April 28, 1942. A. J. D. OHM 2,281,379

ELECTRIC LIGHTING FIXTURE

Filed May 5, 1941

Fig. 1.

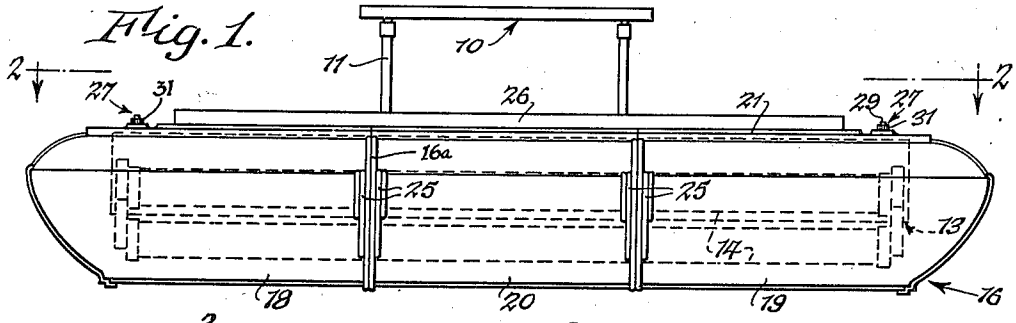


Fig. 2.

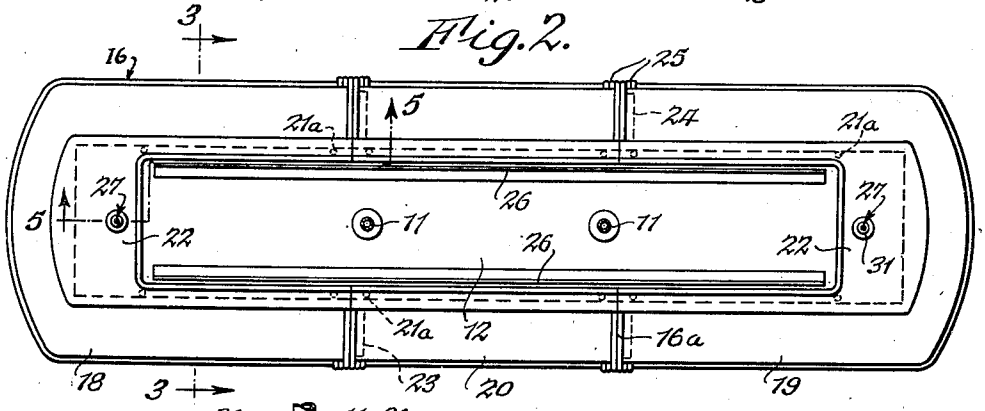


Fig. 3.

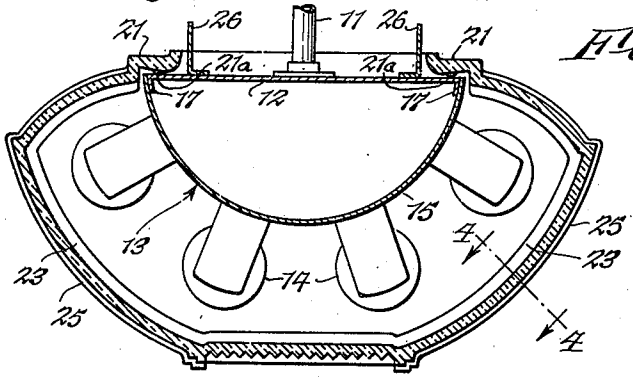
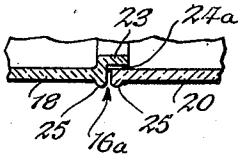


Fig. 4.



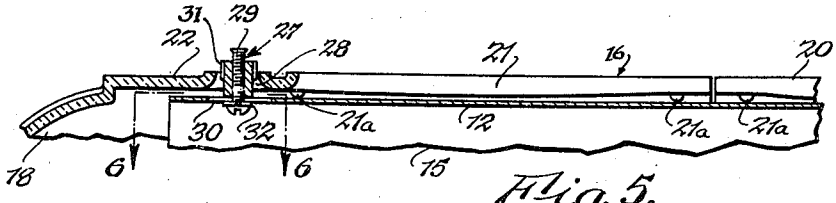


Fig. 5.

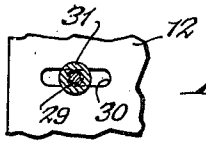


Fig. 6.

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ELECTRIC LIGHTING FIXTURE

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Application May 5, 1941, Serial No. 391,905

3 Claims. (Cl. 240—78)

This invention relates to improvements in electric lighting fixtures of the fluorescent tube type and more particularly is concerned with a fixture of the kind having an elongated sectional diffuser for modifying the light emitted by the lamp, or lamps, of the light source.

One object of the invention is to provide a fixture which is so designed that substantial tolerances are permissible, in so far as the shapes and dimensions of the diffuser sections are concerned, and may be compensated so as to enable assembling of the sections in the close relation necessary to achieve the desired unitary and ornamental appearance of the diffuser.

A further object is a fixture of the type generally described wherein provision is made for insuring proper seating of the diffuser sections upon the supporting body.

A still further object is to provide for facility in assembling the fixture and in removing the sections of the diffuser to enable inspection, removal and replacement of the lamps of the light source.

The invention is illustrated in the accompanying drawing in which:

Figure 1 is a side elevation of a fixture embodying the features of the invention.

Figure 2 is a horizontal section taken along line 2—2 of Figure 1.

Figure 3 is an enlarged transverse section taken along line 3—3 of Figure 2.

Figure 4 is a fragmentary section taken along line 4—4 of Figure 3.

Figure 5 is an enlarged detail section taken along line 5—5 of Figure 2.

Figure 6 is a detail section taken along line 6—6 of Figure 5.

The fixture, as illustrated, is of the fluorescent tube type and may be suspended from the ceiling by a hanger assembly 10, rods 11 thereof being suitably connected to the flat top wall 12 of a semi-cylindrical shell 13. The tubes 14 which provide the light source are mounted in parallel relation upon the curved lower wall 15 of the shell and are employed in connection with an elongated diffuser 16, the longitudinal edges of the top wall being downturned to provide flanges 17 and the corresponding edges of the lower wall overlapping and being suitably secured to said flanges.

The diffuser 16 may be of glass or any other suitable material; and it may be either transparent or translucent or have certain zones which are transparent and others which are translucent. It comprises an assembly of preformed, separable sections which are arranged end-to-end and, in the embodiment illustrated, includes end sections 18 and 19 and a central section 20. The outer ends of the end sections are closed and their inner ends are open while both ends of the central section are open. All of the sections are closed at their bottoms and have side walls which terminate at their tops in inwardly extending side flanges 21 and, in the case of the end sections, join, or form continuations of, end flanges 22. Nodes 21*a* which are formed or provided upon the under sides of the flanges 21 adjacent the opposite ends of the sections rest upon the marginal, or seat providing, portions of the top wall of the shell 13 and serve to support the flanges in spaced relation with respect to said top wall. In other words, the nodes 21*a* insure engagement of the opposite ends of the sections of the diffuser with the shell despite variations in the thickness of the side flanges, which variations, unless compensated for in the manner described, might otherwise permit the said sections to rock upon the shell. Although each diffuser section is illustrated as being supported by four of the nodes 21*a*, it is understood, of course, that this is intended by way of example only.

The diffuser sections are supported upon the shell 13 in the manner described so that the open end of the section 18 abuts one of the open ends of the section 20 while the open end of the section 19 abuts the other open end of the section 20, thereby to provide a continuous, elongated envelope which encloses the shell 13 and the tubes 14, the side and end flanges of the said sections overlying the top wall of the shell and defining a substantially rectangular opening. In order to prevent the escape of direct light through the joints 16*a* between the abutting ends of the diffuser sections, the section 18 is preferably formed with a neck portion 23 (Figure 4) which enters the adjacent end of the section 20 while the opposite end of the latter section is formed with a similar neck portion 24 (Figure 2) which enters the open end of the section 19. Preferably the neck portions 23 and 24 of the sections 18 and 20, respectively, are corrugated or otherwise deformed, as illustrated, whereby to provide passages 24*a* through which air may circulate to cool the tubes and associated parts. A certain amount of air which enters the diffuser may, of course, escape through the spaces at the top of the diffuser between the side and end flanges of the sections and the top wall of the shell. In order to prevent the joints 16*a* from detracting from the appearance of the dif-

fuser, cooperating ornamental designs 25 are formed upon the marginal edges of the open ends of the end sections and central section, the said designs preferably comprising groups of bead-like embossments and the designs upon the ends of the end sections cooperating with the designs upon the ends of the central section to provide composite ornamental figures having character strokes running parallel with and at opposite sides of the joints. The joints are thus effectively obscured and at the same time the appearance of the fixture is enhanced.

Longitudinally extending angle members 26 which are mounted upon the top wall of the shell 13 serve as guides and cooperate with the marginal edges of the side flanges of the diffuser sections to limit sidewise movement of the sections upon the shell. Lengthwise movement of the diffuser sections upon the shell is prevented by posts 27, one of which is located adjacent each end and substantially midway between the sides of the top wall of the shell. One of the posts extends through an opening 28 in the end flange of one of the end sections of the diffuser while the other post extends through a similar opening formed in the end flange of the other end section, the posts being caused to enter the openings 28 and being withdrawn from them by elevating the outer ends of the end sections.

The posts cooperate with the walls of the openings 28 to hold the end sections 18 and 19 in positions in which their open ends interfit with the open ends of section 20 in such a manner that while the joints 16a will permit the circulation of air in the manner described they will not be wide enough to destroy the desired unitary effect created by the embossments of the designs 25 or impair the ornamental appearance of the fixture. In order to insure such cooperation between the posts and the walls of the openings 28, while providing substantial permissible tolerances in so far as the shapes and dimensions of the diffuser sections are concerned, provision is made whereby the posts may be adjusted lengthwise of the shell 13. To this end each of the posts includes a screw 29, the threaded shank of which extends through a slot 30 which is formed in the top wall of the shell and which extends lengthwise thereof. A sleeve 31 which is carried by the shank of the screw serves as a nut and may be loosened to permit adjustment of the screw along the slot and tightened to secure it in the desired position. The upper end of the sleeve, which may be knurled if desired, extends through the opening in the end flange of the end section and projects above the end flange to provide a head which may be grasped and turned to tighten or loosen the post.

Preferably the sleeves 31 are loosened when the posts are caused to enter the openings 28 during assembling of the sections of the diffuser upon the shell 13. This will facilitate adjustment of the posts to enable the open ends of the end sections to be located in the desired relation with respect to the open ends of the central section. After the end sections are properly adjusted the sleeves 31 may be tightened to lock the posts in their adjusted positions. Thereafter the sleeves 31 will engage the walls of the openings 28 to prevent separation of the diffuser sections. In the embodiment of the invention illustrated each of the posts 27 is tightened by pulling the sleeve 31 upwardly as it is turned, whereby to cause a locking washer 32 to be engaged between the head of the screw 29 and the underside of the top wall of the shell. Turning of the screw will thus be prevented, the peened-over end of the shank of the screw preventing loosening of the screw to a greater degree than required when it is desired to adjust the posts.

From the foregoing it will be apparent that the central section of the diffuser may be slipped over either end of the shell 13 and that it is held in place by the end sections. Facility in assembling the diffuser and in removing the sections to enable inspection, removal, and replacement of the tubes is thus insured. The construction described has the further advantage that a fixture having any desired length of diffuser may be assembled (assuming a shell of the proper length to have been provided) by adding additional sections similar to the section 20 between the end sections. On the other hand, a fixture having a shorter diffuser may be provided, if desired, by eliminating the central section and arranging the end sections so that their open ends interfit, it being noted in this connection that the open end of the section 18 is male while that of the section 19 is female and that one end of the central section 20 is male and the other end female. Any desired number of sections may, therefore, be assembled to provide a diffuser of the length required to accommodate any particular length of tubes. The use of separate molds for different lengths of diffusers is thus rendered unnecessary.

It will be understood, of course, that although fluorescent tubes are referred to as providing the light source, this is intended by way of example only and that, if desired, any other type of lamp, tubular or otherwise, may be employed instead.

I claim as my invention:

1. An electric lighting fixture of the character described including a body, a light source mounted on said body, a diffuser for modifying the light emitted by said light source comprising a plurality of pre-formed sections, including an end section, arranged horizontally end-to-end on said body to provide an elongated assembly and having longitudinally-extending side flanges, means for providing parallel, longitudinally-extending guides for said side flanges at opposite sides of said body, and an element carried by and adjustable lengthwise of said body, said element having a head which may be tightened to secure the element in its various positions of adjustment and which is engageable with said end section to hold it in the desired position on said body, said guides permitting said sections to be assembled on said body and to be removed therefrom only by moving them lengthwise in substantially the same horizontal position in which they are supported and then only when said end section is elevated to disengage it from said head.

2. An electric lighting fixture of the character described including a body, an upwardly projecting element which is adjustable on and lengthwise of said body and which may be secured in any of its various positions of adjustment, a light source carried by said body, a diffuser for modifying the light emitted by said light source comprising a plurality of pre-formed sections, including an end section, arranged horizontally end-to-end on said body to provide an elongated assembly and having longitudinally-extending guides for said side flanges at opposite sides of said body, said end section also being formed with an end flange which is engageable with said element to hold said section on said body, said guideways permitting said

sections to be assembled on said body and to be removed therefrom only by moving them in substantially the same horizontal position in which they are supported and then only when said end section is elevated to disengage said end flange from said element.

3. An electric lighting fixture of the character described including a body having top and bottom walls, an upwardly projecting element on said top wall adjacent an end thereof, said element being adjustable lengthwise of said body and having a head which may be tightened to secure it in its various positions of adjustment, a light source carried by said body, a diffuser for modifying the light emitted by said light source comprising a plurality of pre-formed sections, including an end section, arranged horizontally end-to-end on said body to provide an elongated assembly and having longitudinally-extending side flanges, means carried by said body for providing parallel, longitudinally-extending guides for said side flanges at opposite sides of said body, said end section being formed with an end flange which in turn is formed with an opening in which said head is accommodated to hold said section in the desired position on said body, said guides permitting said sections to be assembled on said body and to be removed therefrom only by moving them lengthwise in substantially the same horizontal position in which they are supported and then only when said end section is elevated to withdraw said head from said opening.

ALBERT J. D. OHM.