United States Patent

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[54] **FRUSTOCONICAL TROUBLE LIGHT WITH IN-LINE OUTLET BOX**
4 Claims, 7 Drawing Figs.

[52] U.S. Cl. **240/54,** 240/102, 240/103, 339/27
[51] **Int. Cl.** **F21v 15/00**
[50] **Field of Search** 240/54, 54.2, 102, 102.1, 102.2, 8.18, 92, 103; 339/27, 157

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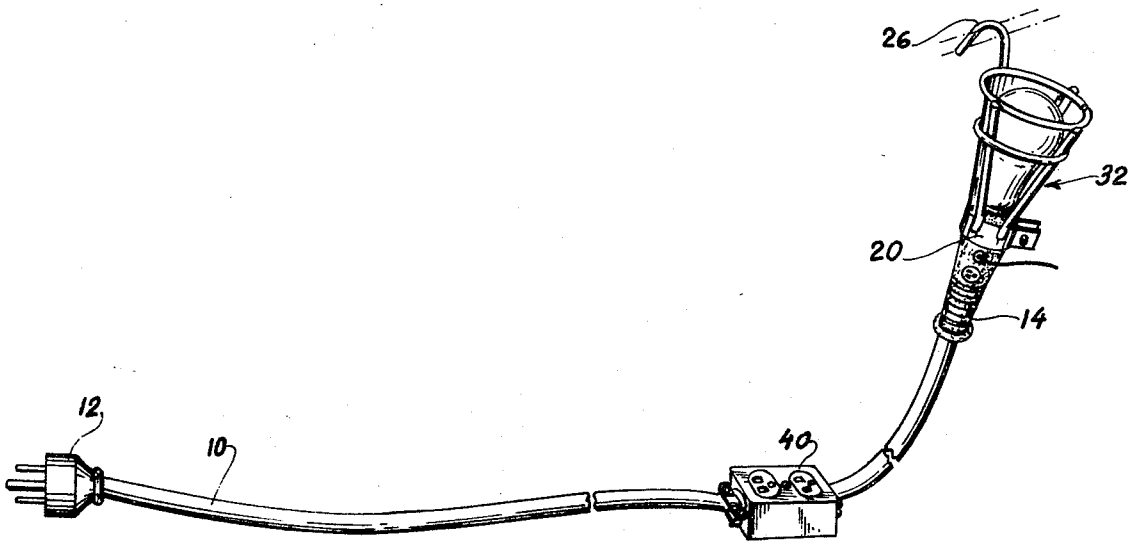
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Primary Examiner—Samuel S. Matthews
Assistant Examiner—Alan Mathews
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ABSTRACT: A trouble light having a substantially frustoconical guard containing a correspondingly shaped reflector which engages frame members in a snap-in snap-out manner so as to be removable and positionable. Circumferential frame members each have a discontinuity to provide shock resistance. The trouble light power cord is provided with an intermediate outlet connection box which may have a plurality of outlets arranged in conventional form or in opposed pair form when there are four outlets.



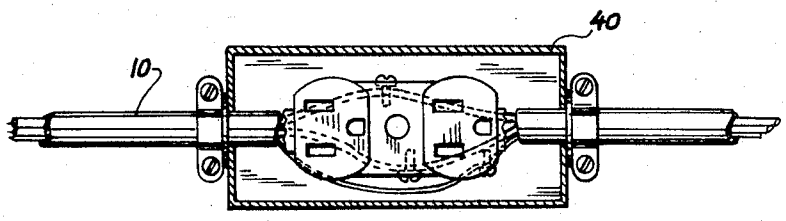


Fig. 5

Fig. 1

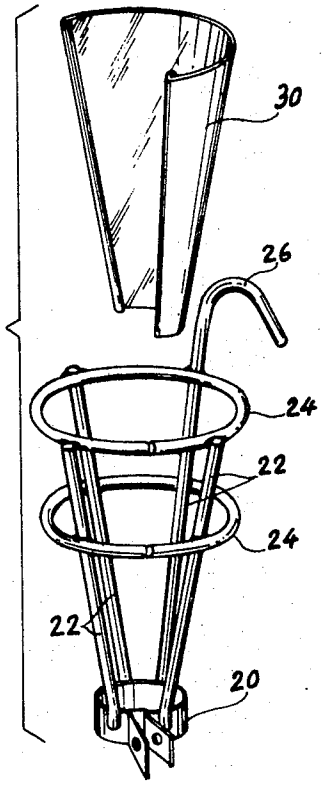


Fig. 4

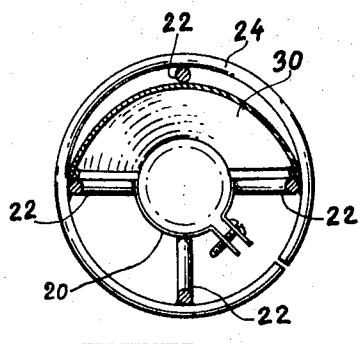


Fig. 3

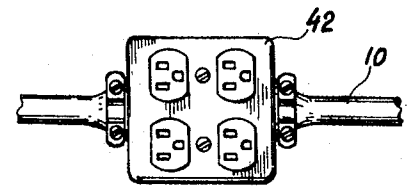


Fig. 6

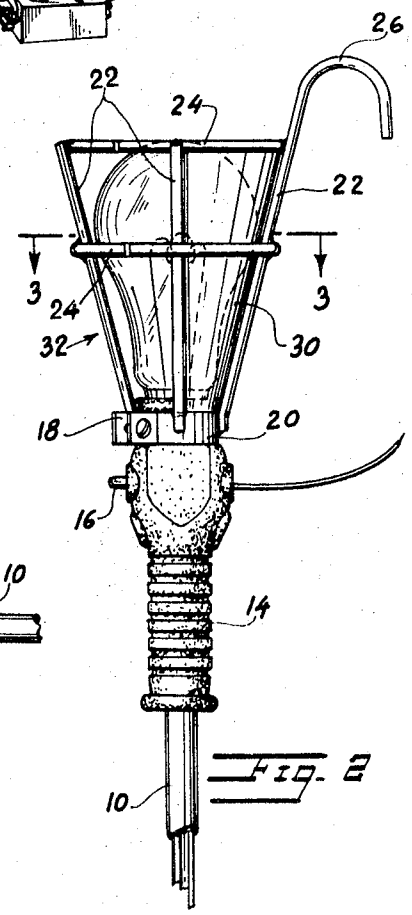


Fig. 2

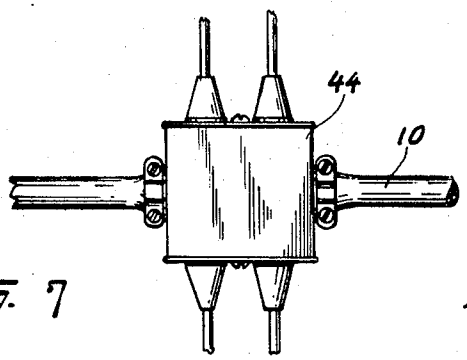


Fig. 7

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FRUSTOCONICAL TROUBLE LIGHT WITH IN-LINE OUTLET BOX

BACKGROUND OF THE INVENTION

1. Field of the Invention

Portable lamps having a plug-in power cord, generally referred to as trouble lights.

2. Description of the Prior Art

Prior hereto, virtually all trouble lights known to applicant have comprised an enclosure having a hinged door for access to the light bulb contained within. The enclosure has been substantially cylindrical with closed top and bottom members. The door occupied a substantial portion of the enclosure and a reflector was permanently positioned within the enclosure opposite the door.

SUMMARY OF THE INVENTION

Accordingly, the present invention provides a novel and useful trouble light which completely eliminates the hinged door of previous trouble lights and which provides a flexibility of use hitherto unknown.

The present invention further provides a trouble light guard notable both for its economy of manufacture and for its great resistance to mechanical shock.

The present invention additionally provides a trouble light having an accessory outlet box located intermediate of the power cord.

Briefly, and not by way of limitation, the present invention provides a trouble light having a light bulb guard which is substantially frustoconical in shape, being made of formed welded wires some of which extend longitudinally and some of which extend circumferentially. The circumferential wires have their respective ends abutting but not joined. The guard is fully open at the large end of the frustum for ready access to the light bulb within. The smaller end of the frustum is provided with a clamp for securing the guard to a shockproof handle which contains a switch. The power cord has located intermediate its ends an outlet box which may be a two or four outlet design but which is preferably a four outlet box with oppositely opposed outlet pairs.

A reflector, which may be substantially hemifrustoconical in shape, is removably secured to the guard in a snap-in snap-out manner.

It is a notable advantage of the present invention that the unique shape of the guard permits the use of large light bulbs such as the 300 watt size.

FIG. 1 is a pictorial view of the frustoconical trouble light with outlet box of the present invention.

FIG. 2 is a side view of the trouble light portion of the present invention.

FIG. 3 is a cross-sectional view taken across line 3–3 of FIG. 2, but without the light bulb.

FIG. 4 is an exploded pictorial view showing the guard and reflector portions of the present invention.

FIG. 5 is a partial cross-sectional view of a two outlet box connected to the power cord in accordance with the present invention.

FIG. 6 is a top view of a four outlet connection portion in accordance with the present invention.

FIG. 7 is a top view of a four outlet opposed pair connection box in accordance with the present invention.

DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

Referring to the drawing, the frustoconical trouble light with outlet box of the present invention comprises a power cord 10 connecting between a plug 12 and a handle 14 of the trouble light. Handle 14 encloses a standard electric switch 16 and a threaded socket for a light bulb, the threaded socket being located opposite the entrance point of power cord 10.

Handle 14 is provided with an annular flange 18 which surrounds the light bulb socket and which provides a surface about which a clamp ring 20 may be removably secured.

Attached to clamp ring 20, as by welding or the like, are a plurality of wire rod frame members 22 which extend upwardly and flare outwardly therefrom to define a substantially conical shape. A plurality of circumferential wire rings 24 are provided at spaced intervals and are attached, as by welding, to longitudinal wire rods 22, the uppermost ring 24 being attached near the tops of longitudinal rods 22 preferably on the inside thereof. The plane of each wire ring 24 is disposed perpendicularly to the axis of the cone; the entire guard 32 thereby formed defines a frustum of the cone.

Each wire ring 24 has its respective ends in abutting relationship where they meet but are not joined to provide a great degree of flexibility and give, both important to the shock resisting and absorbing functions of the wire guard.

One of said longitudinal rods 22 may extend upwardly and be looped to form a hinging hook 26.

A reflector 30 may be formed of sheet metal to fit within the frustoconical guard 32. It is preferred that reflector 30 cover approximately one-half of frustoconical guard 32; the preferred shape of reflector 30 is accordingly substantially hemifrustoconical.

In the preferred form of the invention, guard 32 is provided with four longitudinal rods 22 equally spaced to form quadrants. Reflector 30 is accordingly adapted to fit against any opposed pair of longitudinal rods 22 as may clearly be seen in FIG. 3. Since reflector 30 is flexible, it may be snapped into guard 32 and similarly snapped out of guard 32.

Power cord 10 has located intermediate its ends a connection box 40 which may be provided with two outlets in standard electrical connection. Alternatively, a four outlet connection box 42 may be provided which has all four outlets located in the upper surface of the outlet box. Preferably, however, it is proposed that an outlet box 44 be provided having four outlets arranged in opposed vertically oriented sidewall pairs as is shown in clear fashion in FIG. 7. The advantages of such a box are clear. Outlet boxes 40 and 42 when placed flat on the ground require an upward outcropping of accessory wires and plugs, all adapted to trip the unwary. Applicant's proposed opposed pair sidewall outlet box 44 when placed flat on the ground permits accessory wires and plugs to run horizontally close to the ground and safely out of harm's way.

While the foregoing is illustrative of preferred embodiments of the invention, it is clear that other embodiments and modifications may be had within the broad teachings of the disclosure and the scope of the claims.

What I claim is:

1. An electric light comprising:
   a. a power cord, said power cord connecting between a power source and a light bulb socket;
   b. a shock-resistant handle, said shock-resistant handle enclosing said light bulb socket and a switch therefor;
   c. a guard of substantially frustoconical shape, said guard being clamped to said shock-resistant handle, and having an open top portion at the larger end of the frustum opposite the smaller end thereof which is clamped to said handle, said guard comprising:
      i. a circular clamp member;
      ii. a plurality of substantially straight wire members, each of said straight wire members extending upwardly and outwardly from said circular clamp member at spaced intervals thereabout; and
      iii. a plurality of circular wire members, each of said circular wire members being joined in spaced vertical intervals to said straight wire members; and
   d. hemifrustoconical reflector means disposed within said guard for removably snapping between any opposed pair of said straight wire members.

2. An electrical light in accordance with claim 1, wherein:
   a. one of said straight wire members extends upwardly and outwardly beyond the others and is formed into a partial loop to form a hinging hook.

3. An electrical light in accordance with claim 1, additionally comprising:

a. an electrical outlet box, said electrical outlet box being connected to said power cord intermediate its ends.

4. An electrical light in accordance with claim 3, wherein:

a. said electrical outlet box having two pairs of said outlets, said pairs being in opposed, vertical sidewalls of said electrical connection box.