Sept. 28, 1943. P. D. PHILLIPS 2,330,738

ELECTRIC LIGHTING FIXTURE

Filed July 9, 1941 2 Sheets-Sheet 1

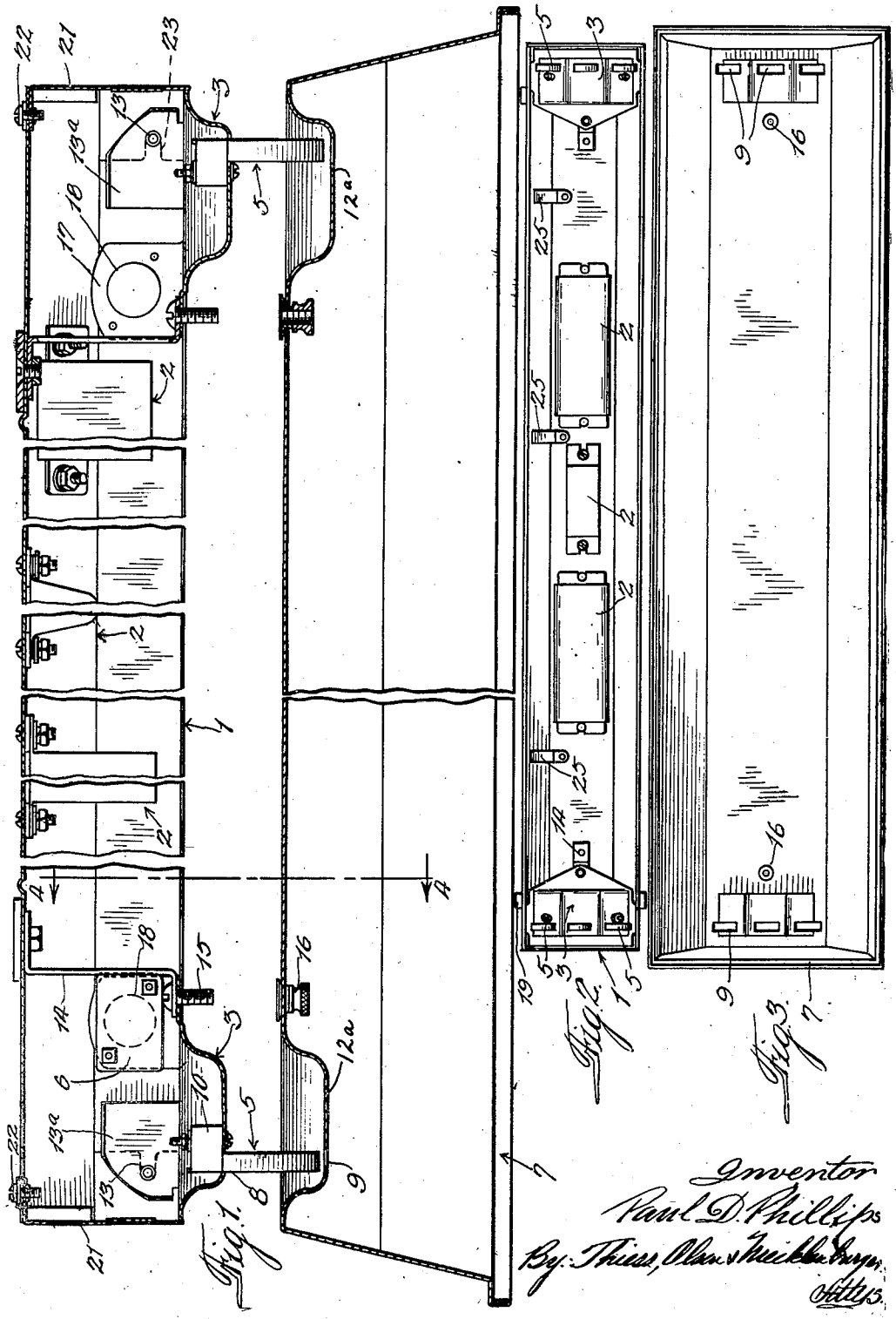


Fig. 1.

Fig. 2.

Fig. 3.

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Fig. 4.

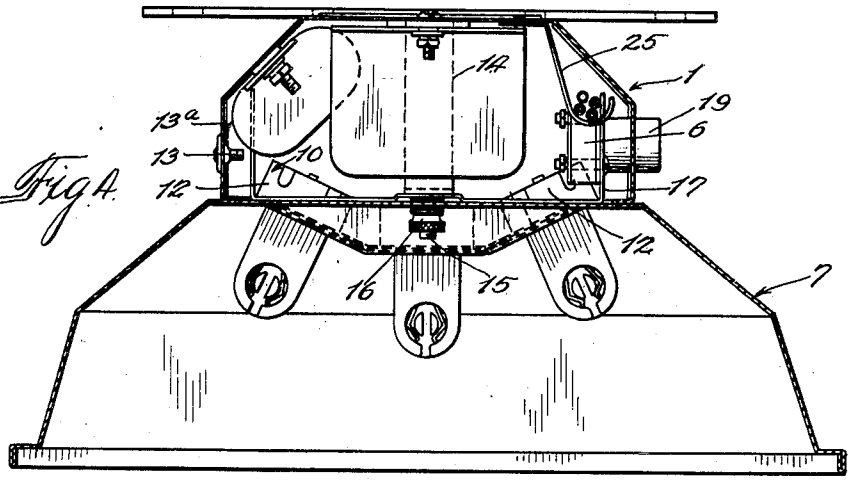


Fig. 5.

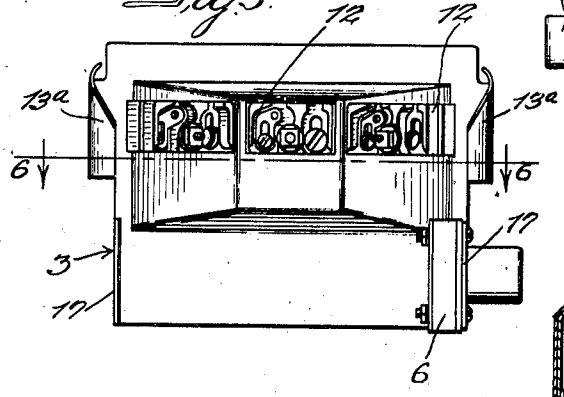


Fig. 6.

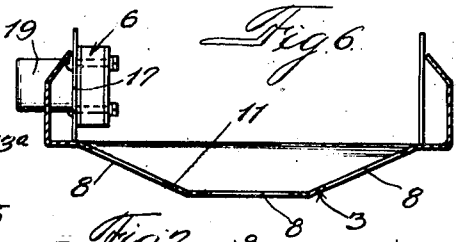
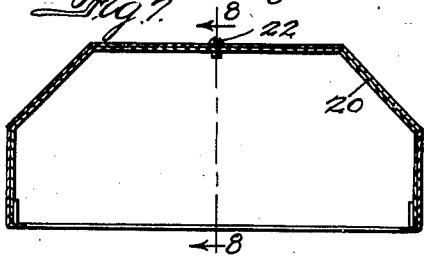


Fig. 7.



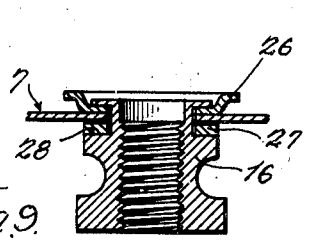


Fig. 9.

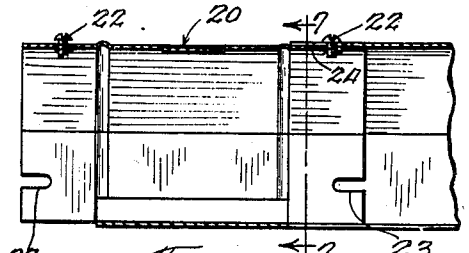


Fig. 8.

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UNITED STATES PATENT OFFICE

2,330,738

ELECTRIC LIGHTING FIXTURE

Paul D. Phillips, Elmhurst, Ill., assignor to Benjamin Electric Mfg. Company, Des Plaines, Ill., a corporation of Illinois

Application July 9, 1941, Serial No. 401,606

4 Claims. (Cl. 240—78)

My invention relates to electric lighting fixtures and more particularly to fixtures for use with elongated tubular fluorescent bulbs.

One of the objects of my invention is to provide an improved fixture in which the bulb holders, starter switches, ballasts, etc., are mounted in and supported by an elongated channel-like cover or hood and in which the reflector member may be readily attached and detached with respect to the hood for inspection and repair of the apparatus in the hood and for cleaning the reflector.

A further object is to provide an improved grounding for the reflector.

A further object is to provide an improved construction in which a substantially continuous hood may be provided underneath which may be mounted a plurality of reflector members.

A further object is to provide a fixture having improved means for retaining the wiring in position.

Further objects and advantages of the invention will be apparent from the description and claims.

In the drawings, in which an embodiment of my invention is shown,

Figure 1 is a vertical sectional view showing the reflector detached from the cover or hood;

Fig. 2 is a bottom plan view of the hood;

Fig. 3 is a bottom plan view of the reflector;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is a top plan view of the bridge and apparatus mounted thereon;

Fig. 6 is a section substantially on the line 6—6 of Fig. 5;

Fig. 7 is a vertical transverse section of a splice member substantially on the line 7—7 of Fig. 8;

Fig. 8 is a section substantially on the line 8—8 of Fig. 7; and

Fig. 9 is an axial sectional view showing part of the connection between the reflector and hood.

Referring to the drawings in detail, the construction shown comprises a cover or hood 1, apparatus 2, such as ballasts, compensators, and auxiliaries for controlling the current, mounted in and supported by the hood 1, a plurality of bridges 3 of formed sheet metal extending across the channel-like hood and secured to the sides thereof, bulb holders 5 and starter switch holders 6 mounted on said bridges, and a trough-like reflector member 7 extending longitudinally of the channeled hood member across the lower open side thereof and secured thereto beneath the bridge members 3. The bulb holders 5 mounted on the bridge member 3 extend through registering openings 8 and 9 in the bridge member and reflector into the reflector member for supporting the bulb or bulbs in position on the reflector. The wiring base portion 10 of the lamp holder is on the upper side of the bridge member while the lamp holder proper lies below the bridge member. The bridge member 3 has a downwardly extending pocket 11 to receive the upper base portions 12 of the bulb holders. This pocket has a central horizontal portion for engaging the base 10, the middle bulb holder, and inclined side portions for the two outside bulb holders. The reflector is provided with pockets 12a in which the pockets 11 nest.

The bridge member 3 is secured to the hood 1 by a pair of screws 13 extending through openings in the sides of the hood and threaded into tapped openings in the wing portions 13a of the bridge. An additional support is provided for the bridge in the bracket 14 which supports the reflector 7 underneath the hood. This bracket carries a screw stud 15 at its lower end which extends through an opening in the bridge so that when the reflector is pushed up in place and connected to the hood by means of the swiveled nut 16, the bridge will be clamped between the swiveled nut and the foot of the bracket 14.

The starter switch socket 6 is mounted on a wing portion 17 of the bridge. The side wall of the channel-like hood and the wing portion 17 of the bridge have registering openings 18 in registration with the starter switch socket so that the starter switch 19 may be inserted in the socket through the opening in the side of the hood and may be connected by giving a slight turn to the switch.

Where it is desired to secure two hood sections together, end to end, a splice section 20 is provided (Figs. 7 and 8), having the same general cross section as the hood but telescoping inside the hood sections.

A number of housing sections may be put together to form, in effect, a continuous housing, each single reflector section being fitted with lamp holders, etc., for the two or three lamps of one reflector, or with two sets of such apparatus for the lamps in two reflectors. The splice pieces and also the closing end caps 21 are secured in place and the assembly made rigid by being clamped at either side of the housing between the housing walls themselves and the upturned wings 13a of the lamp holder bridge by the same bolts or screws 13 that hold the lamp holder bridge in place and by a third screw 22 that threads into the top of the splice piece 20

or cap 21 by the screw head engaging on the top or outside of the housing. Slots 23 in the side wings of the splice 20 and cap 21 and a slot 24 in the hood top make it possible, after loosening the securing screws, to slide these pieces into place.

After the hood 1 and parts carried thereby have been installed and it is desired to secure the reflector 7 in place on the hood, the parts are brought to the position shown in Fig. 1, the reflector is raised, to cause the downwardly-extending portions of the lamp holders 5 to enter the openings 9 in the top of the reflector, the swivel nuts 16 are turned to screw them onto the studs 15 to clamp the reflector 7 securely in position and to effect a ground connection.

If for any reason it is desired to remove the reflector from the hood, and the parts carried thereby, the bulbs are first removed from their holders 5, the swivel nuts 16 are loosened to free them from the studs 15, and the reflector is then lowered to the position shown in Fig. 1.

In order to prevent tangling of the wiring, a plurality of spring loops or hooks 25 are provided, secured at their upper ends to the hood and extending downwardly and terminating in a semi-circular hook-like lower end. With this construction, the wires may be slipped into place so as to be retained by hooks as shown in Fig. 4.

In this fixture the ballasts or controls 2 are bolted to the continuous sectional hood or cover 1, and the lamp holders 5 and starter switch sockets 6 are mounted in groups on removable, formed steel plates or bridges 3 which in turn are held up in place in the hood in properly spaced relation.

The reflectors 7 may be completely detached from the hood 1, being supported by a pair of formed straps 14 for each reflector, which straps are secured to the hood.

By this construction, the lamp holders, starter switch sockets, controls, and all of the wiring are entirely within the hood. After the lamps in any reflector are removed, the reflector may be detached by simply unscrewing the two knurled head thumb screws swiveled on the reflector. This detachability of the reflector provides ready access to the lamp holders, wiring, etc., in the hood and enables one style of reflector to be changed for another. It also provides for cleaning of reflectors by immersion in a liquid.

The method of attaching the reflector to the hood not only provides for easy attachment and detachment of the reflector, but also affords an effective ground. The upper porcelain enamel is removed to bare the upper surface of the reflector to a circular pattern slightly greater in diameter than the cupped metal washer 26 over which the upper end of the thumb nut 16 is loosely swaged. A loosely fitting cushion washer 27 is provided to protect the enamel on the underside of the reflector. When the thumb nut is screwed up tightly on the stud 15, the shoulder 28 on the head end of the nut 16 bears against the washer 27 and forces the cupped washer 26 snugly against the bridge and also presses the upper surface of the reflector 7 snugly against the underside of the cupped washer. A ground is thus effected directly between the bared upper surface of the reflector and the under side of the bared metal supporting strap of bridge 3.

These thin metal straps or bridges support and position the lamp holders as well as the starter switch sockets. These bridges, with their lamp holders and sockets, constitute subassemblies, providing accurate spacing and positioning and convenience in wiring and servicing. The starter switches are accessible from the sides of the hood.

Any number of hood sections may be placed together, end to end, to form a continuous housing, underneath which may be supported any number of reflector sections. The housing sections are mechanically joined by means of splices of the same general cross section of the housing which telescope inside the housing sections. The splice pieces or the closing end caps are secured in place and the assembly made rigid by being clamped at each side of the housing or hood between the walls of the hood and the lugs of the lamp holder bridges by means of the same bolts or screws which hold the bridges in place. The housing or hood may be supported in any usual or suitable manner, as by straps attached to the hood, or conductor conduits secured in holes where knockouts are provided in the hood. In order to keep all of the wiring clear of the ballast covers which are apt to reach temperatures above that for which ordinary insulation is intended, the retaining loops 25 are provided, secured to the hood, shaped so as to enable the surplus wire to be snapped over the hooks and held in position, thereby thus avoiding a tangle of wires and leads. The construction is such that while in general two lamps or bulbs are provided in each reflector, a third lamp may be added at any time without dismantling or disturbing insulation, lamp holders, sockets, ballasts, etc.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that the invention be limited only by the scope of the appended claims.

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

1. A lighting fixture for use with elongated tubular fluorescent bulbs comprising an elongated channel-like hood, spaced bridge members extending across said channel and secured to the sides thereof, a trough-like reflector and cover member extending lengthwise of said channel-like hood and across the open bottom thereof and closing its lower side and supported thereby beneath said bridge members, and bulb holders mounted on said bridge member and extending into said reflector member for supporting a bulb in position in said reflector, each bulb holder having a wiring base above the bridge member and having lamp engaging contacts in said reflector, said bridge and reflector having registering openings through which said bulb holders extend, said bridge members and reflector having nesting pockets, and said wiring bases being seated in the pockets in the bridge members.

2. A lighting fixture for use with elongated tubular fluorescent bulbs comprising an elongated channel-like hood, a trough-like reflector member extending longitudinally of said channel member and across the open bottom thereof, bulb holders for supporting a bulb in position in said reflector, and means for securing said reflector to said hood comprising a plurality of screws mounted on said hood and extending downwardly therefrom, a plurality of nuts swiveled on said reflector for engaging said screws, a bracket secured to said hood having a foot portion adjacent the upper surface of the reflector, and a cup-like washer having a swivel connection with said nut and engaging said foot portion and the upper surface of the reflector.

3. A lighting fixture for use with elongated tubular fluorescent bulbs comprising an elongated channel-like hood, a trough-like reflector

member extending longitudinally of said channel member and across the open bottom thereof, bulb holders for supporting a bulb in position in said reflector, and means for securing said reflector to said hood comprising a plurality of screws mounted on said hood and extending downwardly therefrom, a plurality of nuts swiveled on said reflector for engaging said screws, a bracket secured to said hood having a foot portion adjacent the upper surface of the reflector, and a cup-like washer having a swivel connection with said nut and engaging said foot portion and the upper surface of the reflector, the upper surface of said reflector being coated with vitreous enamel and bared to expose the metal for engagement with said washer.

4. A lighting fixture for use with elongated tubular fluorescent bulbs comprising an elongated channel-like hood, a trough-like reflector member extending lonigtudinally of said channel member and across the open bottom thereof, bulb holders mounted in fixed position relative to said hood as the hood and reflector member are being assembled for supporting a bulb in position in said reflector, said reflector having openings through which said bulb holders extend and causing initial registration between the reflector and hood, said reflector and hood being provided with other interengaging means for securing final registration between the reflector and hood in assembly and means for securing said reflector to said hood comprising a plurality of screws mounted on said hood and extending downwardly therefrom, and a plurality of nuts swiveled on said reflector and operable from the inside of said reflector for engaging said screws.

PAUL D. PHILLIPS.