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3,121,259

CEILING MOUNTING FOR RECESSED LIGHTING FIXTURES

Filed April 17, 1959

2 Sheets-Sheet 1

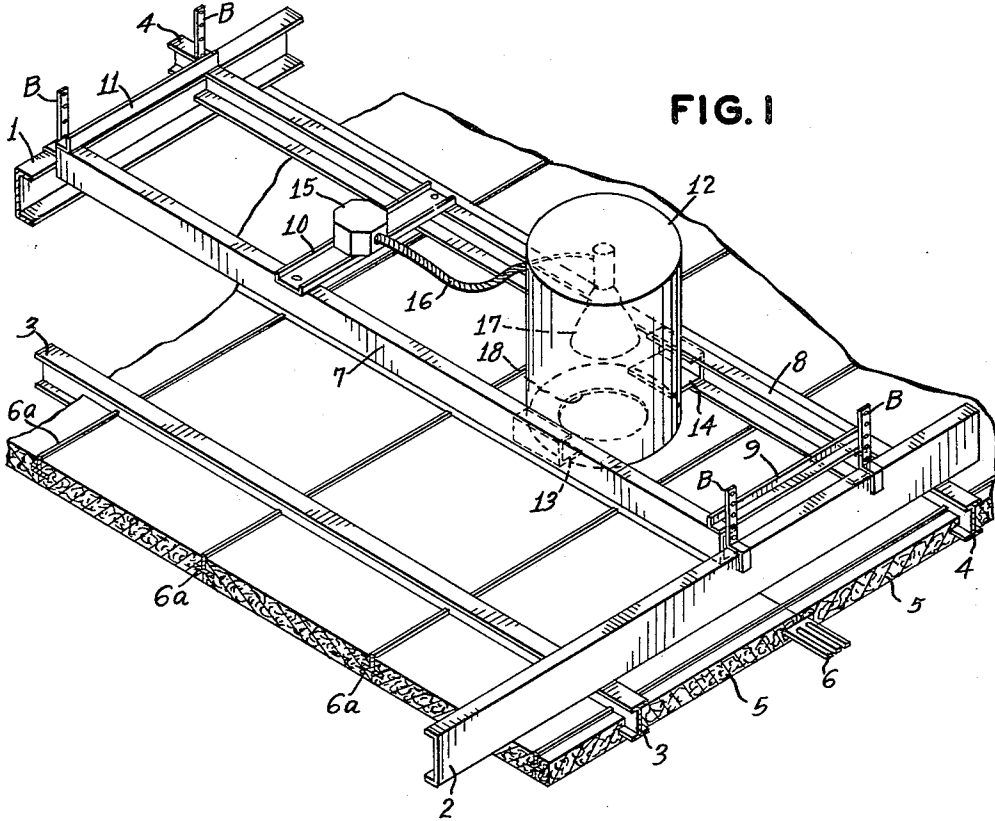


FIG. 1

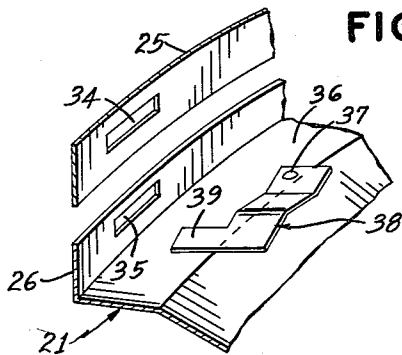


FIG. 5

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FIG. 3

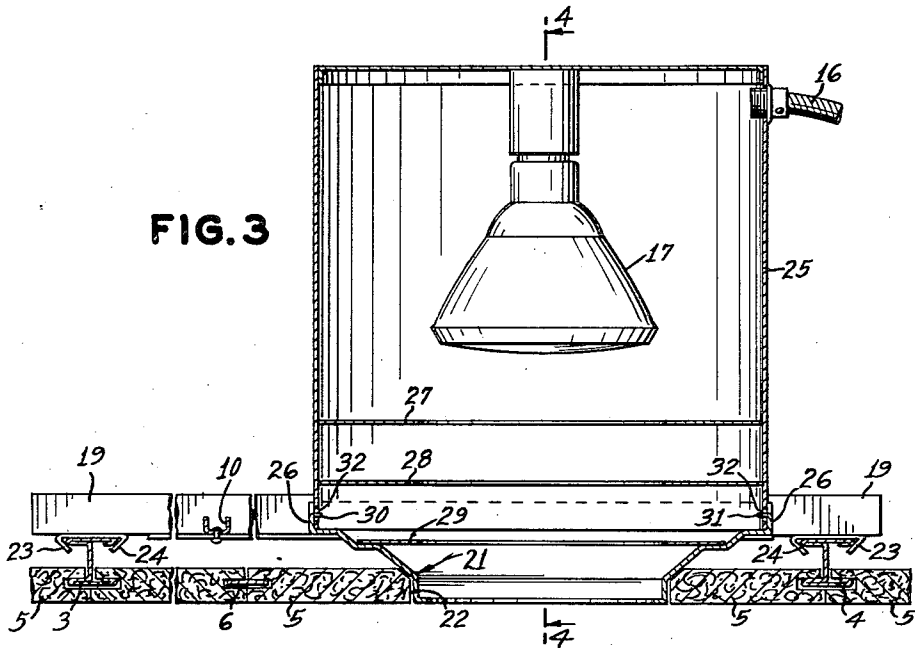


FIG. 2

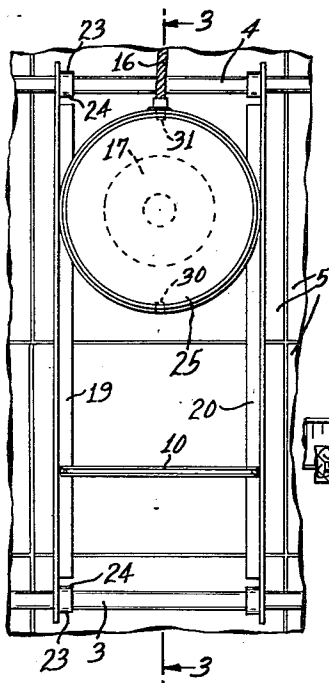
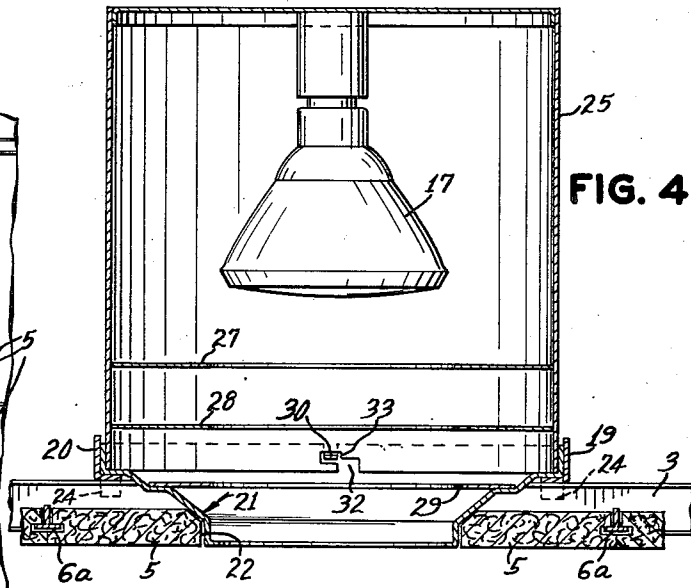


FIG. 4



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CEILING MOUNTING FOR RECESSED LIGHTING FIXTURES

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2 Claims. (Cl. 20-4)

The present invention deals with a ceiling mounting for recessed lighting fixtures and more particularly with a ceiling mounting for use with modular or removable ceiling panels or tiles of the acoustical type.

The invention is especially applicable to ceiling constructions of the type employed in the more modern office and commercial buildings which comprise a ceiling framework of beams and cross pieces to which acoustical type ceiling panels and tiles are secured. The ceiling panels are usually of a frangible construction and it is highly desirable that no damaging pressures or weights be applied to the panels. This invention is, therefore, concerned with a ceiling mounting for recessed lighting fixtures whereby ceiling panels are free from any supporting connection with the lighting fixtures.

It is an object of the present invention to provide a ceiling mounting for recessed lighting fixtures which is adapted for use with a ceiling supporting framework. It is another object of the present invention to provide a combination of a ceiling mounting and a recessed lighting fixture which is easily mounted at desirable locations and not restricted to the modular size of ceiling panels. It is a further object of the invention to provide a ceiling mounting for recessed lighting fixtures in combination with a ceiling panel. Other objects and advantages of the invention will become apparent from the description hereinafter following and the drawings forming a part hereof, in which:

FIGURE 1 is a fragmentary isometric view of a ceiling construction with a lighting fixture mounting according to the invention positioned thereon,

FIGURE 2 is a top view of a recessed lighting fixture mounting,

FIGURE 3 is a cross-sectional view along lines 3—3 of FIGURE 2,

FIGURE 4 is a cross-sectional view along lines 4—4 of FIGURE 3, and

FIGURE 5 is a fragmentary isometric view of a modification of the invention.

The invention deals with a ceiling mounting for recessed lighting fixtures particularly adapted for use with ceiling structures employed to support ceiling panels, especially ceiling panels of the acoustical type. The invention provides for horizontal and vertical adjustment of the fixture in relation to the ceiling panels or tiles and assuring a support for the fixture independent of the panels or tiles while retaining proper relationship of the panels and tiles and lighting fixture for optimum visual neatness. The invention deals further with a lighting fixture mounting which is adjustable to accommodate various types of ceiling beams and cross-pieces commonly in use. The construction permits access to the space above the ceiling through the fixture aperture for maintenance after installation and eliminates the need for removal of ceiling panels and also provides an absolute minimum of exposed recessed fixture components.

Referring to FIGURE 1, ceiling structure of the type to which the invention is especially applicable comprises spaced metal beams 1 and 2 to which are secured cross pieces or furring members 3 and 4 for supporting ceiling panels 5. When the furring members 3 and 4 are spaced sufficiently for supporting two or more panels 5, a spline strip 6 and/or T-splines 6a are employed to engage and

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connect the sides of the panels which are not otherwise supported.

The invention comprises a mounting for recessed lighting fixtures and the mounting being secured, for example, across the spaced beams 1 and 2 or across equivalent cross pieces of sufficient strength to support the mounting.

The mounting comprises a pair of spaced parallel rails 7 and 8 with at least one brace 9, 10 and 11 connecting and bridging the rails. The rails, according to one form of the invention, are of substantially U-shaped cross-section with the longitudinal channels thereof facing each other. A lamp housing 12 is positioned between the rails 7 and 8 and is spaced from the braces 9, 10 or 11 longitudinally of the rails 7 and 8. The housing is retained on the rails by means of retaining pieces or extension members 13 and 14 secured to the bottom of the housing 12 and extending outwardly of the housing on opposite sides thereof, whereby said extension pieces engage rail components of rails 7 and 8 and position the housing between the rails. The extension pieces may be either fixed to the rails or may be slidably positioned in the rail channels for adjustment of the housing longitudinally of the rails 7 and 8. A splice box 15 is secured to the brace 10 with electrical leads or conductor 16 leading from the splice box through the housing 12 and connected to the lamp 17 positioned inside the housing 12 above an opening 18 in the bottom of the housing. While the housing 12 is adjustable longitudinally of rails 7 and 8, for example by means of the movable or slidable extension pieces 13 and 14, the entire mounting is also vertically adjustable in relation to the ceiling panels 5 by means of adjustable brackets B positioned at the ends of the rails 7 and 8 and connecting the mounting rails with the beams 1 and 2 as an in slidable contact therewith for adjustable movement of the mounting along the said beams.

FIGURES 2 and 3 illustrate a modification of the invention in that the rails 7 and 8 are substituted by L-shaped parallel rails 19 and 20 which do not necessitate the use of the extension pieces 13 and 14 for supporting the housing, and the housing is otherwise modified for facilitating assembly of the electrical fixture.

According to FIGURES 2 and 3, the housing comprises a separable substantially centrally apertured housing support member 21, e.g. a funnel-shaped member, bridging the L-shaped rails 19 and 20 with the opening of smaller diameter extending below the rails and positioned into an aperture 22 in a ceiling panel 5. The rails 19 and 20 are slit across the base thereof preferably near each end so as to form a pair of tabs 23 and 24 which are bent to engage or embrace the H-shaped furring members 3 and 4 to secure the rails to the furring members, but permitting gliding freedom of the assembly perpendicular to rails 1 and 2.

When the support member 21 has tapered walls, the aperture 22 is provided with aperture walls which are bevelled partly through the thickness thereof to accommodate funnel walls, there being preferably a small spacing between the funnel and aperture walls to permit vertical adjustment of the apertured member 21 so that this member can be entirely recessed in the ceiling permitting a minimum of exposure.

The housing 25 having a full opening at one end thereof, is positioned or seated into engagement with the annular wall 26 of the apertured member 21 at the location of the larger diameter opening. Internally of the housing 25 are vertically spaced centrally apertured annular baffles 27 and 28 having their apertures located below lamp 17. There is also a similar apertured baffle 29 internally of the apertured member 21.

Regarding FIGURES 3 and 4, the annular walls 26 of the member 21 are provided with internally extending

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tabs 30 and 31 facing each other diametrically of the funnel opening. A pair of slots 32 are formed through the wall of the housing 25 at the open edge thereof, the slots being positioned diametrically of the housing, whereby the housing is secured to the apertured member 21 by engagement of the tabs in the said slots. A turning of the housing securely fastens the housing to the funnel member. The housing can be readily removed by lifting and counter turning. The slot 32 is substantially L-shaped with an abutment 33, e.g. a shoulder, formed by a partial enlargement of the lateral arm of said L-shape; and tab 30 cannot be disengaged from the slot 32 unless the housing 25 is lifted.

FIGURE 5 illustrates a modification of the tab 30 and slot 32 arrangement in that the housing 25 is provided with a slot 34 slightly above the open end of the housing, and a corresponding slot 35 is formed through the annular wall 26 of member 21. The member 21 is provided with a substantially flat annular seat 36 adjacent and inwardly of the wall 26 and on which seat is mounted, e.g. by rivet 37, a movable substantially L-shaped thumb latch 38. The leg 39 of thumb latch 38 is insertable through the aligned slots 34 and 35 for securing the housing 25 to the funnel 21. A second pair of slots corresponding to slots 34 and 35 and a corresponding thumb latch are positioned diametrically of the aforesaid slots and latch.

It is apparent from the above description that the entire weight of the fixture and mounting therefor are entirely free of any support connection with the panels 5.

While the mounting according to the invention has been particularly described according to the illustrations, various modifications are contemplated within the scope of the appended claims.

What is claimed is:

1. A mounting for recessed lighting fixtures comprising a first pair of spaced parallel rails, a brace member bridg-

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ing the rails, a housing positioned between and mounted on the rails, retaining means connecting the housing to the rails, a second pair of spaced parallel rails, the first pair of rails bridging the second pair of rails, means for vertically adjusting the first pair of rails relative to the second pair of rails, the vertical adjusting means connecting the pairs of rails, means for slidably adjusting the said first pair of rails along said second pair of rails, said housing retaining means being a funnel member bridging the rails, the funnel having a portion defining a narrow opening and a wider portion defining a wider opening, the wider portion of the funnel member contacting the rails and the narrower portion of the funnel member extending below the rails, a modular ceiling, the modular ceiling having an aperture formed therethrough, the aperture walls being funnel-shaped and the funnel member positioned in the aperture.

2. A mounting for recessed lighting fixtures according to claim 1, wherein the wider portion of the funnel member comprises an annular wall, said housing having an end thereof positioned in said funnel member in contact with the annular wall, a projection on the annular wall extending inwardly of the funnel member, a substantially L-shaped slot through the wall of the housing at an end portion thereof, the projection on the wall engaging said slot.

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