Dec. 31, 1946. D. H. TUCK ET AL 2,413,666

DUST TIGHT FLUORESCENT LIGHTING LUMINAIRE

Filed June 10, 1944

Fig. 1.

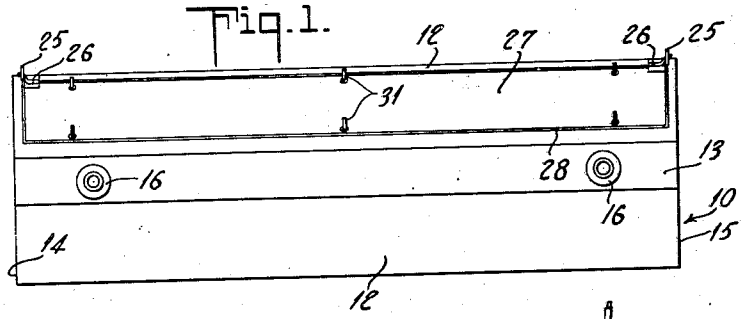


Fig. 3.

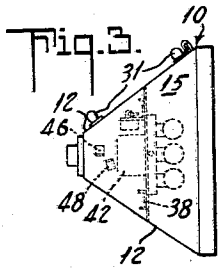


Fig. 2.

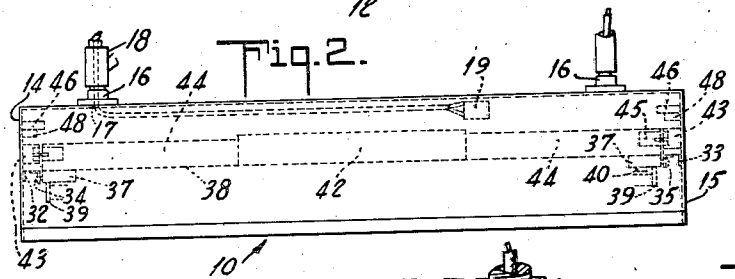


Fig. 4.

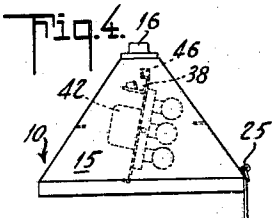


Fig. 5.

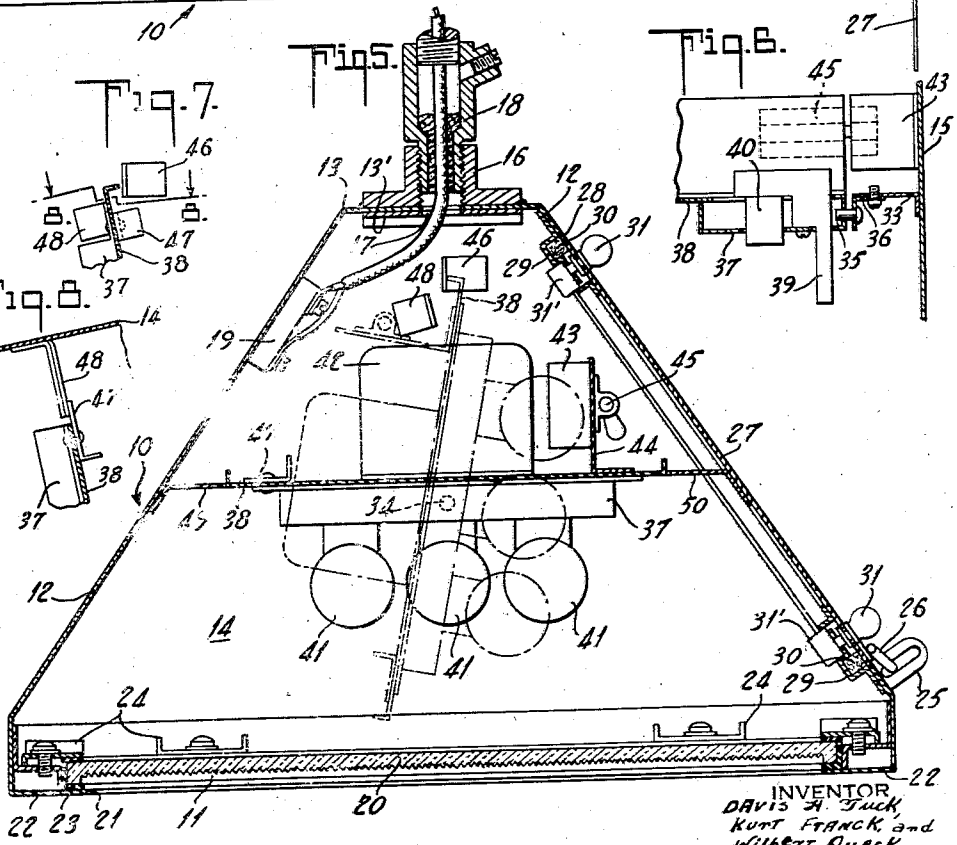


Fig. 6.

Fig. 7.

Fig. 8.

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DUST TIGHT FLUORESCENT LIGHTING LUMINAIRE

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4 Claims. (Cl. 240—78)

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The present invention relates to dust tight fluorescent lighting luminaires.

Dust tight fluorescent lighting luminaires are generally made in individual units somewhat more than four feet long or five feet long, depending upon whether the 40 or 100 watt lamps are to be employed, and have a glass window in the bottom usually a foot or more wide. In the usual constructions the metallic body of the fixture hingedly supports a frame which carries the light transmitting material, usually glass, which must be opened each time the fixture is to be serviced and then closed. Various gasketing devices and clamping devices have been employed for securing dust tight gasketed joints about the frame. Owing to the size of the apparatus the hinged closure is necessarily very heavy and the frame lacks rigidity. When the fixture is opened for servicing the hinged frame and glass must hang down from one side of the fixture thereby placing an eccentric load on the fixture and supports causing an unnecessary strain on the supports and twisting the fixture somewhat out of position. There is more or less likelihood that in reclosing the fixture the joint made will not be as dust tight as desirable, and there is no way of detecting any defect in the tightness of the joint.

The present invention contemplates dust tight luminaires using fluorescent lamps wherein the light transmitting closure is permanently sealed in place in the enclosing housing, so that it is not disturbed in the servicing of the fixture, and thereby avoiding disturbing gaskets around it.

According to the present invention the side of the fixture is provided with a large door which can be swung open to provide access to the interior of the fixture housing for servicing and maintenance as well as for the insertion of the electrical equipment for the fixture. This door being a metal door is light in weight and can be very securely clamped against suitable gaskets carried by the metal housing. The present invention therefore avoids disturbing the gasket connections around the glass or between the glass carrying frame and the fixture body. In order to facilitate servicing the fixture when the door is opened, the present invention contemplates pivotally mounting the lamp supports so that the lamps may be shifted from adjacent the window to be adjacent the door.

Other and further objects will hereinafter appear as the description proceeds.

The accompanying drawing shows, for purposes of illustrating the present invention, an

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embodiment in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In this drawing:

Figures 1 and 2 are top plan and side elevational views of the luminaire;

Figure 3 is an end elevational view of the luminaire;

Figure 4 is an end elevational view showing the door open and the lamp carrier shifted to bring the lamps opposite the door opening;

Figure 5 is an enlarged cross sectional view through the fixture showing the parts in normal operating position in full lines and showing in dot-and-dash lines the position for servicing the lamps;

Figure 6 is a fragmentary longitudinal sectional view with parts in elevation;

Figure 7 is a fragmentary elevational view illustrating the parts in position to place the ballast adjacent the door opening; and

Figure 8 is a section on the line 8—8 of Figure 7.

The luminaire shown in the drawing employs a dust tight enclosure having an upper metal lamp housing 10 and a light transmitting window 11.

The metal housing 10 has sloping side walls 12, 12, a top 13 provided with a stiffener 13' and ends 14 and 15 and inturned flanges 22 at the bottom. The top of the housing is provided with pipe flanges 16, 16, one of which is opposite the wire opening 17. The latter flange carries a sealed fitting 18 whereby the entrance wires may be sealed in a gas tight manner. The entrance wires may be carried over to a terminal block 19.

The window 11 in the bottom of the housing has one or more glass plates 20 preferably with suitable prismatic contour for light control. These glass plates or lenses are fitted into the opening 21 provided in the inturned flanges 22, 22 carried by the metal housing. Suitable elastic gasketing material indicated at 23 is placed around the periphery of the lens plates. They are clamped against this gasketing material by suitable clamp plates indicated at 24.

The side wall 12 of the housing is here shown as having two slotted lugs or ears 25, 25 which receive hinge links 26. These hinge links are secured to a sheet metal door 27. The side wall 12 is provided with an opening 28 which extends nearly the entire length of the side wall of the enclosure and almost from top to bottom. This opening in the side wall of the fixture is framed

by angle pieces such as indicated at 29, 29 adapted to carry gasket material 30. The door is clamped against this gasket material by clamping devices 31 preferably sealed against leakage by caps 31'.

The end walls 14 and 15 carry horizontal inwardly extending brackets 32 and 33, one of which carries a small pivot pin indicated at 34, while the other carries a similar pivot pin 35 on a detachable angle 36. The pins 34, 35 support socket housings 37, 37 welded to a flat plate 38, so that this plate can be turned on the pins as pivots.

The plate 38 carries fluorescent lamp holders or sockets 39, 39 and starter sockets 40 (when employed) so that three fluorescent lamps 41, 41, 41 may be carried below the plate 38. The upper side of the plate carries the auxiliary ballast 42. The end walls 14 and 15 carry brackets 43, 43 and the plate 38 carries baffle members 44, 44. These baffle members and the brackets 43, 43 carry locking devices indicated at 45 whereby the plate 38 may be locked in the horizontal position shown in full lines in Figure 5. When the door is open the locking devices 45 may be released and the plate 38 tilted from the full line position in Figure 5 to the position shown in dot-and-dash lines where the edge of the plate 38 will be brought against a stop 46. The weight of the auxiliary will hold the parts in this position and the lamps may be readily removed and replaced through the door opening.

Should occasion arise to inspect the transformer or the wiring connections which are above the plate 38, the plate can be swung in the other direction, as shown in Figures 7 and 8, so as to bring the ballast toward the door opening and then it can be locked in this position by a small locking lever 47 adapted to engage a lever rest 48 carried by the end wall of the housing. Baffle plates 49 and 50 together with the plate 38 divide the enclosure into two chambers. The walls of the lower chamber are painted white.

The assembly of the electrical parts of the fixture is preferably completed outside the housing and the wiring connected to the terminal block indicated at 19. The entire assembly of ballast, sockets and wires may be passed in through the door opening, placed on the fixed pivot pin 34 and then the other pivot pin 35 fastened in place so as to hold all the parts in the proper position.

While the present drawing illustrates the invention applied to dust tight lighting equipment designed for symmetrical light distribution, it will be understood that the invention is also applicable to lighting equipment wherein the bottom lens plates are tilted to the horizontal rather than in a horizontal position, and, if desired, provisions may be made whereby the lamps and associated parts may be mounted in various positions within the enclosure so as to secure selected asymmetric distributions.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claims, we wish it to be understood that the particular form shown is but one

of these forms, and various modifications and changes being possible, we do not otherwise limit ourselves in any way with respect thereto.

What is claimed is:

1. A dust tight lighting fixture for rectilinear fluorescent lamp of predetermined length comprising a body having top, side and bottom walls longer than the lamp length and end walls, the bottom wall having a framed opening occupying substantially its entire length and width, a light transmitting closure permanently secured in place to close the opening, one of the side walls having an opening occupying substantially its entire length and width, a door carried by this side wall and of a size to close the side opening, means to seal the door in closed position, an electrical assembly including a plate, fluorescent lamp auxiliaries, wiring and sockets carried thereby, the assembly being insertable into or removable from the fixture body by being passed through the side opening, the body and plate having cooperable releasable devices for supporting the plate in place in the body, and fluorescent lamps insertable through the side opening and into the sockets or removable from the sockets and through the side opening.

2. A unit such as claimed in claim 1, wherein the plate is pivoted at its ends to swing about a horizontal axis whereby it can be tilted in one direction to bring the lamps toward the door opening to facilitate lamp removal and replacement or in the other direction to bring the auxiliary close to the door opening.

3. A direct lighting unit for fluorescent lamps having an elongated lamp housing, a normally horizontal lamp supporting plate pivotally supported within the housing to swing about a horizontal axis, means for holding the plate in normal position, a plurality of fluorescent lamp holders and fluorecent lamps carried by the plate below it, a lamp auxiliary carried by the top of the plate, the side of the housing having a door opening, a door for the opening, and stops carried by the housing which permit turning the plate in one direction to bring the lamps toward the door or in the other direction to bring the auxiliary toward the door.

4. A dust tight fluorescent lighting luminaire having a dust tight lamp enclosure with a light transmitting window in the bottom thereof permanently sealed in place, a removable dust tight door in one side wall of the enclosure, a normally horizontal plate carrying a plurality of fluorescent lamp sockets and an auxiliary, the plate with attached parts being insertable into the housing through the door opening and removable through the same, means for pivotally supporting the plate at its ends so that either the upper or the lower face of the plate, with attached parts, may be turned toward the door, and a releasable locking device for holding the plate in position to place the upper face of the plate adjacent the window.

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