O. JOHNSON.

LAMP GUARD.

APPLICATION FILED AUG. 6, 1912.

1,195,230.

Patented Aug. 22, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

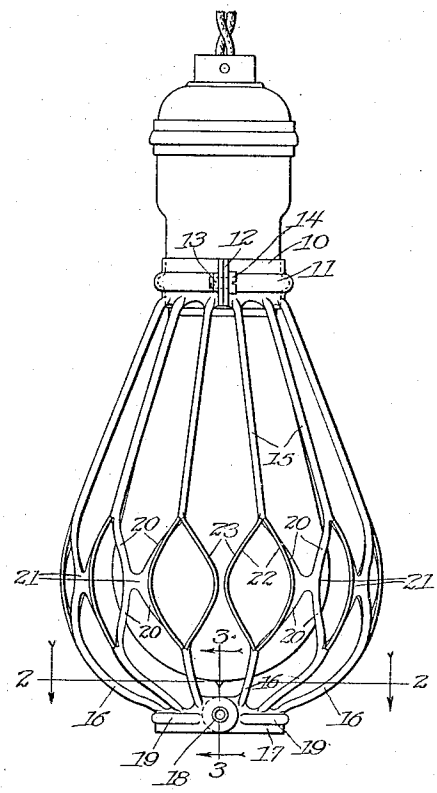


Fig. 2.

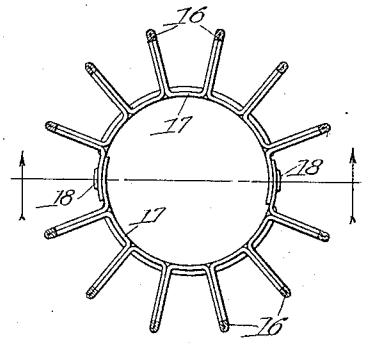
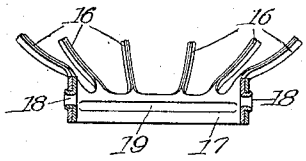


Fig. 3.



Witnesses:
Robert H. Weir
M. Reynolds.

Inventor:
Otto Johnson
by Jones, Addington, Ames & Seibold
Attys.

THE HORTH PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

O. JOHNSON.

LAMP GUARD.

APPLICATION FILED AUG. 6, 1912.

1,195,230.

Patented Aug. 22, 1916.

2 SHEETS—SHEET 2.

Fig. 4.

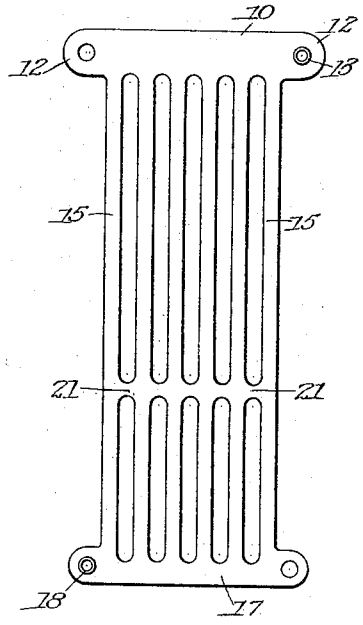


Fig. 5.

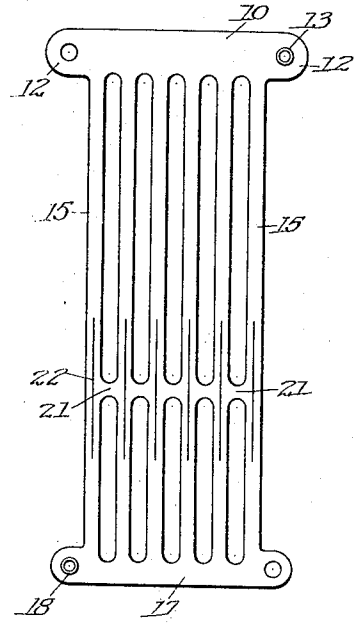


Fig. 6.

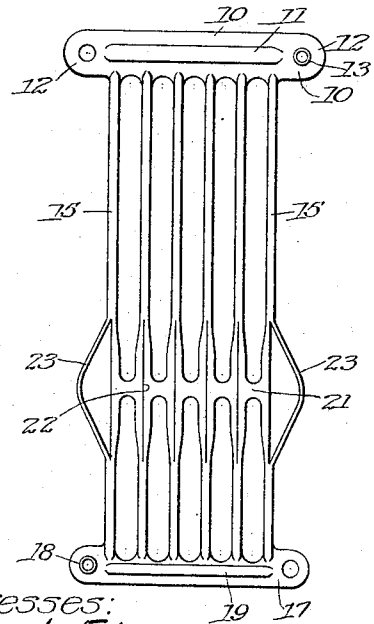
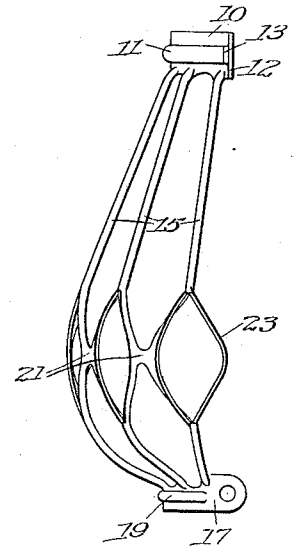


Fig. 7.



Witnesses:
Robert H. Weir
M. Reynolds

Inventor.
Otto Johnson.
By Jones, Washington Ames & Seibold
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OTTO JOHNSON, OF LA GRANGE, ILLINOIS, ASSIGNOR TO FLEXIBLE STEEL LACING CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

LAMP-GUARD.

1,195,230. Specification of Letters Patent. Patented Aug. 22, 1916.

Application filed August 6, 1912. Serial No. 713,636.

To all whom it may concern:

Be it known that I, OTTO JOHNSON, a citizen of the United States, residing at La Grange, in the county of Cook and State of Illinois, have invented new and useful Improvements in Lamp-Guards, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention pertains to guards for incandescent electric lamps, and particularly relates to guards of the class in which a metallic cage is secured to the lamp socket so as to inclose the lamp and thereby protect the same from injury.

My invention further pertains to methods of making such lamp guards.

It is an object of my invention to provide a lamp guard which will be strong and durable and not liable to deterioration under ordinary rough usage, and which will obstruct the light to the least extent possible.

It is another object of my invention to produce a satisfactory and efficient lamp guard of such a nature that it may be produced economically, both as to labor and as to material used. And it is still another object of my invention to provide an efficient and economical method of producing lamp guards from blanks by expanding the metal of the latter.

A lamp guard constructed in accordance with my invention, together with a method of producing the same, is described in the following specification in connection with the accompanying drawings. It is to be understood, however, that my invention may be embodied otherwise than as described below, without exceeding the scope thereof, as defined in the appended claims.

In the drawings: Figure 1 is a side view of a lamp socket having a guard constructed in accordance with my invention attached thereto; Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1 looking in the direction of the arrows; Fig. 3 is a vertical section taken on the line 3—3 of Fig. 1 looking in the direction of the arrows; Fig. 4 shows one of the guard-sections at the first stage of its production; Fig. 5 shows the same at what may be termed the second stage of its production; Fig. 6 shows the same at what may be termed the third stage of its production; and Fig. 7 shows a completed guard-section ready for connection with another guard-section to form a complete guard.

Like reference characters refer to like parts throughout the following description and the several figures of the accompanying drawings.

Referring now to the embodiment of my invention which I have shown in the drawings, the lamp guard consists of two guard-sections hinged together at their lower ends and adapted to be releasably connected together at their upper ends so as to inclose the shell of a lamp socket between them, whereby the lamp carried by the socket is inclosed between the two guard-sections as shown in Fig. 1 of the drawings. The guard-sections are complementary, and each of them comprises a half-collar 10 formed with a hollow bead 11 of a size to conveniently engage the bead which is ordinarily provided upon the lamp socket for the attachment of a shade-supporting ring or the like. The half-collar 10 is formed at each end with a radially extending lug 12, one of these lugs having an opening formed therethrough, and the other lug being formed with an eyelet 13 located similarly to the opening of the first-named lug. It will be seen that, when the two guard-sections are brought together at their upper ends, the eyelet and the opening of the lugs of one section will come into register with the opening and the eyelet, respectively, of the other guard-section. Screws 14 are passed through the opening of one lug of each half-collar and threaded into the eyelet 13 of the other lug of each half-collar, whereby the guard-sections are releasably secured together at their upper ends.

A plurality of ribs 15 spring outwardly in an inclined direction from each of the half-collars 10, the inclination of these ribs being such as to follow that of the upper part of the lamp bulb. The ribs 15 are curved inwardly, at 16, at their lower ends, so as to follow the curvature of the end of the lamp bulb, and terminate in a half-ring 17. The half-ring 17 of each guard-section is alike, and is formed at its ends with ears, one of which ears is formed with an opening while the other is formed with an eyelet 18 of a diameter somewhat less than that of the

opening. The guard-sections are hinged together by passing the eyelet 18 of each half-ring 17 through the opening of the other half-ring, and then heading the ends of the eyelets over, so as to effect a hinged connection between the half-rings of the guard-section (Figs. 2 and 3). Each half-ring is formed with a bead 19 in order to enable it to resist compression.

Each of the ribs 15 is doubled inwardly upon itself (Fig. 2) so that the metal thereof lies edgewise in a plane extending radially from the axis of the lamp. The ribs 15 are connected with each other intermediate their ends, adjacent the greatest diameter of the lamp bulb, by integral webs 20 springing from each rib and connected by necks 21. The webs 20 are of a width equal to the radial depth of the ribs 15, and are disposed substantially in a plane extending circumferentially of the lamp; they are formed by splitting the metal of the ribs 15 longitudinally at the center of the ribs and spreading the metal apart to form an extended aperture 22 between the ends of each rib. The portion of each of the ribs at the outside of each guard-section beyond the slit is spread outward as shown at 23 (Fig. 1), so that, when the guard-sections are assembled, the spread out portions 23 will extend into a position adjacent each other, and thus form a continuation of the fence formed by the webs 20.

The construction described above permits of each guard-section being produced by die work from a unitary sheet of metal. Further, it will be noted that each of the two sections of the guard is precisely similar to the other; so that, in the manufacture of the guards, it is only necessary to produce a plurality of similar guard-sections, the guard-sections being assembled in pairs to form complete guards. Great lateral rigidity, as well as resistance to distortion of the webs of the ribs 15 toward or away from one another, is given by the fence formed by the connected webs 20, the fact that these webs are disposed in a plane extending circumferentially of the lamp enhancing this effect. The doubling of the metal of the ribs 15 upon itself so that it lies in a plane extending radially from the axis of the lamp enables these ribs to resist properly any pressure which may be exerted upon them in a direction toward the lamp, and does this while obstructing the light to a minimum extent. Distortion of the half-rings 17 under compression is prevented by the provision of the reinforcing beads 19 with which the half-rings are formed. The guard is of an exceedingly neat appearance, and, by reason of its construction, is not liable to lose its neatness of appearance by reason of its members becoming distorted under rough usage, which is very liable to occur to many of the lamp guards at present on the market. Furthermore, it can be applied to, or removed from, a socket with the greatest ease, by simply manipulating the screws 14.

I will now describe a method, embodying my invention, of producing the construction of lamp guard described above. By means of a suitable die, a flat blank is cut out from a sheet of metal. This blank (Fig. 4) consists of an upper strip 10 having ears 12 at its ends, and a lower strip 17, these strips being connected by longitudinal members 15 separated by slots extending longitudinally between them. These members 15 are connected, intermediate their ends and somewhat toward the lower strip 17, by necks 21. In one of the ears 12 of the upper strip 10 is formed an aperture, and in the other ear is formed an eyelet 13. Likewise, an aperture is formed at one end of the lower strip 17, and an eyelet 18 is formed at the other end. The blank is perfectly flat, except for the slight projection caused by the eyelets 13 and 18; and it is somewhat longer than the completed lamp guard, this excess length being taken up in the subsequent operation of bending the blank to shape. The blank shown in Fig. 4 is operated upon by another die, which forms a longitudinally extending slit 22 in each of the members 15, such slit extending a short distance on either side of the neck 21 which connects each member 15 with the member beside it. The condition of the blank, with the slits 22 formed therein, is shown in Fig. 5. The blank, in the condition shown in Fig. 5, is placed in another die. This die folds the metal of the longitudinal members 15 upon itself at the parts thereof above and below the slits 22, and forms the bead 11 in the upper strip 10 and the bead 19 in the lower strip 17. At the same time, the metal of the members 15 at the outside of the blank is pulled out to form the loops 23. The blank then has the appearance illustrated in Fig. 6. The blank is then placed in the final die, which bends the longitudinal members 15 so as to cause them to follow the outline of a lamp and bends the upper and lower strips 10 and 17 into the form of semi-circles. At the same time, the members 15 are stretched apart and also pulled into the curve of the outline of a lamp, the stretching pressure being applied at the insides of the outside members 15 at points adjacent the upper and lower ends of the slits 22. The effect of this stretching operation is to pull the members 15 into the positions shown in Fig. 7, and at the same time to open out the slits 22, it being noted that this leaves the metal of the members 15 between the slits disposed in a plane extending circumferentially of the guard. The guard-section then has the appearance illustrated in Fig. 7, and is finished, except for tapping of the eyelet 13.

All that is now necessary is to connect two of the sections together by heading over the eyelets 18, and thus forming a hinged connection between the lower ends of the sections, and by inserting the screws 14 into the eyelets 13.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a lamp guard, a pair of complementary unitary guard-sections adapted to inclose a lamp between them, each of said guard-sections having at its lower end a half-ring having an opening adjacent one extremity and an eyelet adjacent the other extremity, the eyelet of each half-ring being passed through the opening of the other, whereby a hinged connection is effected at the lower ends of said guard-sections, and means for releasably securing said sections together at their upper ends so as to be capable of embracing a support between them.

2. In a lamp guard, a pair of complementary unitary guard-sections hinged together at their lower ends, and adapted to inclose a lamp between them, each of said guard-sections having at its upper end a half-collar having an opening adjacent one extremity and a threaded eyelet adjacent the other extremity, the eyelet of one half-collar being arranged to register with the opening of the other, and screws passing through said openings and entering said eyelets, thereby releasably securing said sections together so as to be capable of embracing a support between them.

3. A lamp guard comprising a plurality of ribs secured together at their upper and lower ends so as to extend longitudinally of the lamp and inclose the same, said ribs being disposed edgewise in planes extending radially from the axis of the lamp and being formed of sheet metal doubled upon itself, and means for connecting said ribs together intermediate their ends.

4. A lamp guard comprising a plurality of ribs secured together at their upper and lower ends so as to extend longitudinally of the lamp and inclose the same, said ribs being disposed edgewise in planes extending radially from the axis of the lamp and being formed of sheet metal doubled upon itself, and metallic members, integral with said ribs, for connecting the latter together intermediate their ends.

5. A lamp guard comprising a plurality of ribs secured together at their upper and lower ends so as to extend longitudinally of the lamp and inclose the same, said ribs being disposed edgewise in planes extending radially from the axis of the lamp and being formed of sheet metal doubled upon itself, and metallic members, integral with said ribs and disposed flatwise in a plane extending circumferentially of the lamp, for connecting said ribs together intermediate their ends.

6. A lamp guard comprising two complementary guard-sections adapted to inclose a lamp between them and each comprising a single integral cut and worked piece of metal, each guard-section including a top member and a bottom member, a plurality of top rib members extending from said top member, a plurality of bottom rib members extending from said bottom member, said rib members being disposed longitudinally of the lamp, and a plurality of diagonal members connecting said top and bottom rib members, the diagonal members between each pair of rib members being connected together.

7. A lamp guard comprising two complementary guard-sections adapted to inclose a lamp between them and each comprising a single integral cut and worked piece of metal, each guard-section including a top member and a bottom member, a plurality of top rib members extending from said top member, a plurality of bottom rib members extending from said bottom member, said rib members being disposed longitudinally of the lamp, and being disposed edgewise in planes extending radially from the axis of the lamp, and a plurality of diagonal members connecting said top and bottom rib members, the diagonal members between each pair of rib members being connected together.

8. A lamp guard comprising two complementary guard-sections adapted to inclose a lamp between them and each comprising a single integral cut and worked piece of metal, each guard-section including a top member and a bottom member, a plurality of top rib members extending from said top member, a plurality of bottom rib members extending from said bottom member, said rib members being disposed longitudinally of the lamp and having the metal thereof doubled upon itself and disposed radially of the lamp, and a plurality of diagonal members connecting said top and bottom rib members, the diagonal members between each pair of rib members being connected together.

9. A lamp guard comprising two complementary guard-sections adapted to inclose a lamp between them and each comprising a single integral cut and worked piece of metal, each guard-section including a top member and a bottom member, a plurality of top rib members extending from said top member, a plurality of bottom rib members extending from said bottom member, said rib members being disposed longitudinally of the lamp, and being disposed edgewise in planes extending radially from the axis of the lamp, and a plurality of diagonal mem-

bers connecting said top and bottom rib members and disposed substantially in a plane extending circumferentially of the lamp, the diagonal members between each pair of rib members being connected together.

10. A lamp guard comprising two complementary guard-sections adapted to inclose a lamp between them and each comprising a single integral cut and worked piece of metal, each guard-section including a top member and a bottom member, a plurality of top rib members extending from said top member, a plurality of bottom rib members extending from said bottom member, said rib members being disposed longitudinally of the lamp and having the metal thereof doubled upon itself and disposed radially of the lamp, and a plurality of diagonal members connecting said top and bottom rib members and disposed substantially in a plane extending circumferentially of the lamp, the diagonal members between each pair of rib members being connected together.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

OTTO JOHNSON.

Witnesses:
M. B. LANGE,
M. REYNOLDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."