Jan. 24, 1967 M. LIBERMAN 3,300,634

LIGHTING FIXTURE AND MOUNT THEREFOR

Filed Sept. 30, 1963 4 Sheets-Sheet 1

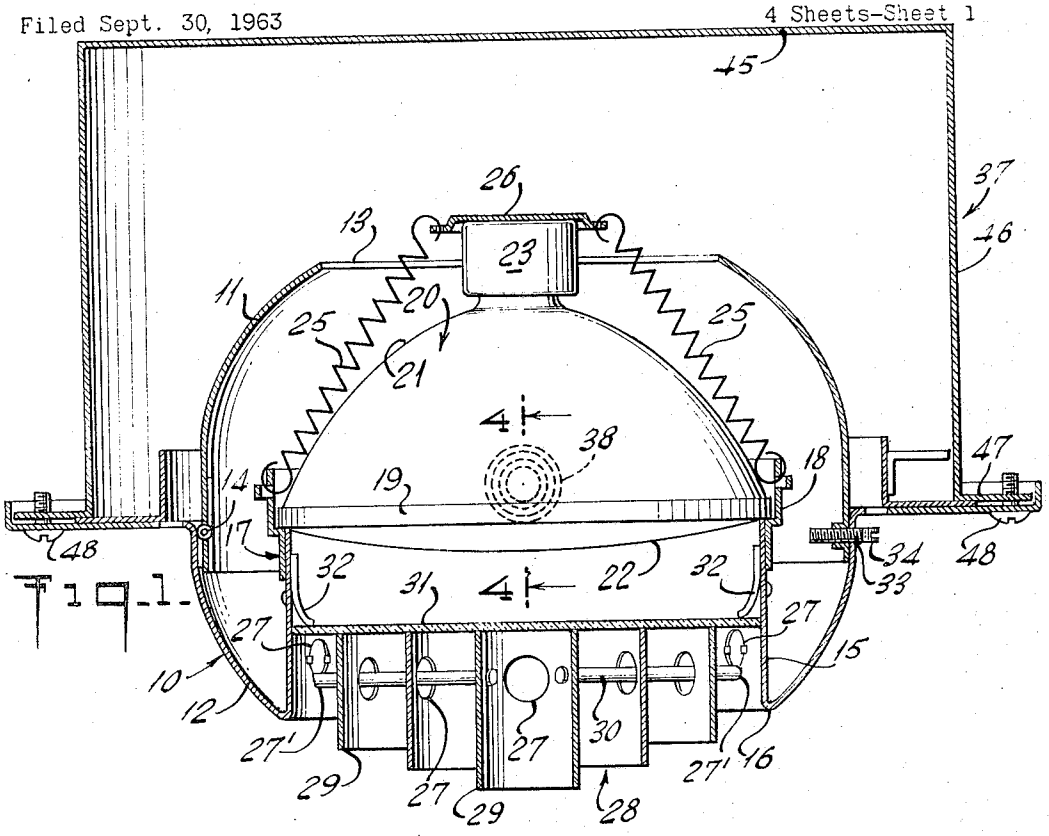


Fig. 1.

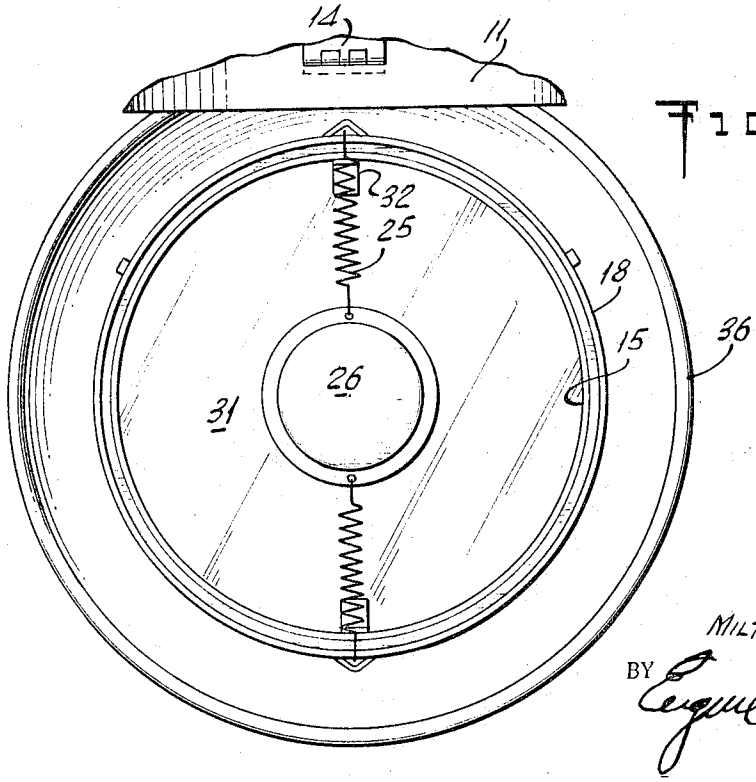


Fig. 3.

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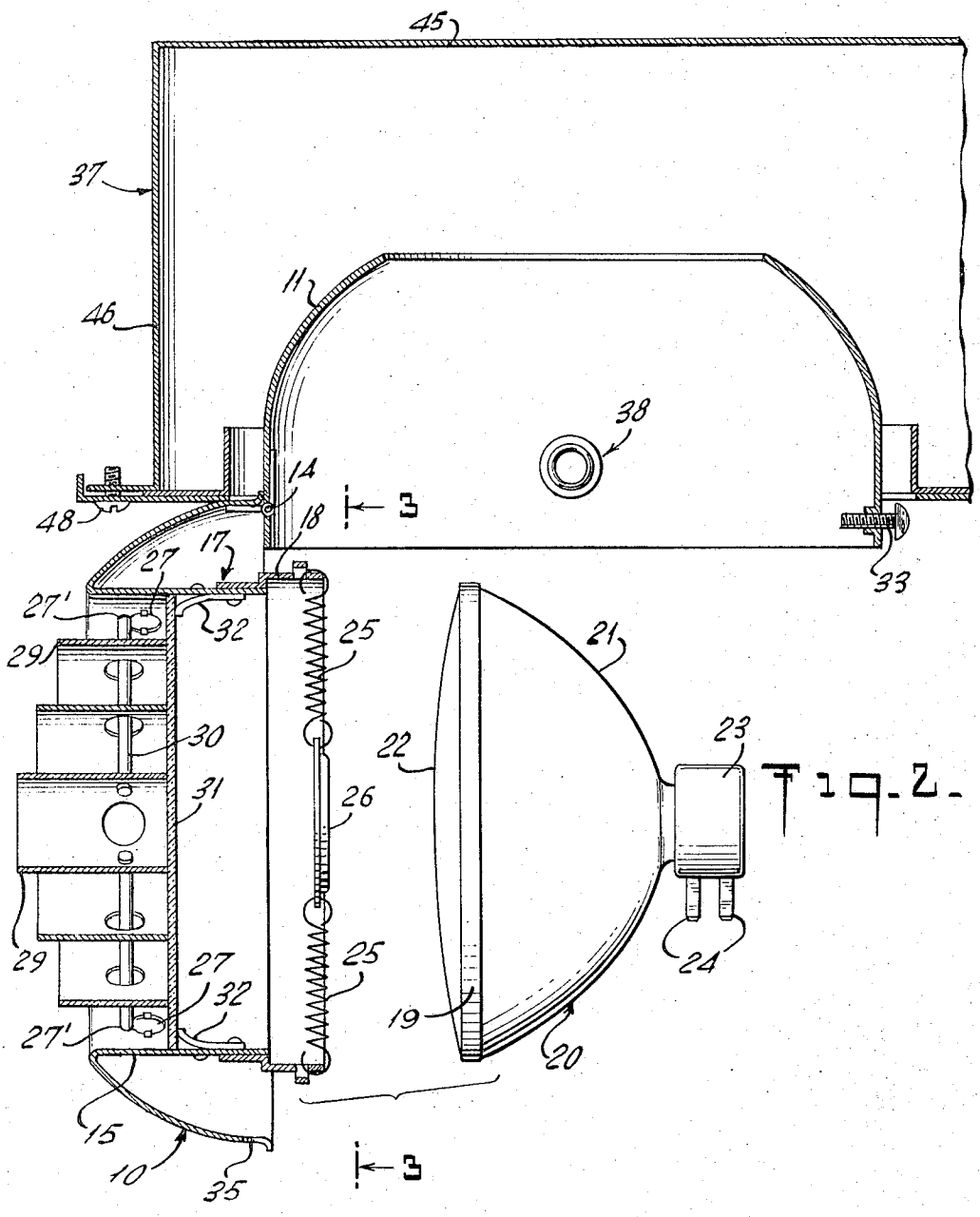


FIG. 2.

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Fig. 4.

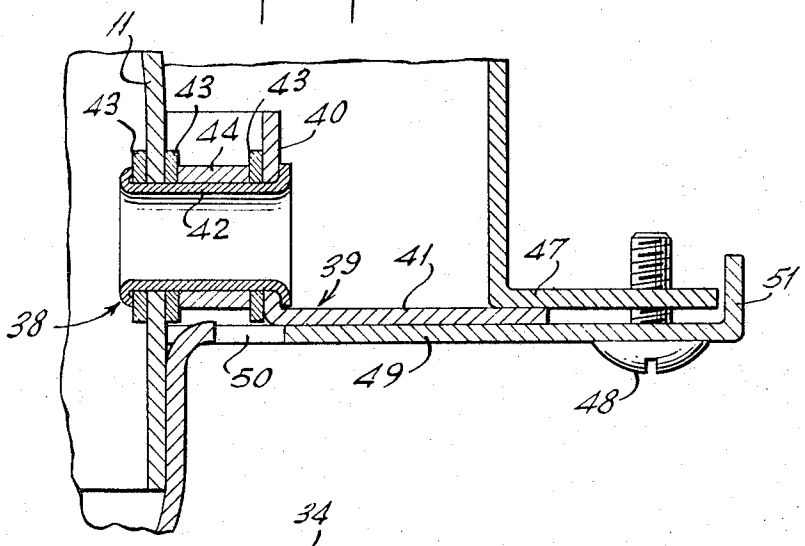
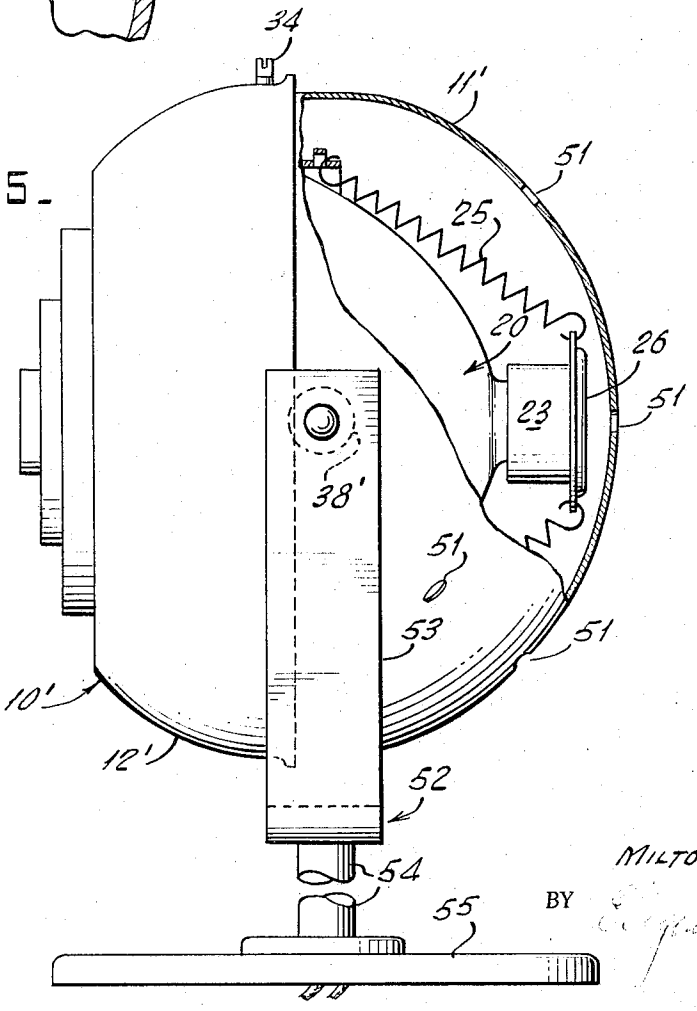


Fig. 5.



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Fig. 6.

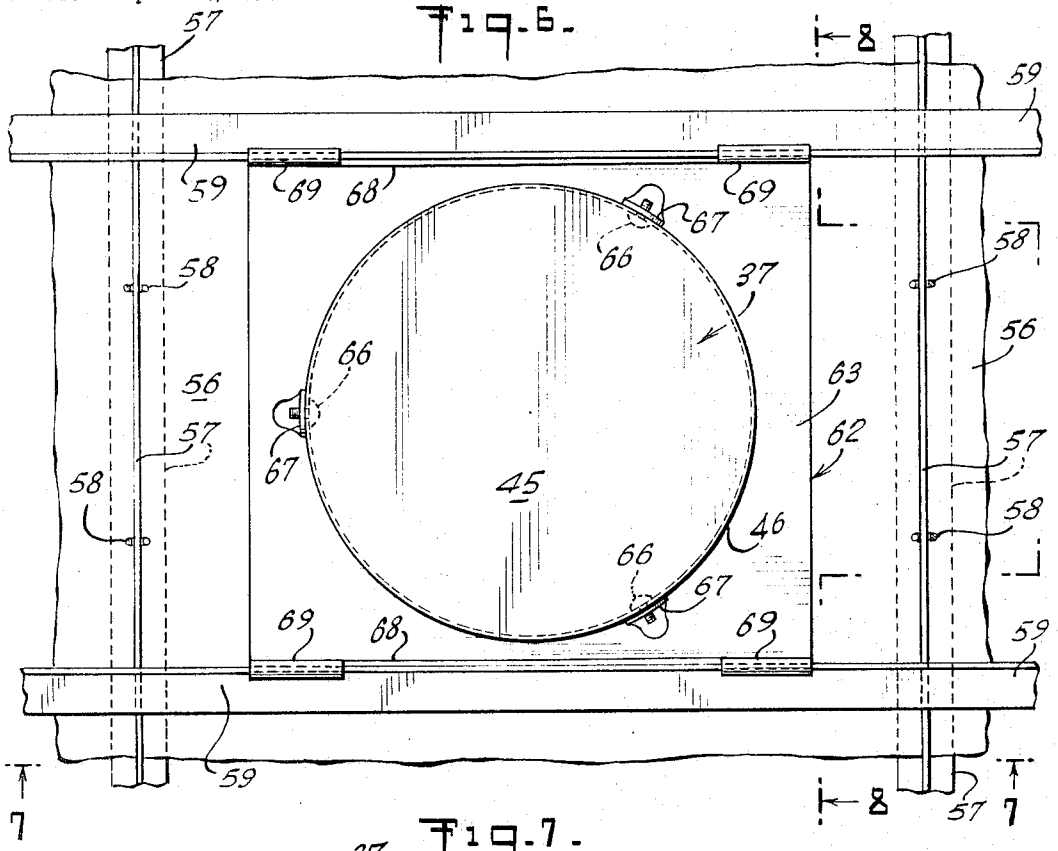


Fig. 7.

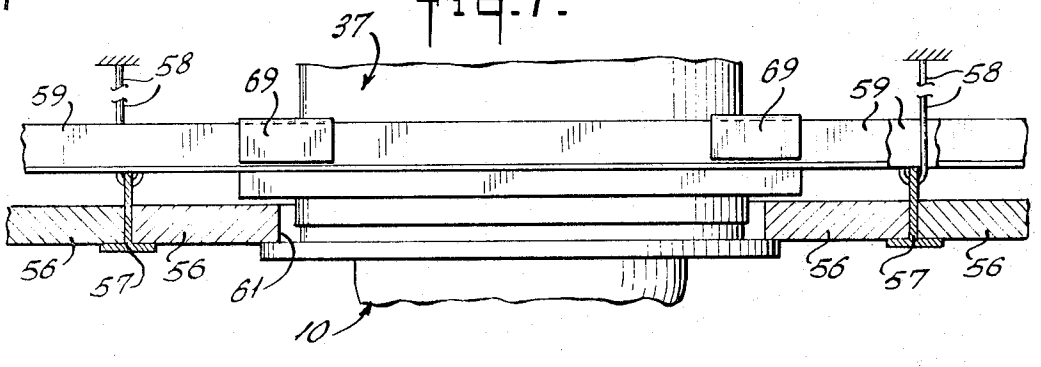
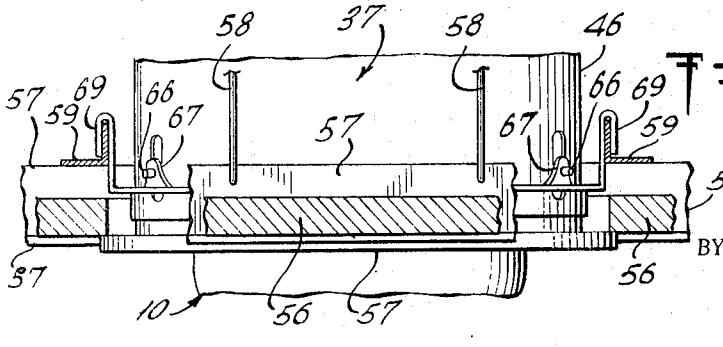


Fig. 8.



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3,300,634

LIGHTING FIXTURE AND MOUNT THEREFOR

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Filed Sept. 30, 1963, Ser. No. 312,730
5 Claims. (Cl. 240—78)

This invention relates to lighting fixtures and more specifically to a novel and improved lighting fixture construction and mounting means therefor.

One object of the invention resides in the provision of an improved housing for incandescent lamps and particularly internal reflector lamps adapted to be supported by the lamp envelope which greatly facilitates installation and replacement of the lamp and at the same time affords improved ventilation with minimum loss of useful light.

Another object of the invention resides in a novel and improved housing for incandescent lamps which is characterized by its simplicity, relatively low cost and ease of installation and replacement of the lamp.

Still another object of the invention resides in a novel and improved lamp housing including a cover therefor and wherein the cover carries the lamp and includes provision for installation of light filtering and directing means.

Still another object of the invention resides in the provision of a novel and improved lamp housing and mounting means therefor to facilitate installation and positioning of the lamp in a supporting surface.

A still further object of the invention resides in a novel and improved ventilated lamp housing having light directing means thereon and wherein said ventilation is effected with a minimum loss of spurious light through the ventilated openings.

The above and other objects and advantages of the invention will become more apparent from the following description and accompanying drawings forming part of this application.

In the drawings:

FIGURE 1 is a cross-sectional view of one embodiment of the lamp housing in accordance with the invention.

FIGURE 2 is a cross-sectional view similar to FIGURE 1, with the housing opened in preparation for installation of the lamp.

FIGURE 3 is a cross-sectional view of FIGURE 2 taken along the line 3—3 thereof.

FIGURE 4 is an enlarged cross-sectional view of FIGURE 1 taken along the line 4—4 thereof.

FIGURE 5 is a side elevation in partial section of another embodiment of the lighting fixture in accordance with the invention.

FIGURE 6 is a plan view of a mounting bracket installed in a ceiling for supporting the embodiment of the light fixture shown in FIGURES 1 and 2.

FIGURE 7 is a cross-sectional view of FIGURE 6 taken along the line 7—7 thereof; and

FIGURE 8 is a cross-sectional view of FIGURE 6 taken along the line 8—8 thereof.

Referring to the form of the invention shown in FIGURES 1 through 4, the lamp fixture comprises a housing generally denoted by the numeral 10 having a rear housing portion 11 and a cover 12. The portion 11 has an enlarged rear opening 13 and the portions 11 and 12 together are generally in the shape of a modified spherical section. The cover 12 is hinged at 14 to the rear housing portion 11 and has a front opening defined by an inwardly extending annular wall 15 integrally joined at 16 to the front edge of the cover portion 12. The inner edge of the annular member 15 carries an annular ring

17 having an offset portion 18 of a diameter slightly larger than the rim 19 of the lamp 20.

The lamp 20 may be of any desirable configuration though the instant lamp includes an envelope 21 with a lens 22 secured to the rim 19 of the envelope. The envelope terminates at the rear in a socket portion 23 having prongs 24 extending from one side thereof for reception of an electrical connector.

The lamp 20 is held in the ring 17, 18 by a pair of springs 25 each having one end secured to the offset portion 18 of the ring 17 and the other end secured to a plate 26 which overlies the base 23 of the lamp 20.

The annular wall 15, as will be observed in FIGURES 1 and 2, is provided with a plurality of openings 27 of circular configuration and with each opening having a forwardly extending slotted portion 27'. Within the opening is a louver generally denoted by the numeral 28 and comprising a sereis of concentric tubes 29 supported by three equally spaced transverse rods 30. The ends of the rods extend into the slots 27' and they may be held in place by any suitable means, as, for instance, by an appropriate spring clip adapted to engage the periphery of the associated openings 27. The inner edges of the concentric louver elements 29 are coplanar and, if desired, a filter 31 may be installed against the inner edges of the louver elements 29 and held in place by two or more spring clips 32.

The cover 12 is held in the closed position by a screw 33 threaded into the housing portion 11 at a point diagonally opposite the hinge 14. The head 34 of the screw 33 is rectangular as will be observed in the two views of the screw as shown in FIGURES 1 and 2. The cover includes an elongated slot 35 having a width slightly greater than the width of the screw head 34 as shown in FIGURE 1. The cover also terminates in an outwardly extending flange 36. With this arangement and with the screw 33 in the position shown in FIGURE 2, the cover can be closed, at which time the screw 33 will move into the cover slot 35. With the cover in this position, the screw 33 may then be rotated 90° to the position shown in FIGURE 1 to hold the cover in the closed position.

In the embodiment of the invention described above, the lamp housing generally denoted by the numeral 10 is supported within a surrounding casing 37 by a pair of diagonally disposed trunnions 38 which pivotally support the housing 10 on an annular ring 39. The ring 39 has a cylindrical leg 40 terminated on its outer edge in an outwardly extending flange 41. The trunnion 38 comprises an elongated sleeve 42 which extends through the housing part 11 and the cylindrical leg 40. Friction washers 43 are disposed on each side of the housing 11 and on the inside of the leg 40. A spacer 44 provides clearance between the housing 11 and the leg 40.

The casing 37 is cylindrical in configuration and has a top wall 45 and a side wall 46. The bottom end of the wall 46 terminates in an outwardly extending flange 47, having a plurality of openings therein to threadably receive screws 48. The surface or escutcheon plate 49 has a central opening 50 to clear the lamp housing 10 and a short upwardly turned flange 51 on its outer periphery. The diameter of the flange 51 is slightly greater than the outside diameter of the casing flange 47, and the ring 49 has a plurality of openings therein for slidably receiving the screws 48.

It will be observed in FIGURE 4 that the leg 41 of the annular element 39 has an outside diameter slightly greater than that of the casing wall 46 so that when the escutcheon ring 49 is placed in position as shown, the leg 41 will be positioned between the ring 49 and the flange 47. In this way, when the screws 48 are loosened, the housing 12 can be rotated within the casing 37 and when tightened,

the housing 12 is held in the adjusted position but can still be moved about the trunnions 48.

From the foregoing description, it is clear that, in addition to providing a convenient means for installing and replacing the lamp 20, the housing by means of the utilization of openings 27 and the rear opening 13 provides for the free flow of air through the housing 12 and at the same time substantially all light emission is restricted to the opening in the cover defined by the wall 15.

A modified embodiment of the invention is illustrated in FIGURE 5 in which elements corresponding to those of the embodiment of the invention shown in FIGURE 1 are identified by like primed numerals. In this embodiment of the invention, the housing portion 11' is solid throughout its extent except for a plurality of openings 51, and the cover portion 12' is identical in every respect with the cover 12 previously described.

The mount for the lamp housing 11' is generally denoted by the numeral 52 and is in the form of a semicircular yoke 53 with the lamp housing 11' secured to the yoke by trunnions 38' which are identical to the trunnion 38 illustrated in FIGURE 4. The yoke 53 is preferably of hollow configuration, and the electrical leads for connection of the lamp 20 extend through one of the trunnions 38' and through the yoke 53. The yoke 53 is supported by a short tube 54, the latter being secured to an appropriate base 55. Since the tube 54 opens into both the yoke 53 and the base 55, the lead wires can be brought out through the tube and the base for connection to a suitable source of power.

From the foregoing description of the embodiment of the invention shown in FIGURE 5, it is evident that the structure utilizes the same improved lamp mounting which facilitates installation and replacement of the lamp 20 and at the same time the openings in the wall 15 of the cover together with the openings 51 in the housing portion 11' provide for the free flow of air through the housing. Furthermore, the entire housing unit 10' can be rotated about the trunnions 38' and the yoke 53 can be rotated relative to the base 55, thus affording substantially universal motion to the housing 10'.

The form of the invention shown in FIGURES 1 through 4 is generally adapted for ceiling mounting though it can of course be mounted on any suitable supporting surface. When mounted in a ceiling and particularly in a hung ceiling, the improved mount shown in FIGURES 6 through 8 greatly facilitates positioning of the fixture in the ceiling. In the instant embodiment of the invention, the ceiling generally denoted by the numeral 56 is supported by T-bars 57 in the conventional manner with the T-bars being in turn supported by hangers 58. For purposes of the present illustration, a pair of spaced angle bars 59 and 60 are secured to the tops of the T-bars 57 and are positioned on either side of an opening 61 in the ceiling 56 which is arranged to receive the fixture 10. The fixture support 62 has a bottom plate 63 with a central opening 64 therein and three tabs 65 threaded to receive screws 66 adapted to extend through slotted openings 67 in the periphery of the fixture casing 46. Two opposing edges of the fixture support 62 have upwardly extending flanges 68 and each end of each flange carries a tab 69 which normally extends outwardly in a plane parallel to the plane of the plate 63. The hanger is positioned in place over the angle bars 59 and 60 and the tabs 69 are then bent downwardly as shown more clearly in FIGURE 8. With this arrangement, the hanger 62 can be adjusted lengthwise of the angle bars 59 and 60 to align the opening 64 with the opening 61 in the ceiling. The fixture can then be inserted in place as shown in FIGURE 8 and screws 66 inserted from the inside of the fixture casing. The fixture may then be assembled as described in connection with FIGURES 1 and 2.

While only certain embodiments of the invention have been illustrated and described, it is apparent that alterations, modifications and changes may be made without departing from the true scope and spirit thereof as defined by the appended claims.

What is claimed is:

1. A light fixture adapted to receive a reflector-type lamp having an envelope tapering inwardly from a relatively large rim and terminating in a relatively small neck portion carrying a base, comprising a lamp housing, a front cover removably secured to said housing, said cover having a large central opening, a cylindrical wall joined to the edge of said cover opening and extending inwardly therefrom, a light transmitting louver closing said opening, lamp rim receiving and centering means on the inner edge of said cylindrical wall, a lamp base engaging element and spring means connecting said element relative to the cover, said element and spring means securing said lamp in engagement with said lamp rim receiving and centering means, said louver being in spaced relationship to said lamp when in position on said cover and spring means carried by said cylindrical wall for holding a lens in overlying relationship with said louver.

2. A light fixture adapted to receive a reflector-type lamp having an envelope tapering inwardly from a relatively large rim and terminating in a relatively small neck portion carrying a base, comprising a lamp housing, a front cover removably secured to said housing, said cover having a large central opening, a cylindrical wall joined to the edge of said cover opening and extending inwardly therefrom, a light transmitting louver closing said opening, lamp rim receiving and centering means on the inner edge of said cylindrical wall, a lamp base engaging element and spring means connecting said element relative to the cover, said element and spring means securing said lamp in engagement with said lamp rim receiving and centering means, said louver comprising a plurality of concentric rings with the inner edges of said rings being in spaced relationship to said lamp when in position on said front cover, and spring means carried by said cylindrical wall for holding a lens in overlying relationship against the inner edges of said louver.

3. A light fixture adapted to receive a reflector-type lamp having an envelope tapering inwardly from a relatively large rim and terminating in a relatively small neck portion carrying a base, comprising a lamp housing, a front cover removably secured to said housing, said cover having a large central opening, a cylindrical wall joined to the edge of said cover opening and extending inwardly therefrom, a light transmitting louver closing said opening, lamp rim receiving and centering means on the inner edge of said cylidrical wall, a lamp base engaging element and spring means connecting said element relative to the cover, said element and spring means securing said lamp in engagement with said lamp rim receiving and centering means, said front cover being hinged at one side to said housing and including an elongated slot in the other side which opens into the edge thereof, the last said edge having outwardly turned lips adjoining said slot, and said housing includes a rotatably mounted catch having an elongated head portion, said head portion when positioned in one direction will move between the lips adjoining said slot upon closure of the cover and upon rotation through an angle of about 90° will engage said lips and lock the cover in the closed position.

4. A light fixture adapted to receive a reflector-type lamp having an envelope tapering inwardly from a relatively large rim and terminating in a relatively small neck portion carrying a base, comprising a lamp housing, a front cover removably secured to said housing and having a central opening for transmission of light therethrough, lamp rim receiving means adjoining said opening, spring means fixed relative to said cover for securing said lamp to said cover, an L-shaped ring surrounding said housing with one leg of said ring extending outwardly and the other leg forming a rearwardly extending cylindrical wall, means pivoting said housing to the last said cylindrical wall, a cylindrical enclosure having one closed end

and an outwardly extending peripheral flange on the other end, the last said flange overlying part of said one leg and extending outwardly therefrom, a facing ring overlying the forward surfaces of said one leg and the last said flange, and means releasably clamping the facing ring to said enclosure flange whereby release of said clamping means permits rotation of said housing and L-shaped ring relative to said enclosure and facing ring.

5. A light fixture according to claim 4 including mounting means comprising a plate having a central enclosure-receiving opening therein, means adjoining the edge of the last said opening for securing the enclosure therein, angle flanges along at least two opposing edges of said plate and at least two spaced tabs extending outwardly from the edges of each of the last said flanges, said plate being adapted to fit between spaced parallel elements with said tabs being bent over said elements to slidably retain said plate therebetween.

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