector assembly,
means for electrically and mechanically mounting said lamp and reflector assembly on said shaft such that there is an electrical connection to said shaft,
an electrical contact plate on said base insulated from said shaft,
and brush means electrically insulated from and mounted on said shaft for rotation therewith such that an electrical circuit may be completed from said shaft to said lamp and through said brush means to said contact member,
said electrical motor including a stator,
electrical leads to said stator,
one of said leads extending to the motor casing for providing an electrical connection therethrough to the shaft,
the other of said leads extending to said contact member,
said contact plate being substantially flat and extends transversely to and surrounds the shaft.

6. The combination set forth in claim **5** wherein said brush means includes a brush yieldingly urged in a direction parallel to the axis of said shaft into contact with said contact plate.

7. The combination set forth in claim **6** wherein said brush is mounted for limited resilient movement transversely with respect to said shaft.

8. In an emergency warning lamp or the like, the combination comprising
a base,
a lens on said base surrounding said lamp and reflector assembly,
said lens and base having complementary annular contacting surfaces,
interengaging means between said lens and said base comprising slot and flange means,
and an upstanding annular wall extending from said base within said lens to provide a water wall such that liquid cannot move transversely between said lens and said base into said lens.

9. The combination set forth in claim **8** including drain openings in said base permitting liquid such as water to be drained from said base in the event it passes between said lens and said base toward said annular wall.

10. The combination set forth in claim **9** wherein said interengaging means between said base and said lens comprises circumferentially spaced slots in said base,
said lens having downwardly and outwardly extending hook members engaging said slots,
said slots having a wide portion to permit axial movement of the hook members downwardly onto said base,
and a narrow, circumferential and transverse portion to permit the outwardly extending portion of said hook members to move upon rotation of said lens with respect to said base beneath said transverse wall of said base.

11. The combination set forth in claim **10** including releasable means extending between said flange on said lens and said base for locking said lens on said base.

12. In an emergemcy warning lamp, the combination comprising
a base,
an electric motor mounted on said base,
said motor having a shaft projecting therefrom,
said motor shaft being electrically connected to said motor casing,
a lamp and reflector assembly,
means for electrically and mechanically mounting said lamp and reflector assembly on said shaft such that there is an electrical connection to said shaft,
an electrical contact plate on said base insulated from said shaft,
and brush means electrically insulated from and mounted on said shaft for rotation therewith such that an electrical circuit may be completed from said shaft to said lamp and through said brush means to said contact member,
said electrical motor including a stator,
electrical leads to said stator,
one of said leads extending to the motor casing for providing an electrical connection therethrough to the shaft,
the other of said leads extending to said brush.

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