

Dec. 7, 1943.

B. A. MITCHELL

2,336,414

LIGHTING FIXTURE

Filed Dec. 11, 1941

4 Sheets-Sheet 1

FIG. 2.

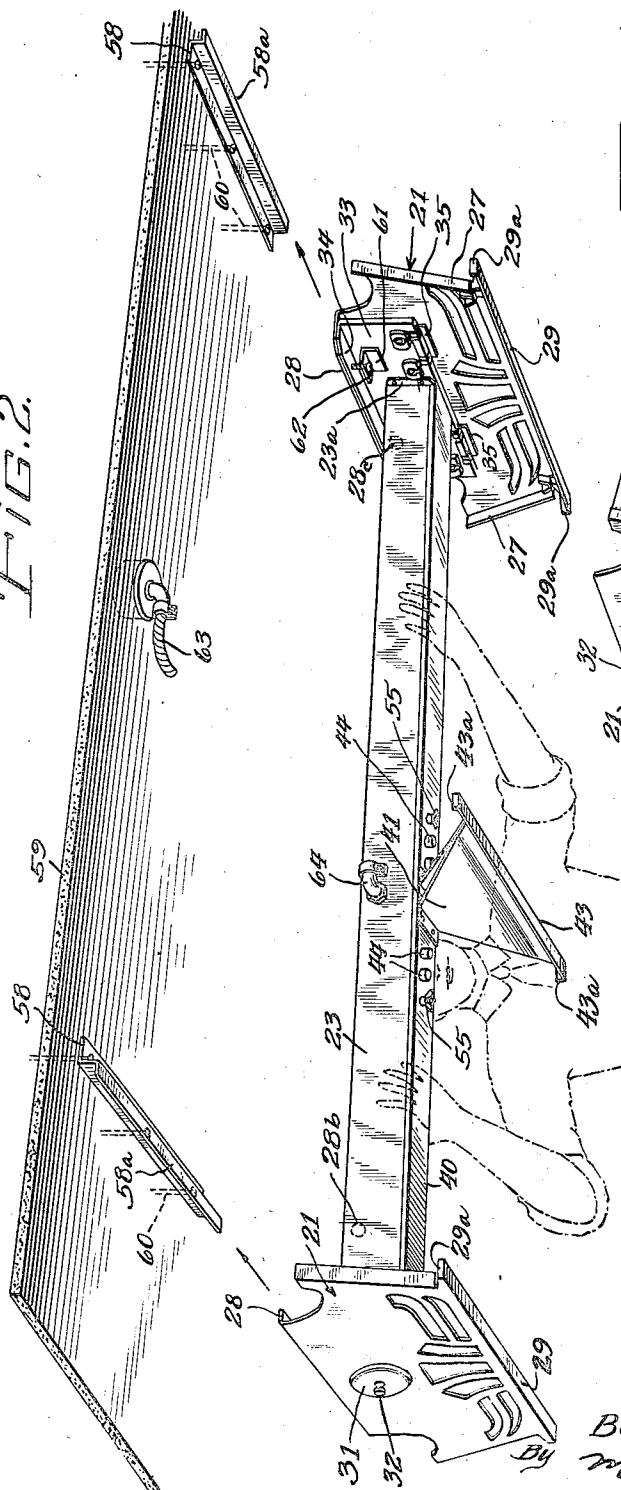


FIG. 1.

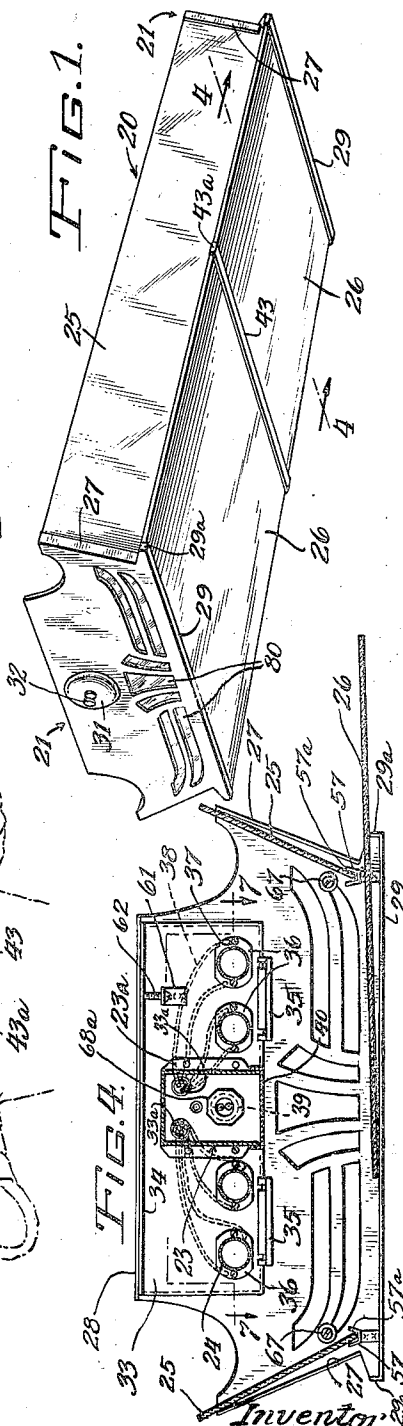
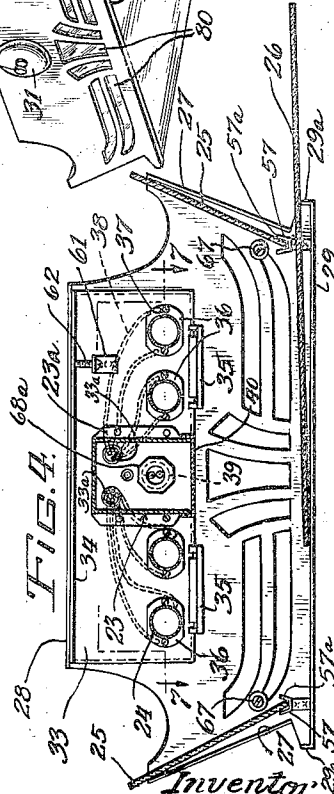


FIG. 4.



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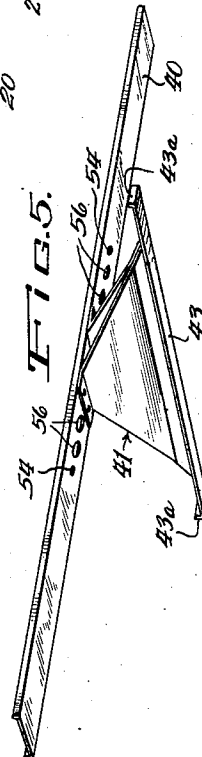
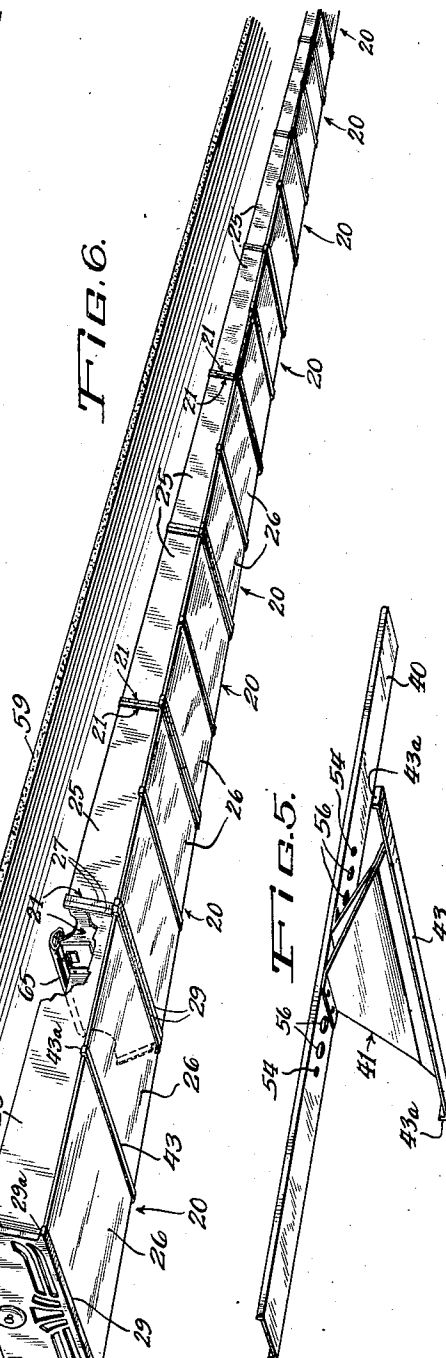
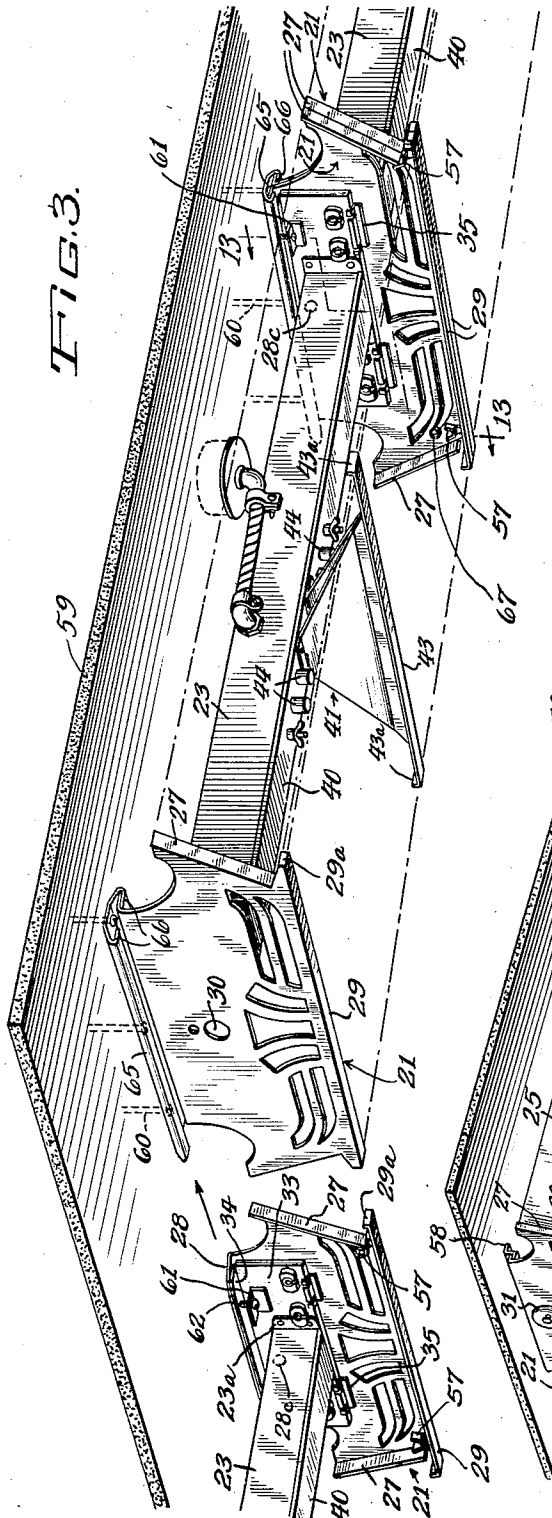
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4 Sheets-Sheet 2



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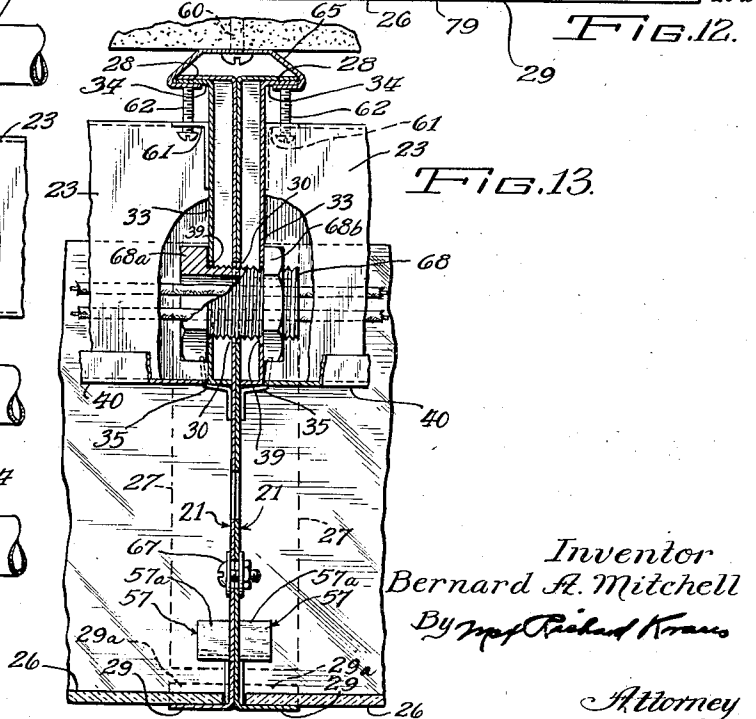
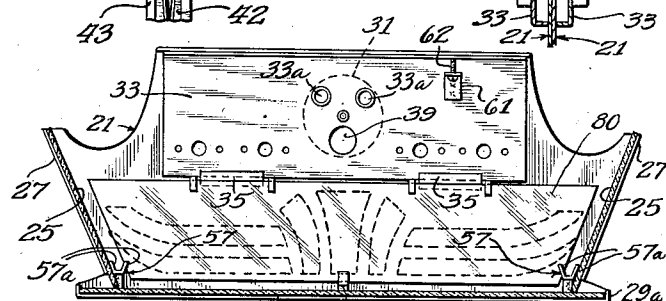
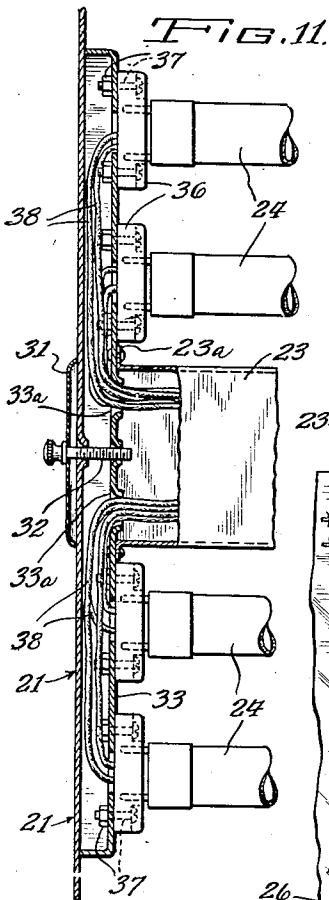
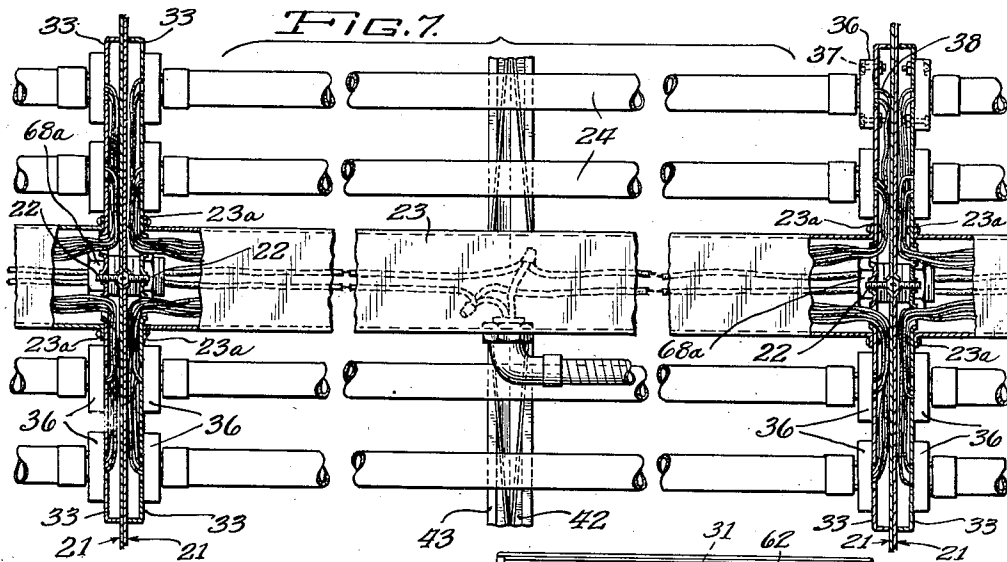
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LIGHTING FIXTURE

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4 Sheets-Sheet 3



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2,336,414

LIGHTING FIXTURE

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FIG. 8.

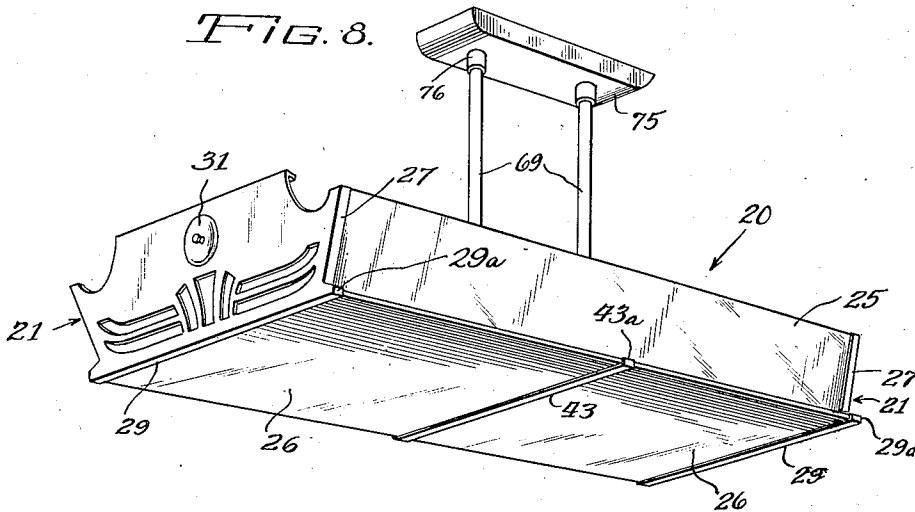


FIG. 9.

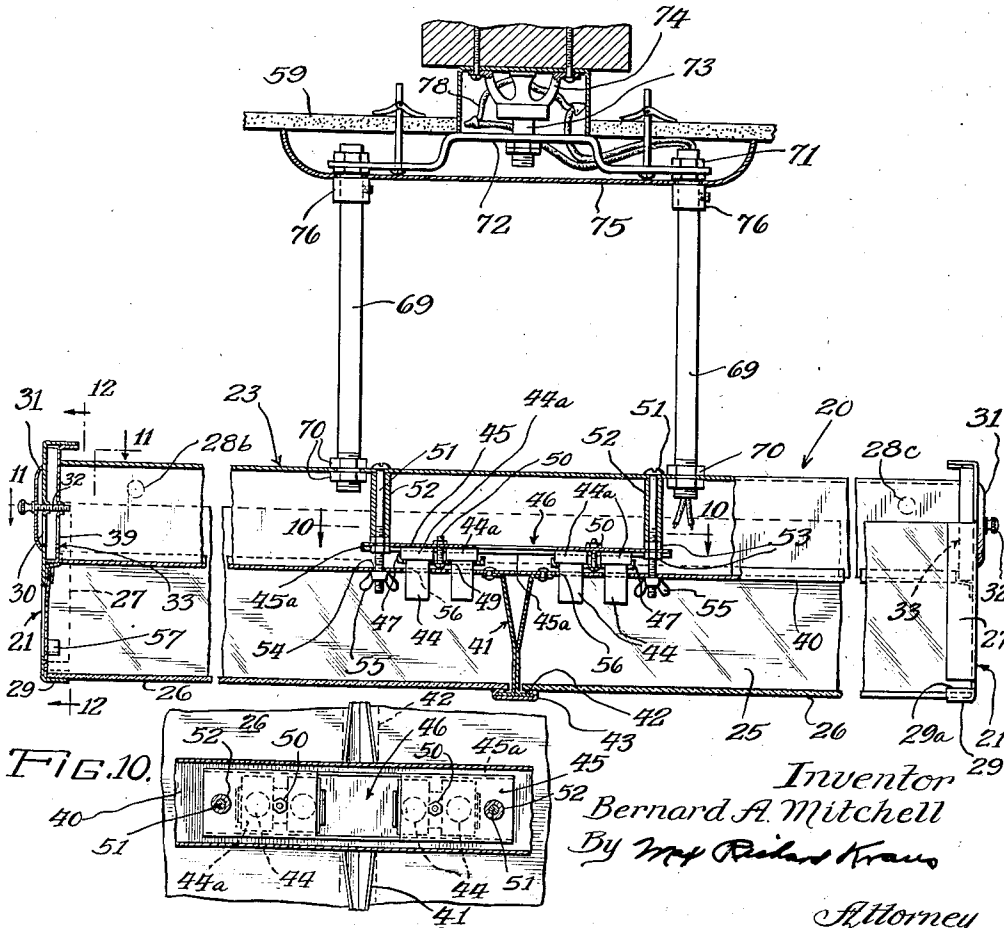


FIG. 10.

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UNITED STATES PATENT OFFICE

2,336,414

LIGHTING FIXTURE

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Application December 11, 1941, Serial No. 422,491

8 Claims. (Cl. 240-78)

This invention relates to improvements in lighting fixtures and more particularly to fluorescent lighting fixtures.

One of the objects of my invention is to provide a standardized fixture which may be readily mounted either in pendant mounting, individual ceiling mounting or continuous row mounting, thus considerably eliminating the supply of fixtures necessary in any particular style or model.

Another of the objects of my invention is to provide a standardized fluorescent fixture readily adaptable for various types of mountings.

Another object of this invention is to provide a fixture of the foregoing character which may be easily and quickly installed, which may be quickly relamped and easily maintained or repaired and which has a high lighting efficiency with a low surface brightness.

Another object is to provide a fixture which is economical to manufacture and to maintain in operating condition.

Other objects will become apparent as the description progresses.

In the drawings

Fig. 1 is a perspective view of my fixture.

Fig. 2 is a perspective view showing the manner of mounting the individual fixture on a ceiling.

Fig. 3 is a perspective view showing the manner of mounting a plurality of fixtures on a ceiling in a continuous row.

Fig. 4 is a cross sectional view taken on line 4-4 of Fig. 1, but showing the side panels in elevated position and the bottom panel partly removed.

Fig. 5 is a perspective view of the cover and glass panel supporting member.

Fig. 6 is a perspective view showing the appearance of a plurality of fixtures when mounted in a ceiling in a continuous row.

Fig. 7 is a sectional view taken on line 7-7 of Fig. 4.

Fig. 8 is a perspective view showing the fixture mounted by a pendant.

Fig. 9 is a longitudinal cross sectional view of the structure shown in Fig. 8.

Fig. 10 is a sectional view taken on line 10-10 of Fig. 9.

Fig. 11 is a sectional view taken on line 11-11 of Fig. 9.

Fig. 12 is a sectional view taken on line 12-12 of Fig. 9.

Fig. 13 is a sectional view taken on line 13-13 of Fig. 3.

The fixture indicated generally at 20 is formed of a pair of end members 21, a longitudinal tubular body or housing 23, fluorescent lighting tubes 24, and side and bottom glass panels 25 and 26 respectively.

The end members are identical in size and shape and have converging side flanges 27, and horizontal top and bottom flanges 28 and 29 respectively. The bottom flange 29 has upturned ends 29a. An opening 30 is provided in each end member and permits end entrance into the interior of the housing 23. This opening is covered by an ornamental disc 31, which is held in place by a threaded bolt 32 passing through the end members 21 and the socket plates 33 hereinafter to be described.

The socket plate 33 is held in place against the end member 21 by the bolt 32 when the fixtures are individually mounted. However when the disc 31 is removed for end to end mounting of the fixtures, as will more presently be described, a flat head screw 22 (Fig. 7) is substituted.

The socket plate has an inwardly bent portion 34 underlying the flange 28. A pair of bracket members 35 additionally secures said socket plate to said end member. The fluorescent tube sockets 36 are secured as by bolts and nuts 37 to the socket plate, and it will be seen that the plane of the socket plate is spaced from the end plate (Fig. 7) to accommodate the conducting wires 38 which lead from the socket and are passed to the interior of the housing 23 through the two openings 33a provided in the socket plate 33. The socket plate has an opening 39 in alignment with the opening 30. Also secured on the plate 33 under the portion 34 is a right angled member 61 which carries a clamping bolt 62 for a purpose more presently to be described.

The housing 23 is rectangular shaped in cross section and has secured to its opposite ends the socket plates 33, which are secured by rivets passing through the flanged ends 23a of the housing. Three knockouts are provided on each side of the housing (only two 28b and 28c being shown) so that an outlet 64 can be connected to said housing in any of said spots when the knockout is removed. Two knockouts not shown, are provided in the top of the housing for use when the fixture is pendant mounted as shown in Figs. 8 and 9. The housing is open along its bottom and is adapted to be closed by a flanged cover 40.

Secured to the cover 40 intermediately thereof as by rivets, are a pair of substantially triangu-

larly shaped supporting plates 41 having oppositely directed flanges 42. The plates are bent so as to be spaced from each other adjacent their upper portions, but are contiguous along their lower portions. A channel bar 43 partially encloses the flanges 42 and serves to hold the plates together. The channel bar has upwardly bent end portions 43a.

The electrical units such as the starter sockets 44a, the starters 44, the ballast (not shown) and the wiring are all housed in the housing 23. The construction for supporting the starters and their sockets is best seen in Figs. 9 and 10 and comprises a rectangularly shaped metal member 45 provided with longitudinally flanged sides 45a and a central opening 46. The sockets 44a are supported in pairs by a flanged clamp 47 secured by bolt and nut 50. The starter sockets 44a rest on the clamp while the starter 44 extends through an opening 49 in the clamp. Replacement of any starter may be easily effected merely by withdrawing the starter from its socket. The plate 45 is secured from the top of the housing 23 by means of bolts 51 and is spaced therefrom by sleeves 52 being secured by lock nuts 53. The bolts 51 are longer than the depth of the housing 23 and extend through openings 54 in the cover 40 of the housing. Wing nuts 55 serve to hold the cover 40 in place and thus enclose electrical operating elements of the fixture. The cover 40 is also provided with openings 56 through which partially extend the starters 44. Removal of the cover 40 for access to the interior of the housing 23 may be easily affected by removal of the wing nuts 55.

The side glass panels 25 rest on the side flanges 27 of the end plates 21 and are supported on the bottom flange 29. A pair of U shaped clips 57 are secured to each of the end plates 21 and are spaced with respect to the side flanges 27 so that the glass panel 25 normally will be positioned between the wing 57a of the clip 57 and the flange 27 and will be held in place against accidental displacement. Each of the two bottom glass panels 26 rest on the flanges 42 and 29 of the center supporting plate 41 and end member 21 respectively, accidental lateral displacement of the panels being prevented by upturned ends 43a and 29a. For maintenance of the fixture, particularly where the fixture is mounted directly to the ceiling, the side panel 25 is elevated slightly and placed in the clip 57. This permits the bottom panels 26 to be wholly or partially withdrawn, as shown in Fig. 4, and permits access to the interior of the fixture for repair, replacement or cleaning. A plastic window 80 (Fig. 12) is mounted adjacent the inside of the end member 21 and is held in place by the lower portions of the brackets 35 and a clip 79. When the fixtures are mounted end to end, the plastic windows are removed.

If it is desired to mount the fixture in the ceiling as an individual unit, two ceiling tracks 58, shown in Fig. 2, are secured to the ceiling 59 by expansion or toggle bolts 60, with the trackways 58a facing outwardly. The fixture is then positioned so that the flanges 28 of the end members 21 are slid onto the trackway 58a, as shown in Fig. 2, and rest thereon. When the fixture is properly positioned, the clamping bolt 62 is tightened to engage the underside of the trackway and to maintain the fixture against accidentally sliding off said track. The flexible conduit 63 connected to a ceiling electrical outlet is coupled to the outlet 64 on the housing 23 and it is through

this conduit that the wire conductors are passed to the interior of the housing 23.

To mount the same fixture in a continuous row mounting, as shown in Fig. 6, I provide a ceiling supporting track 65 which is a channel having opposed inwardly directed trackways 66. This supporting track is secured to the ceiling by suitable expansion or toggle bolts, and is adapted to secure two adjacent end members 21, clearly shown in Fig. 3. The supporting track 65 is first spacedly secured to the ceiling, where the two end members 21 would adjoin each other. In a continuous mounting the single track 58 is also used to support the outermost end members 21. In mounting the fixture in a continuous row the disc 31 is first removed from all of the end members which will be positioned contiguous to other end members, thus exposing the openings 30 of each. The flat head screw 22 is substituted to hold the end member 21 and socket plate 33 together. The fixture 20 is slid in the supporting track 65 with the flanged portions 28 and 34 resting on one of the trackways 66. The adjoining fixture is also slid into the same trackway so that one end member 21 thereof is contiguous to the end member of the adjoining fixture and the trackway will support both end members end to end. When properly positioned the clamping bolt 62 is tightened.

When the end plates 21 are end to end, a bolt and nut 67 can be passed through the fillgre work to hold same together. The openings 30 communicating with the interior of the housing will be in alignment with each other. A nipple 68 is then fitted into the openings 30 and 39 of each of the two adjoining fixtures and serves to maintain the end members 21 in alignment (as well as their respective socket plates) and in addition provides a passageway through which the conductors or wires are passed from one fixture to another into the housing of each fixture as clearly shown in Fig. 7. The nipple has a head 68a at one end and is locked in position by a nut 68b. One or more unit fixtures may be easily removed without disturbing any of the others in the same series.

In connection with wiring the fixtures in an end to end mounting, only one ceiling electrical outlet need be tapped and the fixture nearest said outlet can be connected by a flexible conduit 63 and coupled to the housing outlet 64. It will be seen that though I have shown the housing outlet 64 connected to the center of the housing 23, that for convenience, the outlet can be secured to the other parts of the housing when the knockouts 28b and 28c are removed from the housing. Similar knockouts are provided on the opposite side of the housing. The wire conductors are then passed through said conduit to the housing and through each of the housings of the series of fixtures and each of said fixtures in the series is electrically connected with the source of current supply.

In Figs. 8 and 9 the same fixture is shown adapted for pendant mounting and in such cases the knockouts (not shown) which are in the top of the housing 23 are removed so that the stems 69 are secured to said housing by the locknuts 70. The upper ends of the stem are secured by locknuts 71 to the ceiling bracket 72 which in turn is suitably secured to an extension 73 of the crowfoot 74 suitably anchored to the ceiling. A canopy 75 held in place by bushings 76 encloses and hides from view the ceiling bracket

and the crowfoot. The conductor wires 78 pass through one of the hollow stems 69 into the interior of the housing 23.

As seen, this invention provides a standard fixture which may be used either for pendant mounting, individual ceiling mounting or continuous row mounting without requiring any change of size, style or model of construction.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. In a fluorescent lighting fixture, said fixture comprising end members, a socket plate secured to each of said end members and spaced from said end members, said socket plate supporting a plurality of sockets, a housing having its opposite ends secured to said socket plate, a plate supported within said housing by a plurality of bolts, a plurality of starters for said fixture clamped to said plate and readily removable therefrom, and a cover for said housing, said cover held in covered position by means fastened to said bolts.

2. In a fluorescent lighting fixture, said fixture including a pair of end members, a socket plate secured to said end members, a housing secured to said socket plate within which housing is contained the electrical elements for operating said fixture, glass panels for the bottom and sides of said fixture resting on said end members, means on said end members for preventing lateral displacement of said side panels, and means maintaining said side glass panels in elevated position to permit withdrawal of said bottom glass panel.

3. In a fluorescent lighting fixture, said fixture including a pair of end members, a socket plate secured to said end members, a housing secured to said socket plate within which housing is contained the electrical elements for operating said fixture, said end wall and socket plate each having an opening communicating with the interior of the housing, a readily removable disc for closing said openings, glass panels for the bottom and sides of said fixture resting on said end members, and means on said end members for preventing lateral displacement of said side panels, said means maintaining said side panels in elevated position to permit withdrawal of said bottom glass panel.

4. In a fluorescent fixture comprising a pair of end members, a body member between said end members within which is supported the electrical operating elements for said fixture, a readily removable cover for said body member, glass panels for the sides and bottom of said fixture and clip members on said end members for maintaining said side glass panels in elevated position to permit withdrawal of said bottom glass panel.

5. In a fluorescent fixture comprising a pair of end members, a body member between said end members within which is secured the electrical operating elements for said fixture, a supporting member secured approximately midway of the length of said body member and adapted to support between it and the end members a pair of glass panels forming the bottom of said fixture, a side glass panel for each of the sides of said fixture, and means on said end members for maintaining said side glass panels in elevated position to permit withdrawal of said bottom panels.

6. In combination with a trackway to be mounted on a ceiling, a fluorescent lighting fixture comprising a pair of end plates, a housing having its ends secured to said end plates, a bottom panel, side panels secured to said end plates, said side panels being movable to permit removal of the bottom panel whereby to obtain access to the interior of the fixture, and means on the fixture slidable in said trackway to support the fixture from a ceiling.

7. In a fluorescent lighting fixture comprising end plates, side and bottom supporting means adjacent the side and bottom edges of the end plates, a housing having its opposite ends secured to said end plates and supporting within it the electrical operating elements for the fixture, a light transmitting bottom panel carried by the bottom supporting means of the end plates, light transmitting side panels supported by the side supporting means of the end plates, said side panels being individually and freely supported and movable away from the bottom panel to permit removal of the bottom panel laterally to obtain access to the interior of the fixture, and means on the fixture to secure the fixture to a ceiling.

8. The combination recited in claim 7, and means for supporting the side panels in raised position.

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