April 15, 1930. H. BRACHTL 1,754,931

LAMP GUARD AND MOUNTING THEREFOR

Filed Jan. 21, 1928

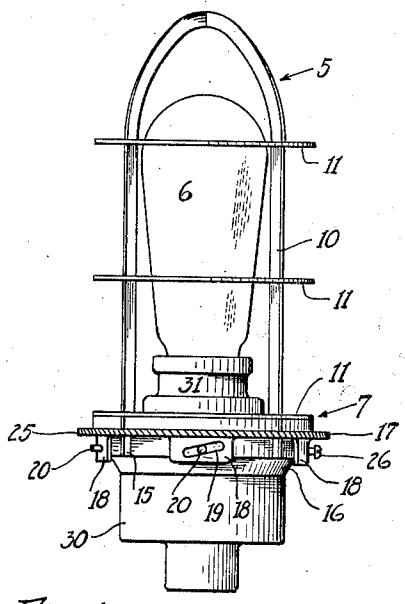


Fig. 1

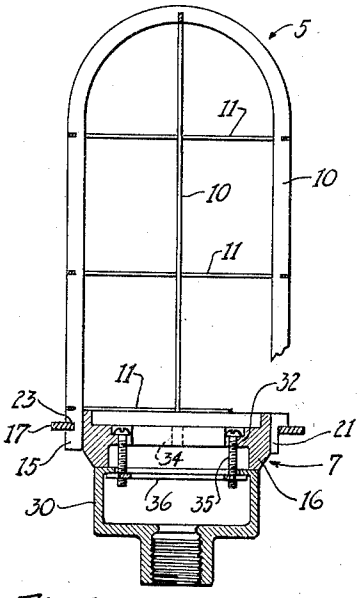


Fig. 2

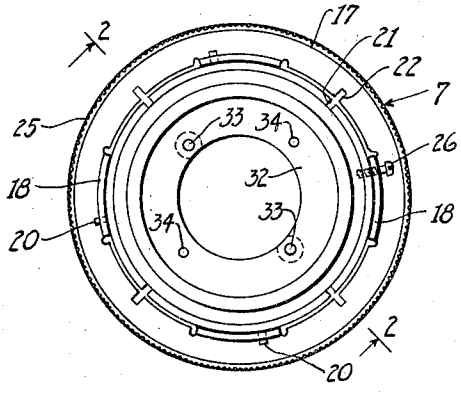


Fig. 3

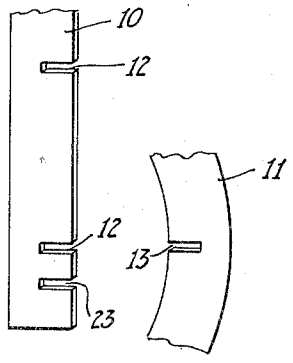


Fig. 4

Fig. 5

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UNITED STATES PATENT OFFICE

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LAMP GUARD AND MOUNTING THEREFOR

Application filed January 21, 1928. Serial No. 248,286.

The invention relates generally to protective devices for guarding incandescent lamps from breakage and the general object of the invention is to provide a novel device of this character which is composed of separate units or sections which when in assembled relation will serve effectively to protect an incandescent lamp and which may be easily and readily assembled about a lamp or dis-assembled to facilitate inspection, cleaning or replacement of a lamp which is protected thereby.

Stated more specifically, the invention aims to provide such a protective device composed of two major units, to wit, a guard which is adapted to slip over a lamp and a carrier or mounting therefor which includes a locking means instantly operable by the fingers without the use of tools for securing or releasing said guard.

Another object of the invention is to provide such a guard which has great strength and rigidity so as to satisfactorily protect an incandescent lamp but which is so formed that the parts thereof will offer the minimum interference to the passage of light rays from the lamp protected thereby.

Other objects and advantages will become apparent from the following description of the device and from the accompanying drawings in which:

Figure 1 shows an elevational view of a lamp socket containing a lamp guarded by a protective device embodying the present invention.

Fig. 2 shows a fragmental cross sectional view taken in the plane indicated by the line 2—2 in Fig. 3.

Fig. 3 is a bottom plan view of the mounting.

Figs. 4 and 5 are fragmental perspective views of the members which make up the guard.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawings and will herein describe in detail the preferred embodiment, but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

The guard which is designated as 5 is best shown in its operative position in Fig. 1 about an incandescent lamp 6 and associated with the carrier 7 so that the two parts completely surround and protect the lamp. The guard 5 is preferably formed with one open end, the bottom end as shown in Fig. 1, so that when it is dis-associated from the carrier 7 it may be freely moved axially of the lamp 6 out of its surrounding relation to permit inspection, cleaning or replacement of the lamp.

In order that the guard may have great rigidity and yet form a minimum of obstruction to the passage of light rays from the lamp, the guard is preferably formed from thin flat members or strips which may be of substantially rectangular cross section and which are so positioned in the finished guard so that the greatest cross-sectional dimension thereof lies substantially along the path of the light rays.

As illustrated herein the guard comprises a plurality of U-shaped members 10 which are arranged in crossing relation at their mid-points and are joined by a plurality of ring-shaped members 11 positioned at spaced intervals along the sides of the U. In forming and assembling the U-shaped members 10 and ring members 11 in accordance with the objects above set forth, the flat strip which makes up each of the U-members is arranged so as to lie substantially in a plane which passes through the longitudinal axis of the guard while the strip which makes up each ring member is arranged to lie substantially flat in a plane which is perpendicular to said axis. The U-shaped members and the ring members are preferably associated with each other by joints which are of the lap type and which are made by forming notches 12 in the outer edges of the U-members (Fig. 4) and notches 13 in the inner edges of the ring members (Fig. 5). Thus when the two members are placed in crossing relation the outer edges of the two are flush. Similar notches are formed in the U-members at the point of crossing so as to form a similar joint and all

of the joints are preferably fixed together as by soldering.

Thus a guard is formed which is closed at one end by the crossing of the U-members and which is open at the other end to allow it to be slipped over an incandescent lamp so as to surround and protect the lamp.

The carrier 7 is adapted to be associated with the open end of the guard 5 to close that end and complete the protective device and means is provided for interengaging the two members so as to maintain them in their associated relation. In the embodiment illustrated this means is mounted principally upon the carrier 7, the parts on the carrier being arranged to effect an interlocking relation with a plurality of anchoring elements 15 which project axially from the open end of the guard 5. These anchoring elements 15 are preferably formed by continuations of the sides of the U-members 10.

The carrier 7 preferably comprises an annular body member 16 having another annular member or ring 17 mounted about its outer peripheral edge for limited rotational and limited axial movement relative thereto. The means herein shown for securing the one member to the other and for limiting and guiding their relative movement comprises a plurality of flanges 18 which project in an axial direction from the member 17 near the inner edge thereof so as to abut the outer peripheral surface of the member 16. An angularly extending slot 19 is formed in each of the flanges 18 and a plurality of studs 20 are fixed on the body member 16 so that each stud will project outwardly therefrom into one of the slots 19. Thus the outer ring 17 is secured on the inner body member 16 and its rotative and axial movement relative thereto are limited by the direction and extent of the slots 19.

A plurality of opposed notches 21 and 22 are formed in the members 16 and 17 respectively, being positioned so as to be in registry when the members are at one limit of their rotational movement and spaced so as to receive the anchoring elements 15 when in registry. Suitably positioned notches 23 are formed in the outer edges of the anchoring elements 15 so that the ring 17 may be rotated relative to the body member 16 and the anchoring elements 15 to enter the notches 23 in the anchoring elements and form an interlocking engagement therewith. To provide for a more rigid relation between the guard 5 and the carrier 7 abutments are formed on the guard 5, preferably by positioning one of the circular members 11 so that it abuts the end of the body member 16 of the carrier. It will be apparent that the angular arrangement of the slots 19 will cause the member 17 to move axially during its rotation into interlocking engagement with the guard, thus drawing the ring 11 firmly into contact with the body member 16.

In the use of the device it is desirable to have the ring 17 freely rotatable manually without the use of tools of any kind and to this end the outer peripheral surface thereof is knurled as at 25. In case it is desirable to fix or secure the ring 17 so as to require the use of tools before rotation, one of the studs 20 may be in the form of a screw 26 threaded in the body member and arranged to clamp the flange 18.

Means may also be provided to facilitate the attachment of the carrier 7 to a support such as an outlet box 30 or the like, and also for securing a lamp socket 31 to the carrier. In the present instance an inwardly extending flange 32 is formed on the body member 16 of the carrier and suitably positioned apertures 33 and 34 formed therein to receive securing means.

Thus a pair of screws 35 may extend through apertures 33 into threaded engagement with a securing ring 36 within the outlet box 30 to secure the carrier and outlet box together. The socket 31 may then be secured to the carrier 7 by screws (not shown) engaging the threaded apertures 34 in the flange 32.

From the foregoing description it will be apparent that the invention provides a protective device of a rugged character which does not unduly restrict the passage of light from the lamp protected and that the guard and carrier may be readily disassociated for inspection or replacement of the lamp.

I claim as my invention:

1. A protective device for incandescent lamps having, in combination, a guard carrier, a guard open at one end to receive a lamp and adapted to abut said carrier, said carrier comprising a body member, a ring rotatably mounted on said body member and arranged to move axially of the member during such rotation, said member and said ring having opposed notches formed therein arranged to be carried into and out of registering relation by relatively rotating said ring and member, a plurality of fingers on the open end of the guard adapted to be inserted into said notches when in registry, said fingers having notches therein to permit rotation of said ring to carry its notches out of registry with the notches in said member to secure said guard to the carrier, and means operable during such rotation of the ring to move the ring axially of the body member and thereby draw the guard into firm clamping abutment with said body member.

2. A protective device for incandescent lamps having, in combination, a guard open at one end to receive a lamp, and a carrier for the guard comprising a pair of annular members secured together for relative rotary movement, said two members having opposed notches formed therein arranged to be carried into and out of registering relation

by relatively rotating said members, and a plurality of fingers on the open end of the guard adapted to be inserted into said notches when in registry, said fingers also having notches therein to permit rotation of one of said members to carry its notches out of registry with the notches in the other member and thereby secure the guard in interlocking relation to said carrier.

3. A protective device for incandescent lamps having, in combination, a guard open at one end and having a plurality of anchoring fingers, and a carrier for the guard comprising a pair of parts mounted for relative movement and providing openings to receive said fingers, said parts being adapted in their relative movement to effect an interengagement of the guard and the carrier.

4. A protective device for incandescent lamps having, in combination, a carrier, and a guard open at one end to permit it to be slipped over a lamp and into abutment with said carrier, and having a plurality of anchoring elements, said carrier providing a plurality of openings therein to receive said anchoring elements and having means movable relatively to said guard and said carrier for effecting an interlocking relation between said anchoring elements and the carrier, said means being operable to draw said guard axially into firm abutment with said carrier.

5. A protective device for incandescent lamps comprising, in combination, a guard carrier, a guard open at one end to permit it to be slipped over a lamp and into abutment with the carrier, said carrier comprising a body member, a ring rotatably mounted on said member arranged when rotated to engage and lock said guard against axial movement relative to said ring, and means operable during such rotation of said ring to move said ring axially of the body member and thereby to draw said guard into firm abutment with said member.

6. A protective device for incandescent lamps comprising, in combination, a guard carrier, and a guard having an open end and arranged to abut said carrier, said carrier comprising a body member and a ring mounted rotatably thereon arranged when rotated to engage said guard and to move axially on said body member to draw said guard into firm abutment therewith.

7. A protective device for incandescent lamps having, in combination, a guard open at one end and having a plurality of anchoring elements, abutments on said anchoring elements, and a carrier for the guard comprising a member adapted to receive said anchoring elements and to bear against said abutments, and a part movably mounted on said member and adapted in its movement to effect an interengagement with said anchoring elements, and to draw said abutments into firm contact with said member.

8. A protective device for lamps comprising, in combination, a guard open at one end and having a plurality of anchoring elements thereon, a carrier for said guard adapted to detachably receive said anchoring elements, without distortion of the guard or anchoring elements and means movable relatively to said carrier and said guard and operable without distortion of said guard to effect an interengagement of each of said elements, said carrier to maintain the parts in assembled relation.

9. A lamp guard comprising a plurality of U-shaped members formed from flat strips of metal, the strip forming each U-member lying substantially in a plane passing through the longitudinal axis of the guard, each side or leg of the U-members having a plurality of notches formed at spaced intervals along the outer edge thereof, and a plurality of reinforcing members formed from flat strips of metal lying in planes substantially perpendicular to the sides or legs of said U-members and encircling said legs, each reinforcing member having a plurality of notches formed at spaced intervals about the inner edge thereof and adapted to cooperate with said first mentioned notches to form lap joints connecting said U-members and said reinforcing members.

10. A protective device for lamps comprising, in combination, a guard open at one end and having a plurality of anchoring elements thereon, a carrier for said guard adapted to detachably receive said anchoring elements, and means mounted on said carrier and movable relatively thereto to engage each of said anchoring elements to fix them in position relatively to said carrier.

11. A protective device for lamps comprising, in combination, a guard open at one end and having a plurality of anchoring elements thereon, a carrier for said guard adapted to removably receive said anchoring elements without distortion of the guard or the elements, and means movable relatively to said elements and said carrier and along the periphery of said carrier to fix said elements in position relatively to said carrier.

12. A protective device for lamps comprising, in combination, a guard open at one end and having a plurality of anchoring elements thereon, a carrier for said guard adapted to removably receive said anchoring elements, and means mounted on said carrier operable by rotative movement relatively to said carrier about the axis of said guard to secure said guard in position on said carrier.

13. A protective device for lamps comprising, in combination, a guard open at one end and having a plurality of anchoring elements thereon, a carrier for said guard adapted to removably receive said anchoring elements by an axial movement of said guard to fix said guard against rotation relatively thereto

and means mounted on said carrier operable by a rotative movement relatively to said carrier and about the axis of said guard to fix said elements against axial movement relatively to said carrier.

14. A protective device for incandescent lamps having, in combination, a guard member open at one end to permit it to be slipped over a lamp, a carrier member adapted to abut the open end of said guard member, a plurality of anchoring elements on one of said members, the other of said members having means providing recesses to receive said elements when said members are placed in abutting relation, and locking means movably mounted on said other member and adapted in its movement relative to said other member to engage said elements and thereby effect an interengagement of said members.

In testimony whereof, I have hereunto affixed my signature.

HENRY BRACHTL.