Dec. 11, 1951 L. K. SCHOENBROD 2,578,022

LIGHTING FIXTURE INSTALLATION

Filed June 6, 1950

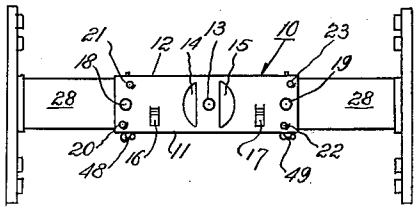


Fig. 1.

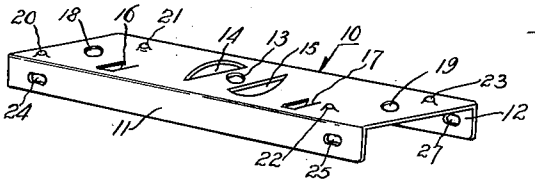


Fig. 2.

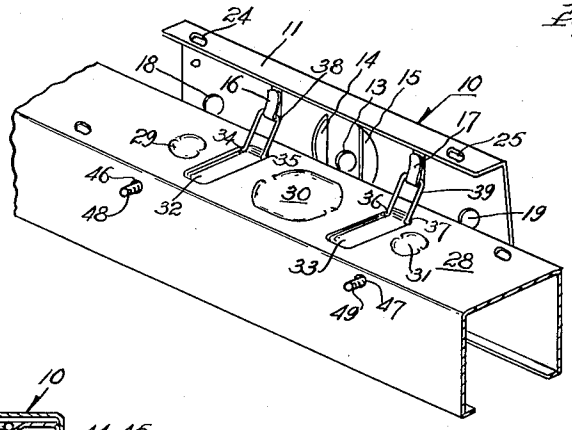


Fig. 3.

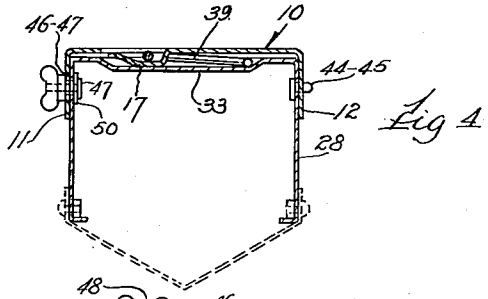


Fig 4

Fig 5.

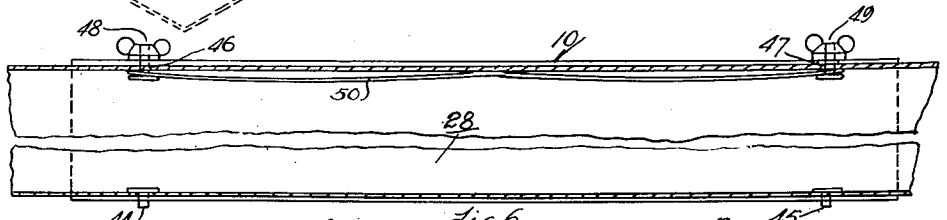
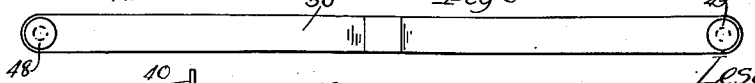


Fig 6



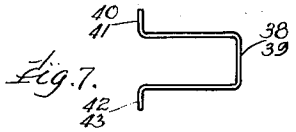


Fig. 7.

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LIGHTING FIXTURE INSTALLATION

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2 Claims. (Cl. 248—343)

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My invention relates to a lighting fixture installation which permits one man to make a complete and rapid installation of a lighting fixture.

It is among the objects of my invention to provide a lighting fixture installation which permits the fixture to be installed quickly and simply by one man without the use of any special tools or equipment. My invention may be used without modification or change in its physical structure for either flush mounting or pendant mounting of the lighting fixture.

A further object of my invention is to provide such an installation which is economical in manufacture and use and which may be easily understood and used by a workman desiring to install the lighting fixture. My invention is particularly designed for fluorescent lighting fixtures, but may be used for other types of lighting fixtures and for other uses and purposes. My invention also comprises such other objects, advantages and capabilities as will later more fully appear and which are inherently possessed by my invention.

While I have shown in the accompanying drawings preferred embodiments of my invention, yet it is to be understood that the same are susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawings, Fig. 1 is a top plan view of my lighting fixture installation completely assembled; Fig. 2 is a top perspective view of my hanger plate; Fig. 3 is a top perspective view of a lighting fixture channel partially attached to the hanger plate; Fig. 4 is an enlarged sectional view through one suspension clip of my lighting fixture installation fully assembled; Fig. 5 is a detailed broken sectional view showing the inside of a lighting fixture channel in a completed installation; Fig. 6 is a top plan view of my spring band and Fig. 7 is a top plan view of one of my suspension clips.

A preferred embodiment of my invention comprises a hanger plate 10, which is preferably formed of metal. Hanger plate 10 is rectangular in shape and is built downwardly at right angles along its sides to form side members 11 and 12.

In the center of hanger plate 10 is a circular opening 13, on each side of which are a pair of segmental openings 14 and 15, which are shaped like segments of a circle having a diameter slightly smaller than the width of hanger plate 10.

Farther toward each of the ends of hanger plate 10 are a pair of hanger tabs 16 and 17. Hanger tabs 16 and 17 are formed by cutting

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a substantially rectangular portion of hanger plate 10 on three sides and then pushing the portion so cut downwardly. Hanger tabs 16 and 17 are provided with a slight S-shaped curve, so that they are slightly yieldable. Upon the application of pressure, hanger tabs 16 and 17 may be moved slightly away from hanger plate 10.

Adjacent the center of the ends of hanger plate 10 are a pair of circular openings 18 and 19 of the same diameter as circular opening 13. Adjacent opening 18 are a pair of screw openings 20 and 21, which are circular and are smaller in diameter than circular opening 18. The area immediately surrounding screw openings 20 and 21 is slightly raised in a mound shape to provide space beneath for a screw head. A similar pair of screw openings 22 and 23 is provided adjacent circular opening 19.

Adjacent the opposite ends of side member 11 of hanger plate 10 are two oblong openings 24 and 25. Adjacent the opposite ends of side member 12 are two similar oblong openings 26 and 27. This comprises the complete construction of my hanger plate 10.

The lighting fixture assembly which is to be installed comprises in part a longitudinal channel 28, which holds wiring leading to a plurality of light sockets. The top side of channel 28 is provided with three knockout type openings 29, 30 and 31. The center opening 30 is oblong in shape and the side openings 29 and 31 are circular in shape. These openings are so formed that they are normally covered by a piece of metal which may be knocked out by the use of a hammer or similar tool.

Positioned adjacent each side of center opening 30 between it and adjacent openings 29 and 31 are a pair of rectangular depressions 32 and 33. Rectangular depressions 32 and 33 extend downwardly a slight distance from the top surface of channel 28.

Adjacent two of the corners of rectangular depression 32 in its downwardly sloping sides are a pair of small round openings 34 and 35. Rectangular depression 33 has a similar pair of openings 36 and 37. Two suspension clips 38 and 39 are substantially U-shaped having small extensions 40, 41, 42 and 43 extending outwardly at right angles to fit within openings 34 and 35 and openings 36 and 37 respectively.

Suspension clips 38 and 39 are adapted to fit within rectangular depressions 32 and 33 without projecting above the top surface of channel 28. Suspension clip 38 may be lifted, so that its

extensions 40 and 41 rotate in openings 34 and 35. Suspension clip 39 may be similarly lifted to an upright position.

Extending outwardly from one side of channel 28 on a line with the radii of openings 29 and 31 are a pair of round metal fixed studs 44 and 45.

On the opposite side of channel 28 in a direct line with fixed studs 44 and 45 are two openings 46 and 47. Extending outwardly through openings 46 and 47 are a pair of depressible studs 48 and 49, which are screw threaded on their outer ends.

Depressible studs 48 and 49 are attached to the opposite ends of a narrow metallic spring band 50 which is mounted within channel 28 along one side and adjacent the top thereof. The center of spring band 50 is firmly attached to the side of channel 28. It is bowed from the point of attachment to its ends, so as to act as a spring.

Depressible studs 48 and 49 may be pushed inwardly from the outside of channel 28 against the pressure of spring band 50 until they are flush with the sides of channel 28. When pressure is no longer exerted upon them, the pressure from spring band 50 causes studs 48 and 49 to again project from the sides of channel 28.

In use, my hanger plate 10 may be attached to the plaster of a ceiling by the use of toggle screws extending through screw openings 20, 21, 22 and 23. If there is an existing electrical outlet box, my hanger plate 10 may be attached to it through circular opening 13 in the center of hanger plate 10.

It should be particularly noted that in either case, the user is attaching to the ceiling only the hanger plate 10, which weighs a few ounces. This can be done by one man, whereas the attachment of the lighting fixture itself would necessarily require the services of a second man to hold the heavy lighting fixture while the first man performed the attaching operations.

After hanger plate 10 has been attached to the ceiling or outlet box, the electrical wires are brought down either through center opening 13 or through segmental openings 14 and/or 15. The center knockout opening 30 in channel 28 is punched out and the electrical wires brought out through the opening.

The complete lighting fixture of which channel 28 is a part may then be lifted to the ceiling. Suspension clips 38 and 39 are lifted and slid between hanger tabs 16 and 17 and the top under-surface of hanger plate 10. Suspension clips 38 and 39 are slightly larger in diameter than the space normally existing between the tops of hanger tabs 16 and 17 and the adjacent under-surface of the top of hanger plate 10. When suspension clips 38 and 39 pass through this opening, hanger tabs 16 and 17 yield sufficiently to permit the clips to pass and the tabs then return to their normal position.

The electrical wires may then be spliced together. To complete the attachment of the lighting fixture, channel 28 is moved so that the fixed studs 44 and 45 projecting from its sides pass through the oblong openings 24 and 25 in side member 11 of hanger plate 10.

The depressible studs 48 and 49 may then be held flush against the sides of channel 28 with the thumbs, while the hands exert upward pressure on channel 28. Channel 28 is then pushed upwardly until it fits within the sides of hanger plate 10. Depressible studs 48 and 49 then snap back out through openings 26 and 27 in the side member 12 of hanger plate 10. A pair of wing nuts may then be screw threaded on depressible studs 48 and 49. This completes the installation of the lighting fixture for a flush type mounting.

In the use of a pendant type mounting, hanger plate 10 is first attached to the stem and canopy assembly through openings 18 and 19. The stem and canopy assembly is then attached to the ceiling or outlet box.

The two side circular knockout openings 29 and 31 in channel 28 are then punched out. The electrical wires from channel 28 are pulled out through one or both of openings 29 and 31. Channel 28 is then fastened to hanger plate 10 by means of suspension clips 38 and 39 as previously described in the case of flush mounting. The electrical wire splice is then made and the wires are then threaded up through one or both of the stems of the pendant type mounting.

The channel 28 is then attached to hanger plate 10 in the same manner as that previously described for flush mounting. In both types of assembly, the segmental openings 14 and 15 provide an opening for inspection of the wire splice.

Having thus described my invention, I claim:

1. A lighting fixture installation comprising a hanger plate, said hanger plate having a plurality of small openings adapted to receive toggle screws for attaching said hanger plate to the ceiling of a room, said hanger plate having a center circular opening and a pair of end circular openings adjacent its ends, said center opening adapted to be used for attaching said hanger plate to an outlet box, said end circular openings adapted to be used for attaching said hanger plate to a stem and canopy lighting assembly, said hanger plate having a pair of hanger tabs, said hanger tabs extending beneath the under-surface of said hanger plate, said hanger tabs being slightly yieldable to pressure, said hanger plate having a pair of integral side members, each of side members having a pair of openings adjacent its ends, and a lighting fixture channel, said channel having three knock-out openings spaced to correspond with the circular openings in said hanger plate, said channel having a pair of rectangular depressions, a pair of suspension clips attached to said channel adjacent the ends of said rectangular depressions, said channel having on one side thereof a pair of fixed studs extending outwardly therefrom and spaced to correspond with the openings adjacent the ends of the side members of said hanger plate, said channel having on its other side a pair of stud openings spaced to correspond with said fixed studs, a spring band mounted within one side of said channel and attached thereto adjacent the center of said band, a pair of depressible studs attached to the ends of said spring band, said depressible studs normally extending through the stud openings in the side of said channel and so held by said spring band, said depressible studs having screw-threaded ends adapted to receive wing nuts, said lighting fixture installation adapted to be installed by one man by first attaching said hanger plate to the ceiling, outlet box or stem and canopy assembly, said lighting fixture channel then adapted to be partially attached to said hanger plate by attaching said suspension clips to said hanger tabs, said fixed studs adapted to be inserted into the openings adjacent the ends of one of the side members of said hanger plate, said depressible studs adapted to be manually depressed against the pressure of said spring band to permit said channel to fit between the side members of said

hanger plate, said depressible studs adapted to be released to project outwardly through the stud openings in the other side member of said hanger plate, said suspension clips and hanger tabs adapted to fit within the rectangular depressions in said channel, so that said channel fits within the sides of said hanger plate and is so held to complete the installation of the lighting fixture.

2. A lighting fixture installation comprising a hanger plate, said hanger plate having a plurality of openings for attaching said hanger plate to the ceiling of a room, an outlet box, or a stem and canopy lighting assembly, said hanger plate having a pair of hanger tabs, said hanger tabs extending beneath the under-surface of said hanger plate, said hanger tabs being slightly yieldable to pressure, said hanger plate having a pair of side members, each of side members having a pair of openings adjacent its ends, and a lighting fixture channel, said channel having openings for electrical wiring, said channel having a pair of rectangular depressions, a pair of suspension clips attached to said channel adjacent said rectangular depressions, said channel having on one side thereof a pair of fixed studs extending outwardly therefrom and spaced to correspond with the openings adjacent the ends of the side members of said hanger plate, said channel having on its other side a pair of stud openings spaced to correspond with said fixed studs, a spring band mounted within one side of said channel and attached thereto adjacent the center of said band, a pair of depressible studs attached to the ends of said spring band, said depressible studs normally extending through the stud openings in the side of said channel and so held by said spring band, said lighting fixture installation adapted to be installed by one man by first attaching said hanger plate to the ceiling, outlet box or stem and canopy assembly, said lighting fixture channel then adapted to be partially attached to said hanger plate by attaching said suspension clips to said hanger tabs, said fixed studs adapted to be inserted into the openings adjacent the ends of one of the side members of said hanger plate, said depressible studs adapted to be manually depressed against the pressure of said spring band to permit said channel to fit between the side members of said hanger plate, said depressible studs adapted to be released to project outwardly through the stud openings in the other side member of said hanger plate, said suspension clips and hanger tabs adapted to fit within the rectangular depressions in said channel, so that said channel fits within the sides of said hanger plate and is so held to complete the installation of the lighting fixture.

LESLIE K. SCHOENBROD.

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