Sept. 11, 1951 B. A. MITCHELL 2,567,779

LIGHTING FIXTURE FOR ELONGATED TUBULAR LAMPS

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Fig. 1

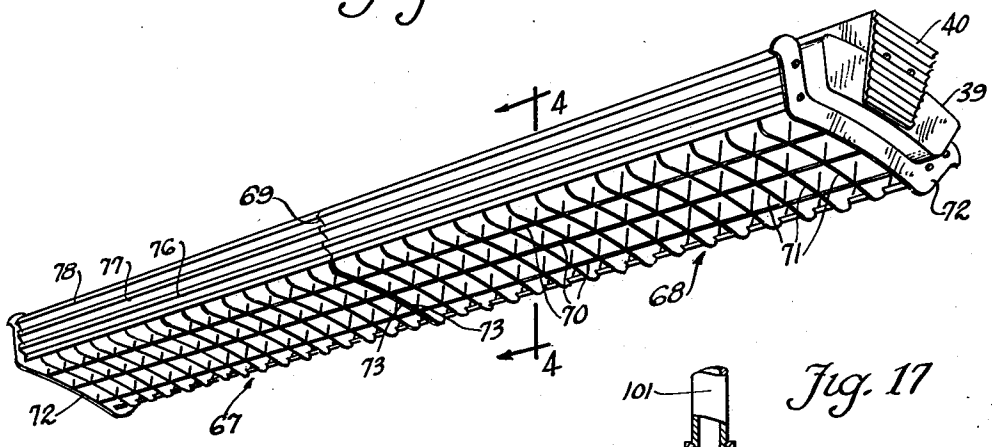


Fig. 17

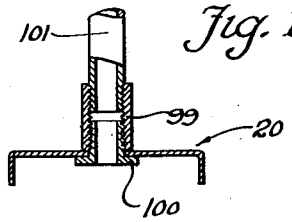


Fig. 2

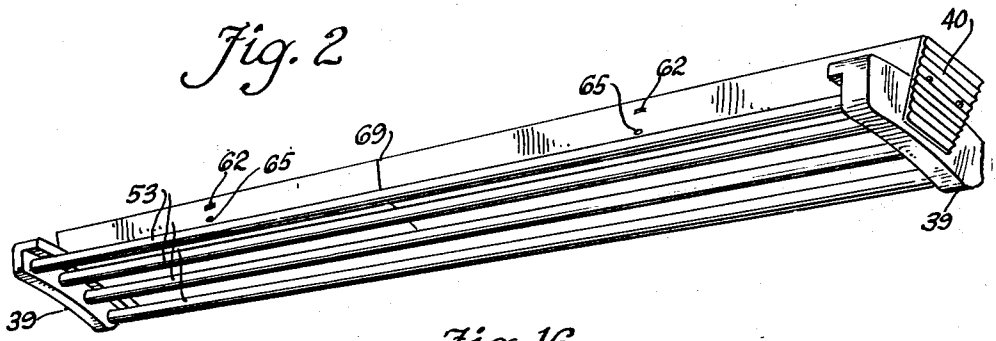
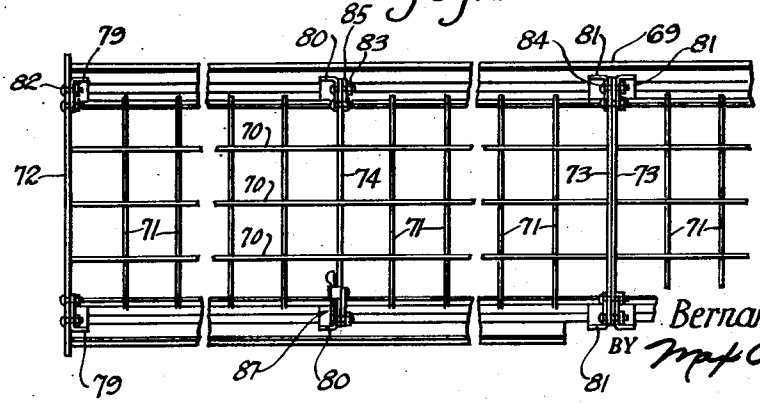


Fig. 16



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LIGHTING FIXTURE FOR ELONGATED TUBULAR LAMPS

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Fig. 3

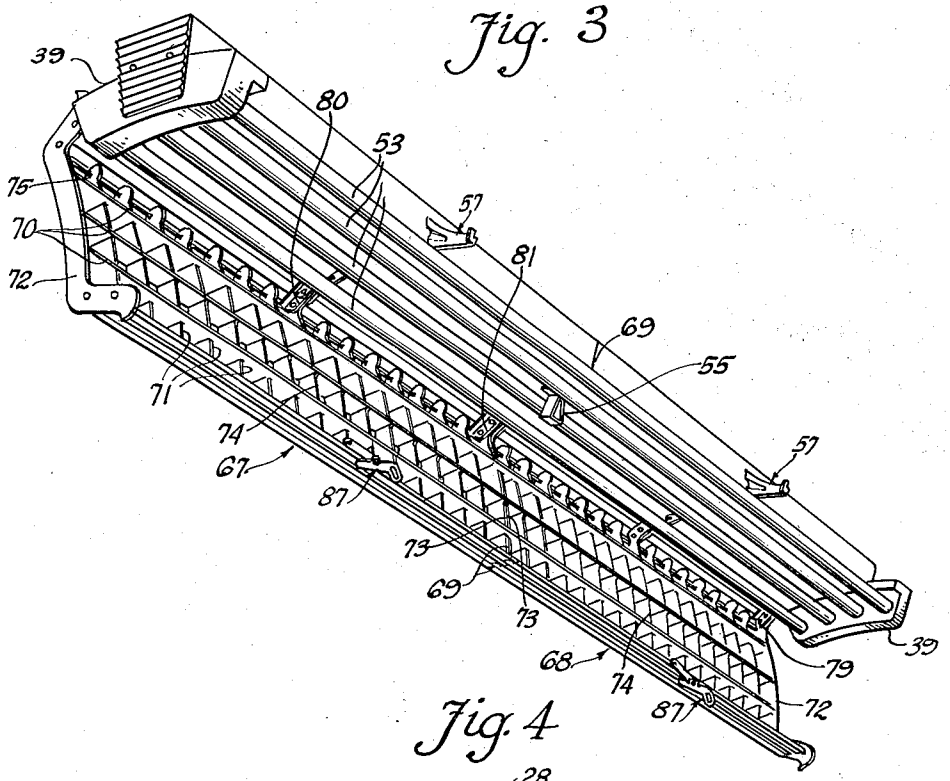
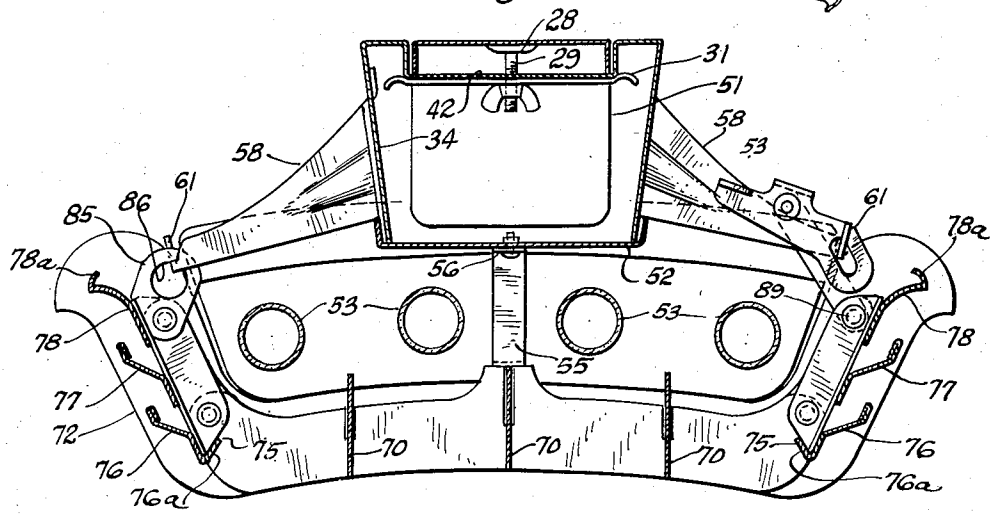


Fig. 4



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LIGHTING FIXTURE FOR ELONGATED TUBULAR LAMPS

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Fig. 5

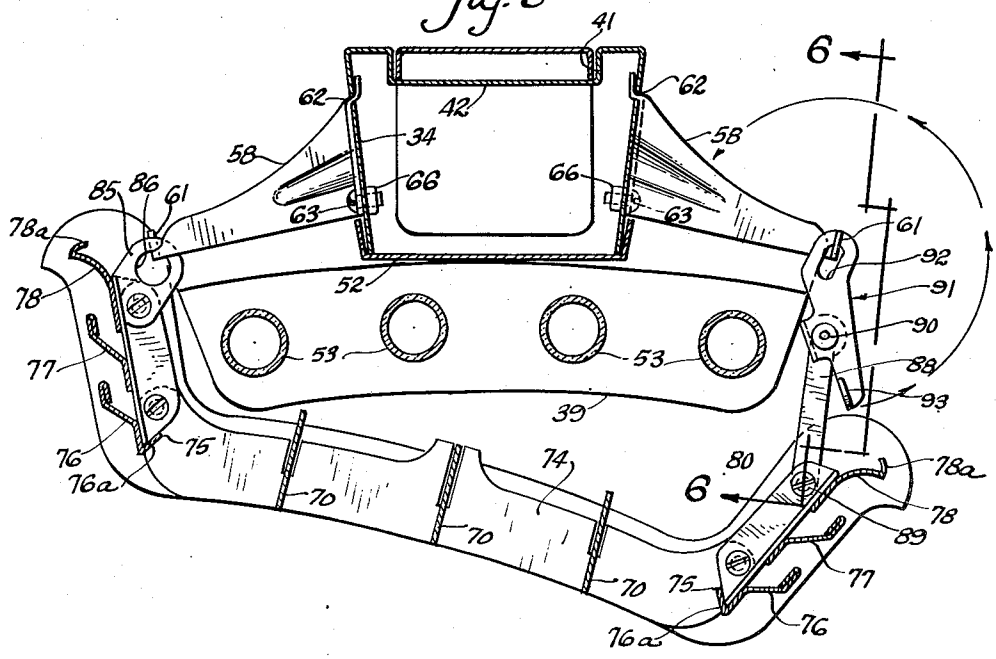


Fig. 7

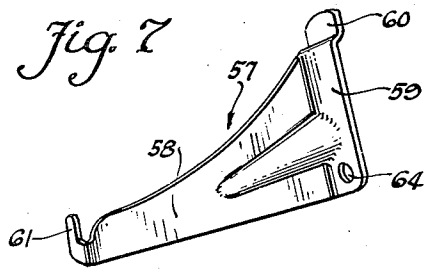


Fig. 6

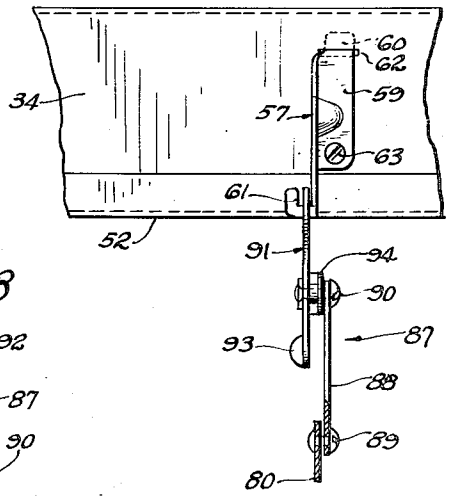
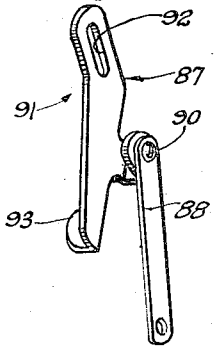


Fig. 8



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LIGHTING FIXTURE FOR ELONGATED TUBULAR LAMPS

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Fig. 9

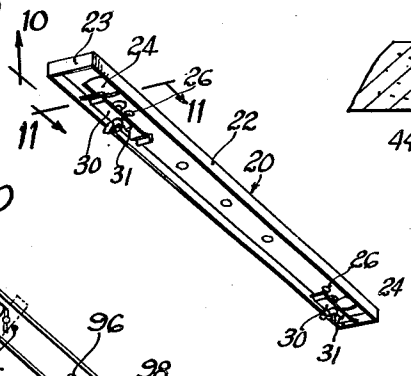


Fig. 10

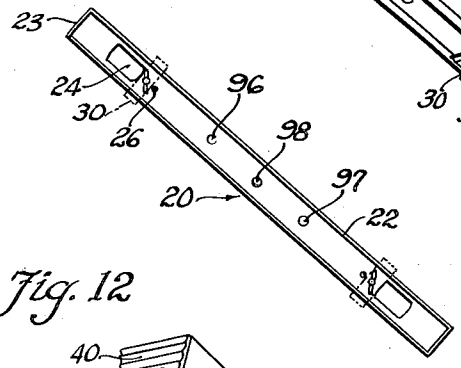
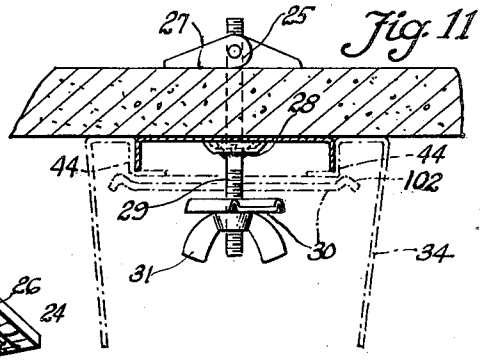


Fig. 11



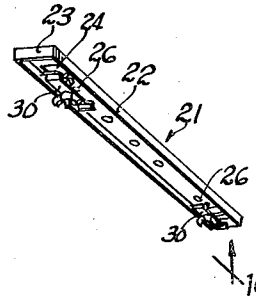
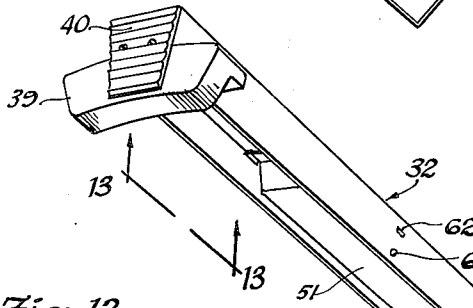


Fig. 12



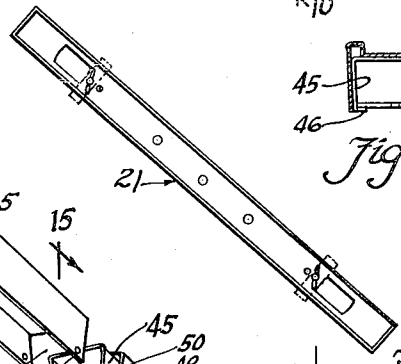
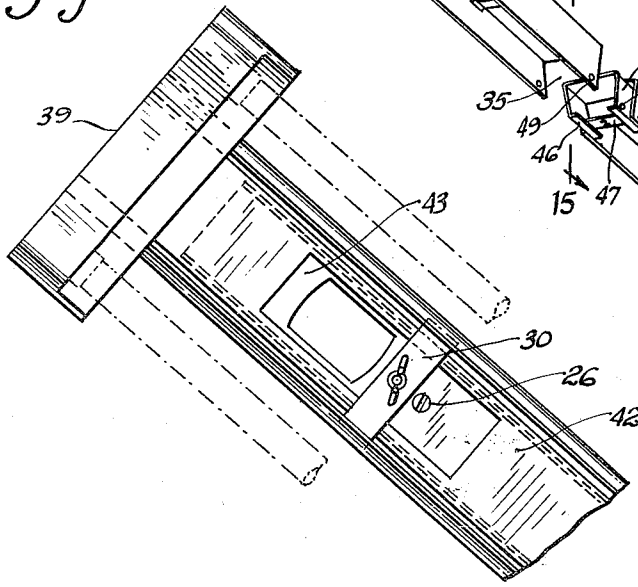


Fig. 15

Fig. 13



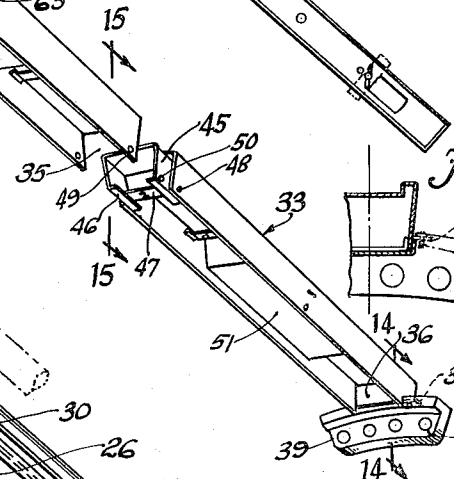


Fig. 14

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Patented Sept. 11, 1951 2,567,779

UNITED STATES PATENT OFFICE

2,567,779

LIGHTING FIXTURE FOR ELONGATED TUBULAR LAMPS

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Application June 17, 1948, Serial No. 33,622

2 Claims. (Cl. 240—51.11)

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

This invention pertains particularly to the construction, assembly and mounting of fluorescent fixtures utilizing long illuminating tubes, and one of the objects of this invention is to provide a fixture formed of a plurality of individual component units or sections which are readily assembled at the point of installation to form a single long integral fixture. These component units or sections may be easily and conveniently packed for shipment, requiring comparatively little space when thus packed, and may be easily and conveniently handled and quickly installed by one person.

Another object is to provide an improved means for readily and economically mounting fluorescent fixtures; for supporting and locking the louvre assembly to the fixture so as to permit ready access to the illuminating tubes, as well as to the interior of the fixture, and for providing louvre side rails on the fixture for uniformly distributing the light through the sides of the fixture and illuminating same.

Other objects will become apparent as this description progresses.

In the drawings:

Fig. 1 is a perspective view of my fixture.

Fig. 2 is a perspective view showing the fixture without the louvre assembly.

Fig. 3 is a perspective view of the fixture and showing the louvre assembly hingedly supported and swung downwardly for access to the illuminating tubes.

Fig. 4 is a view taken on line 4—4 of Fig. 1.

Fig. 5 is a view similar to Fig. 4, and showing the louvre assembly prior to its being locked into closed position.

Fig. 6 is a view taken on line 6—6 of Fig. 5.

Fig. 7 is a perspective view of the supporting bracket.

Fig. 8 is a perspective view of the locking lever.

Fig. 9 is a perspective view of the mounting plates and the locking straps.

Fig. 10 is a bottom plan view of the mounting plates taken on lines 10—10 of Fig. 9, with the locking straps positioned for supporting the fixture sections.

Fig. 11 is a cross sectional view taken on line 11—11 of Fig. 9 and showing in dotted lines the locking strap positioned to support the fixture sections.

Fig. 12 is a perspective view of the fixture sections before coupling.

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Fig. 13 is a view taken on line 13—13 of Fig. 12.

Fig. 14 is a view taken on line 14—14 of Fig. 12.

Fig. 15 is a cross section taken on line 15—15 of Fig. 12.

Fig. 16 is a top plan view of sections of the louvre assembly showing particularly the manner of joining two adjacent louvre assemblies, and

Fig. 17 is a cross sectional view showing a pendant secured to the mounting plate.

The fixture has a pair of mounting plates 20 and 21 (Fig. 9), each of said plates being of identical construction. The plate is of rectangular shape and has side and end walls 22 and 23 respectively, providing a box like construction. The mounting plate may be secured directly to the ceiling, as shown in Fig. 11, or may be pendant mounted, as shown in Fig. 17. If secured to the ceiling, the knockout 24 is removed and the opening is placed directly over the outlet box for passage of the wire. The mounting plate is secured to the ceiling with wood screws, toggle bolts or expansion bolts. As shown in Fig. 11, a toggle bolt 25 is anchored to the mounting plate, as at 26, and secured to the ceiling, as at 27. The mounting plate has welded or otherwise secured thereto, as at 28, a pair of threaded bolts 29 which are positioned at the opposite ends of the plate. Each bolt supports a locking strap 30 and has a wing nut 31 at the end thereof. The locking strap 30 is of rectangular shape and has a pair of inverted V shaped ends 102. The locking strap may be rotated about the bolt 29 for the purpose of permitting securement to the fixture section.

Supported on the mounting plates are fixture sections 32 and 33 of identical construction. The fixture sections have inverted substantially U shaped bodies 34 in transverse cross section, which are open at their inner ends, as at 35, and have a flanged end 36 closing the outer end. The fixture section has a pair of ears 37 (Fig. 14) which are engaged by studs 38 on the socket housing 39 to secure the socket housing to the fixture section. Ornamental end pieces 40 are suitably secured to the flanged ends 36. The top of each fixture section is depressed and shaped to form a channel 41 running the full length of the section. The base 42 of said channel has a pair of oblong openings 43 through which the locking strap 30 passes when longitudinally positioned, as shown in Fig. 9, when the fixture section is adapted to be secured to the mounting plate. The oblong openings are

positioned at the opposite ends of each of the fixture sections and correspond to the position of the locking straps. With the locking straps positioned longitudinally of the body of the fixture, the fixture section, best shown in Fig. 12, is positioned against the mounting plate 20 or 21, to permit the locking strap 30 to enter the oblong openings 43 in the base of the channel of the fixture section, and to permit the channel 41 to be positioned against the side walls 22 of the mounting plate, after which the locking straps 30 are rotated about 90 degrees to be positioned transversely of the longitudinal body of the fixture, as shown in dotted lines in Fig. 11, or in full lines in Fig. 13. The upturned edges 31 of the locking strap engage the underside of the side walls 44 of the channel portion of the fixture section, and when the wing nut 31 is tightened, the locking strap 30 is moved upwardly to engage the walls 44 and securely fasten the fixture section to the mounting plate. The oblong openings 43 permit a longitudinal shifting adjustment of the fixture section, as will be subsequently described.

To connect the two fixture sections 32 and 33 together to form one continuous section, I provide a coupling member 45 (Figs. 12 and 15) having inwardly directed flanges 46 at the bottom thereof, together with a cross piece 47 therebetween. The coupling member 45 nests within and adjacent the end of the fixture section and may be permanently attached by rivets 48 at the point of manufacture to one of the fixture sections 33, as shown in Fig. 12. At the point of installation the exposed end of the coupling member is inserted in the end of fixture section 32 and secured thereto through the aligned openings 49 and 50 by suitable bolts and nuts, to form a continuous channeled fixture. Within the fixture sections are suitably housed the conventional electrical elements which may be contained within housings generally indicated at 51. The open bottom of the fixture section is closed by a plate 52 suitably secured thereto. Fluorescent illuminating tubes 53, approximately 8 feet in length are removably supported and secured in the sockets 54, contained within the socket housings 39, to extend across the length of the fixture, as is well understood. Midway of the length of the assembled fixture, a triangular shaped stop 55 is secured, as at 56, to the cover plate 52. The stop engages the louvre assembly when same is in its closed and locked position, best shown in Fig. 4.

Centrally positioned on each side of each of the fixture sections 32 and 33 is a bracket arm 57, best shown in Fig. 7. This arm has a longitudinal body portion 58 and an end 59 formed at right angles thereto. An L shaped extension 60 forms a continuation of the end 59. The opposite end of the arm is formed at right angles to the body and has an L shaped lip forming a hooking member 61. The bracket 57 is secured to the side wall of the fixture section by inserting the end of the bracket 60 into the slot 62 of the side wall and passing a bolt 63 through the bracket opening 64 and wall opening 65 and locking it to the side wall by a nut 66.

The louvre assembly is formed of two separate similar louvred assembly sections 67 and 68, which are joined together as at 69, at the point of installation, to form one continuous louvre assembly. Each section is formed of three longitudinal louvres 70 and a plurality of transverse louvres 71, interlocked therewith in the conventional manner. The longitudinal louvres are suitably secured at their opposite ends and at the center to U shaped cross members 72, 73 and 74, and the opposite ends of the transverse louvres 71 are interlocked as at 75 with the bottom longitudinal louvre side rail 76, to be presently described.

On the opposite sides of each of the louvre assembly sections and running the full length thereof are three louvre side rails 76, 77 and 78, spaced from each other and permanently secured to the louvre assembly by welding same to the right angled brace bars 79, 80 and 81, which in turn are secured by bolts and nuts 82, 83 and 84 to the U shaped cross members 72, 73 and 74 of the louvre assembly. The center and lower rails 77 and 76 are substantially Z shaped in cross section, with the lower rail 76 having an inwardly directed angular flange 76a to which the transverse louvres 71 are secured. The top rail 78 is curved outwardly and then inwardly as at 78a to form V shaped ends. The two louvre sections 67 and 68 are secured together as at 69, adjacent their ends, at the point of installation, by removing the nuts from the bolts 84 and permitting the bolt to pass through the openings in the U shaped cross member 73 and brace bar 81 in the adjacent louvre section, and then securing the nut on the bolt to hold said sections together to form a single louvre assembly.

The arrangement and shape of the side rails, as shown, will cause the light from the lighting tubes to be reflected to illuminate the underside of the rails 77 and 78 and provide a lighted area along the full length and height of the sides of the fixture.

On one side of the louvre assembly, and to the brace bars 80 and cross members 74, there is secured a pair of short links 85, each having an opening 86 through which they engage the hook portion 61 of the bracket arm 58. On the opposite side of the louvre assembly there is secured a pair of locks, generally indicated at 87, which are to engage the bracket arms on the corresponding side of the fixture sections to support the corresponding side of the louvre assembly. The lock includes a link 88 which is hingedly connected by pin 89 to the brace bar 80 and the cross member 74 on the louvre assembly (Fig. 5). Pivotally connected to the other end of the link by a pin 90 is a cam lever, generally indicated at 91, having a slot 92 at one end and a right angled bent lip 93 at the other, which lip forms the means through which the lever is engaged by the hand for operating same. The lever is bent at right angles and then upwardly to form a section 94, spaced from but parallel with the body of the lever. The pin 90 connecting the link 88 to the cam lever 91 passes through an opening in the section 94, as well as the lever. The link 88 is secured exteriorly of the section 94 as shown. The link 88 and lever 91 are permanently secured to the louvre assembly. When the opposite side of the louvre assembly is secured to the bracket arms 57 by the links 85, the louvre assembly may be dropped and be made to hinge, as shown in Fig. 3, to permit ready access to the illuminating tubes and to the interior of the fixture for purposes of repair and the like.

To secure the louvre assembly in its normal horizontal locked position, as shown in Figs. 1 and 4, the louvre assembly is elevated at its dropped end until the slot 92 of the lever engages the hook 61 of the bracket, as shown in Figs. 5 and 6. The weight of the louvre assembly is thus

fully supported on the brackets. The louvre assembly may then be easily elevated and locked by moving the lever 91 upward on the bracket 57 as a fulcrum, as indicated by the arrows in Fig. 5, past the high point of the cam lever, after which it will snap in place and assume the position shown in Fig. 4. In this position the pin 90, passing through the cam lever 91, engages the top inclined wall of the bracket arm 57 and the lever is positioned so that the bracket arm is between the body of the lever and the parallel section 94 of the lever. The link 88 is then positioned at about a 45 degree angle. The louvre assembly is thus locked in position so that it will not become unlocked unless it is manually operated by the cam lever in a reverse direction.

For pendant mounting, best shown in Fig. 17, either the outer two knockouts 96 and 97 (Fig. 10) are removed if a double stem pendant is used for each mounting plate, or the center knockout 98 is removed for a single pendant. A pipe coupling 99 is secured to the mounting plate opening by a flanged sleeve 100, which engages the underside of the mounting plate. The pendant 101 is threadedly secured to the pipe coupling, and the opposite end of the pendant is suitably secured to the ceiling.

It will be readily apparent that the mounting plates, fixture and louvre sections, when made in accordance with my invention, are approximately one half the length of the assembled fixture shown, and that for a fixture utilizing eight foot illuminating tubes, each of the sections would be about four feet in length. This provides sections which may be conveniently handled, shipped and installed.

It will be understood that various changes and modifications may be made without departing from the spirit and scope of my invention.

I claim:

1. In a lighting fixture for tubular lamps, the combination of a pair of elongated mounting plates adapted for independent mounting in longitudinal alinement, at least one bolt depending from each of said mounting plates, a locking strap swivelly supported on each of said bolts, a pair of inverted channel shaped sections each having a length substantially one-half the length of the tubular lamps, each of said channel shaped sections having at least one elongated opening in the top wall thereof through which a bolt and strap may be passed and said strap rotated substantially 90° to secure said sections to respective mounting plates, said sections being relatively adjustable longitudinally, a coupling member formed complemental to said sections for connecting said sections together to form a continuous member, and a lamp socket secured to each of the free ends of said channel shaped sections, the said lamp sockets being spaced to receive a lamp having a length substantially twice the length of each of said sections.

2. In a lighting fixture for tubular lamps, the combination of a pair of elongated mounting plates adapted for independent mounting in longitudinal alinement, at least one bolt depending from each of said mounting plates, a locking strap swivelly supported on each of said bolts, a pair of inverted channel shaped sections each having a length substantially one-half the length of the tubular lamps, each of said channel shaped sections having at least one elongated opening in the top wall thereof through which a bolt and strap may be passed and said strap rotated substantially 90° to secure said sections to respective mounting plates, said sections being relatively adjustable longitudinally, each of said sections having one open end and one closed end, a lamp socket secured at the closed end of each of said sections, a coupling member formed complemental to said sections for connecting said open ends together to form a continuous member, the said lamp sockets being spaced to receive a lamp having a length substantially twice the length of each of said sections.

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