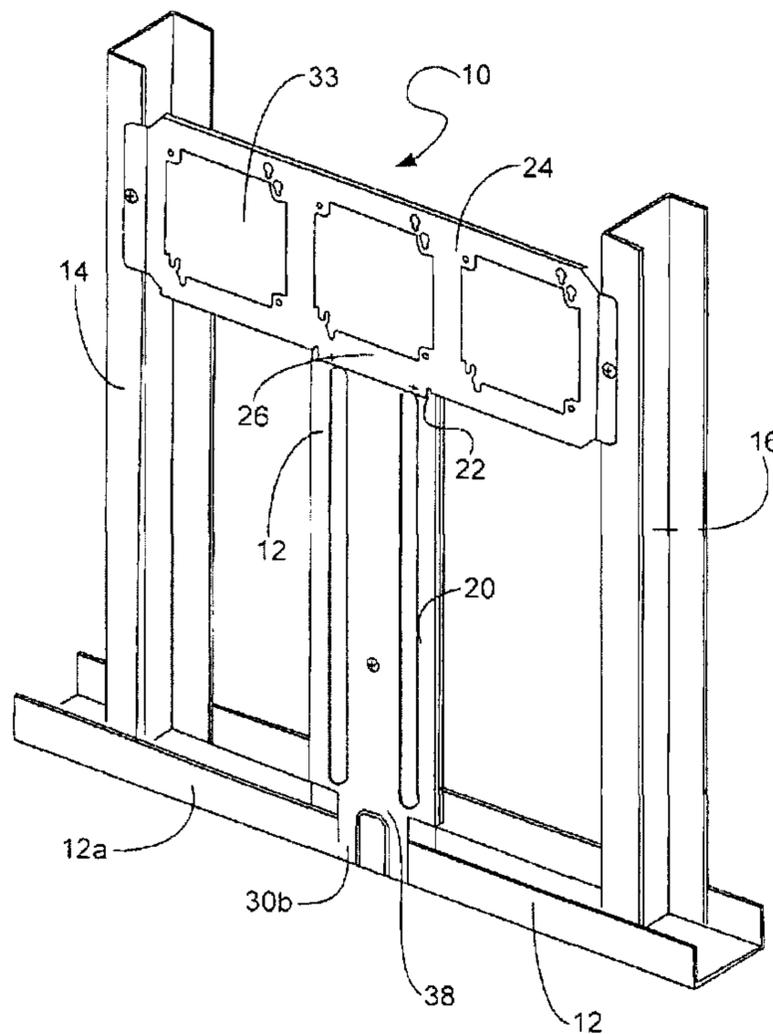




(22) Date de dépôt/Filing Date: 2009/09/17
 (41) Mise à la disp. pub./Open to Public Insp.: 2010/03/26
 (45) Date de délivrance/Issue Date: 2012/06/26
 (30) Priorité/Priority: 2008/09/26 (US61/100,302)

(51) Cl.Int./Int.Cl. *H02G 3/02* (2006.01),
H02G 3/08 (2006.01)
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(54) Titre : SUPPORT DE FIXATION PREFABRIQUE
 (54) Title: PREFABRICATED MOUNTING BRACKET ASSEMBLY



(57) **Abrégé/Abstract:**

A bracket assembly supports an electrical box between wall studs. The bracket assembly includes an elongate vertical bracket having a first end for attachment to a horizontal stud and an opposed upper end. An elongate horizontal bracket is affixed to the upper end of the vertical bracket. The horizontal bracket includes a pair of opposed ends for attachment to spaced apart vertical studs. The horizontal bracket defines a frame including a plurality of openings. The frame accommodates on one side thereof an electrical box about each opening and accommodates on the other side thereof a mud ring about each opening.



ABSTRACT:

[0028] A bracket assembly supports an electrical box between wall studs. The bracket assembly includes an elongate vertical bracket having a first end for attachment to a horizontal stud and an opposed upper end. An elongate horizontal bracket is affixed to the upper end of the vertical bracket. The horizontal bracket includes a pair of opposed ends for attachment to spaced apart vertical studs. The horizontal bracket defines a frame including a plurality of openings. The frame accommodates on side thereof an electrical box about each opening and accommodates on the other side thereof a mud ring about each opening.

PREFABRICATED MOUNTING BRACKET ASSEMBLY**FIELD OF THE INVENTION:**

[0002] The present invention is directed generally to a mounting bracket assembly which supports an electrical box and/or a mud ring within a structural wall. More particularly, the present invention relates to a prefabricated T-shaped mounting bracket which is affixed to a floor track and to vertical studs.

BACKGROUND OF THE INVENTION:

[0003] In order to install various electrical components such as outlets, switches and the like which are used for power, telecommunications and data, boxes, housings or frames are typically used to support the device. One traditional method of mounting such boxes and frames is to mount these devices directly to the wall studs which support the wall board.

[0004] While this technique adequately serves to support the electrical devices, there are certain distinct disadvantages. Since the boxes and frames must be mounted to the studs, it limits the locations where such devices can be supported, inasmuch as the devices must be supported adjacent the wall studs. Moreover, since these devices can be mounted vertically along the stud at any location, the installer must precisely measure and locate these devices to assure

consistency with respect to the height of installation of these devices, as well as compliance with applicable codes and specifications.

[0005] In situations where it is desirable to mount boxes and frames some distance from the stud, a bracket is often used. The brackets take two basic different forms. The first is a horizontally mounted bracket which generally mounts to two spaced apart vertical studs. The other type of bracket is a vertical bracket which is mounted to a floor stud and extends upwardly.

[0006] As can be appreciated, the horizontal bracket suffers from the problem that its height from the floor still must be accurately measured to assure consistency. Vertical brackets suffer from the problem that since it is mounted at one end in a cantilevered fashion, securement of the box or bracket is not always assured.

[0007] It is desirable, therefore, to provide an improved bracket assembly which overcomes many of the disadvantages of the prior art.

SUMMARY OF THE INVENTION:

[0008] The present invention provides a bracket assembly for supporting an electrical box. The bracket assembly includes an elongate vertical bracket having a first end for attachment to a horizontal floor stud and an opposed upper end. An elongate horizontal bracket is affixed to the upper end of the vertical bracket. The horizontal bracket includes one end for attachment to one vertical stud and an opposed end for attachment to another vertical stud spaced from the one stud. The horizontal bracket defines a frame including a plurality of openings. The

frame is positioned to accommodate on one side thereof an electrical box about each opening and for accommodating on the other side thereof a mud ring about each opening.

BRIEF DESCRIPTION OF THE DRAWINGS:

[0009] Figures 1 and 2 are perspective views of the mounting bracket assembly of the present invention shown secured to a floor track and wall studs.

[0010] Figures 3 and 4 are perspective showings of the mounting bracket assembly of the present invention supporting an electrical box.

[0011] Figures 5 and 6 show the mounting bracket assembly of the present invention supporting an electrical box and a mud ring.

[0012] Figure 7 is an enlarged view of a portion of the mounting bracket assembly of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT:

[0013] The present invention is designed to support an electrical box and/or mud ring within a structural wall. The bracket assembly of the present invention is designed for “new work” projects where the box and mud ring are installed prior to placement of the wall board.

[0014] Referring to Figures 1 and 2, a mounting bracket assembly 10 of the present invention is shown. The mounting bracket assembly 10 is designed to be affixed to structural

components which support the wall board (not shown) in residential and commercial construction. In particular, the mounting bracket assembly 10 of the present invention is designed to be supported to a floor track 12 which extends horizontally and is secured to a floor and to spaced apart vertical wall studs 14 and 16 which extend upwardly from floor track 12. While the present invention is shown primarily for use with U-shaped metallic track type studs, it may be appreciated that the present invention may be employed with any type of structural studs including wood studs.

[0015] As shown in Figures 1 and 2, a mounting bracket assembly 10 has generally a T-shaped construction including a vertical bracket 20 which is affixed at its upper end 22 to a horizontal bracket 24 at a central location 26 thereof to form the T-shaped configuration. Vertical bracket 22 may be affixed to the horizontal bracket 24 by a wide variety of techniques including use of mechanical fasteners, welding or any other technique which would permanently affix the components. It is also contemplated that the horizontal and vertical bracket could be formed as an integral unit.

[0016] The vertical bracket 20 includes at its lower end 28 a plurality of attachment fingers 30. Attachment fingers 30 include a pair of spaced apart rear attachment fingers 30a and a central forward attachment finger 30b. The attachment fingers are slightly spaced apart in a depth-wise fashion so as to permit insertion of an upwardly extending edge 12a of floor track 12 thereinto.

[0017] The vertical bracket 20 has a length which is selected so that when the horizontal bracket 24 is positioned thereover the electrical box or boxes which are attached to the horizontal bracket will be positioned at the appropriate height from the floor. Different length vertical brackets may be provided to accommodate different desirable positions of the electrical box.

[0018] The horizontal bracket 24 is selected to have a length which spans the space between upwardly extending spaced apart vertical wall studs 14 and 16. Different length horizontal brackets may be provided to accommodate different spacings between the vertical wall studs.

[0019] Referring additionally to Figures 3 and 4, the horizontal bracket 24 includes a plurality of horizontally spaced openings 33 which accommodate an electrical box 32 mounted to the rear surface 34 thereof. Box 32 may be a conventional rectangular outlet box having a box interior 32a which is generally coextensive with opening 30 when the box is positioned on the horizontal bracket 24. Use of other box configurations is within the contemplation of the present invention.

[0020] Referring now to Figures 5 and 6, the horizontal bracket 24 is shown also supporting a mud ring 40 adjacent a front surface 36 thereof which is opposite rear surface 34. The mud ring 40 is also a conventional structure which is well known in the art. The mud ring 40 has a central opening 43 and an attached flange 45 on either side of opening 43. The attached flanges 45 include slotted channels 42 for mounting the mud ring 40 to bracket 24 as

will be described hereinbelow. The mud ring 40 is used to provide the proper opening and for mounting electrical fixtures, covers and the like once the wall board is placed on the studs.

[0021] The mounting of box electrical box 32 and mud ring 40 will be described in further detail hereinbelow with respect to Figures 5-7.

[0022] The horizontal bracket 24 is affixed to spaced apart studs 14 and 16 by providing a mounting surface 50 at each distal end thereof. Mounting surfaces 50 are designed to be supported against the front face 14a, 16a of vertical studs 14 and 16.

[0023] With additional reference to Figure 7, the securement of horizontal bracket 24 to studs 14 and 16 may be further shown. Mounting surfaces 50 each include a central aperture 52 which accommodates a captive screw assembly 54. Captive screw assembly 54 includes a screw 56 and a washer/backer 58. The screw 56 includes a screw head 56a and a threaded shaft 56b where the shaft is inserted through the aperture 52. The washer/backer 58, having an opening 58a, is inserted over the shaft 56b once the screw is inserted through the aperture 52 to captively retain the screw in the aperture 52. This opening 58a may be T-shaped, cross-shaped or otherwise. It may also be made of metal, plastic or a paper product. Alternatively, aperture 52 on mounting surface 50 may be sized to secure screw 56 by friction such that washer/backer 58 is optional. In this regard, the screw 56 will be self-captive in aperture 52 without need of the washer/backer 58.

[0024] It is contemplated that upon attachment of the horizontal bracket 24 to studs 14 and 16, the screw 56 can then be screw inserted through the face of the vertical stud as shown in Figures 2, 4 and 6. During installation, the installer need not remove the washer/backer 58 as the screw can be driven into the face of the stud with the washer remaining in place. The captive screw assembly 54 greatly reduces the time to secure the bracket to the stud and prevents loss of the screw during installation.

[0025] With reference to Figures 3, 4 and 7, the mounting of the electrical box to the horizontal bracket 24 is shown. As is typical, the electrical box includes at least a pair of mounting screws 37 at diagonal corners of the box which are insertable into tabs (not shown) extending inwardly toward the box interior as is conventionally known. As particularly shown in Figure 7, the horizontal bracket 24 includes around each mounting opening 33 mounting structure which supports the box to the bracket using the mounting screw 37 of the box. In one diagonal corner of opening 30, the bracket 24 includes a pair of vertically and horizontally spaced keyhole apertures 60. At the other diagonally opposite corner, the bracket 24 includes a pair of generally U-shaped recesses 70. As may be appreciated, the box 32 may be attached to the rear surface 34 of horizontal bracket 24 by inserting the heads of the mounting screws 37 through the wider extent 60a of keyhole aperture 60. The screw 37 then drops to the narrow extent 60b thus providing support for the screw within the aperture 60. Similarly, at the diagonally opposite corner, the screw 57 would drop into one of the recesses 70 to support the box 38 at that corner. Two spaced apart keyhole apertures 60 and mounting recesses 70 are provided so as to accommodate two different sized boxes.

[0026] Once the box 32 is supported on bracket 24, the mud ring 40 may be applied thereto as shown in Figures 5 and 6. The mud ring 40 can be applied to the box screws 37 in conventional fashion using the slotted channels 42 of the mud ring to place the mud ring over the opening 33. As can be seen particularly in Figure 5, the box screws fit within the slotted channels 42 of mud ring 40. Thereafter, the screws 37 be tightened down securing both the mud ring 40 and the box 33 to the bracket.

[0027] Various changes to the foregoing described and shown structures would now be evident to those skilled in the art. Accordingly, the particularly disclosed scope of the invention is set forth in the following claims.

WHAT IS CLAIMED IS:

1. A bracket assembly for supporting an electrical box comprising:
 - an elongate vertical bracket, said bracket having a first end for attachment to a horizontal floor stud and an opposed upper end;
 - an elongated horizontal bracket affixed to said upper end of said vertical bracket; said horizontal bracket including one end for attachment to one vertical stud and an opposed end for attachment to another vertical stud spaced from said one stud; said horizontal bracket defining a frame including a plurality of openings, said frame for accommodating on one side thereof an electrical box about each opening and for accommodating on the other side thereof a mud-ring about each opening.
2. A bracket assembly of claim 1 wherein said floor stud includes a floor track and wherein said first end of said vertical bracket includes attachment fingers for attaching said first end to said floor track.
3. A bracket assembly of claim 1 wherein each end of said horizontal bracket includes a mounting surface for engagement with said spaced apart vertical studs.
4. A bracket assembly of claim 3 wherein each said mounting surface includes a screw aperture therethrough and wherein each said screw aperture has a mounting screw captively retained therein.

5. A bracket assembly of claim 4 wherein each said mounting screw has a head positioned on one side of said mounting surface and a threaded shaft extending through said screw aperture, said threaded shaft having supported on the other side of said mounting surface a washer element to captively support said screw in said screw aperture.
6. A bracket assembly of claim 4 wherein said mounting screw is captively retained within said screw aperture by friction.
7. A bracket assembly of claim 1 wherein said frame includes a plurality of mounting apertures arranged about each of said plurality of openings said box mounting apertures being arranged to accommodate different size boxes.
8. A bracket assembly of claim 7 wherein said mounting apertures are key-hole shaped apertures.
9. A bracket assembly of claim 8 wherein said key-hole shaped apertures included a wide extent and a narrow extent, said wide extent being positioned vertically above said narrow extent.
10. A bracket assembly of claim 7 wherein said mounting apertures further include recesses formed within said frame opening, said recesses accommodating mounting fasteners for supporting said box and said mud-ring.

11. A bracket assembly for supporting an electric box comprising:

an elongate vertical bracket, said bracket having a first end for attachment to a horizontal floor track and an opposed upper end;

an elongated horizontal bracket affixed to said upper end of said vertical bracket; said horizontal bracket including one end for attachment to one vertical stud and an opposed end for attachment to another vertical stud spaced from said one stud;

each end of said horizontal bracket including a mounting surface for engagement with said spaced apart vertical studs and wherein each mounting surface includes a screw aperture therethrough and wherein each screw aperture has a mounting screw captively retained therein.

12. A bracket assembly of claim 11 wherein each said mounting screw has a head positioned on one side of said mounting surface and a threaded shaft extending through said screw aperture, said threaded shaft having supported on the other side of said mounting surface a washer element to captively support said screw in said screw aperture.

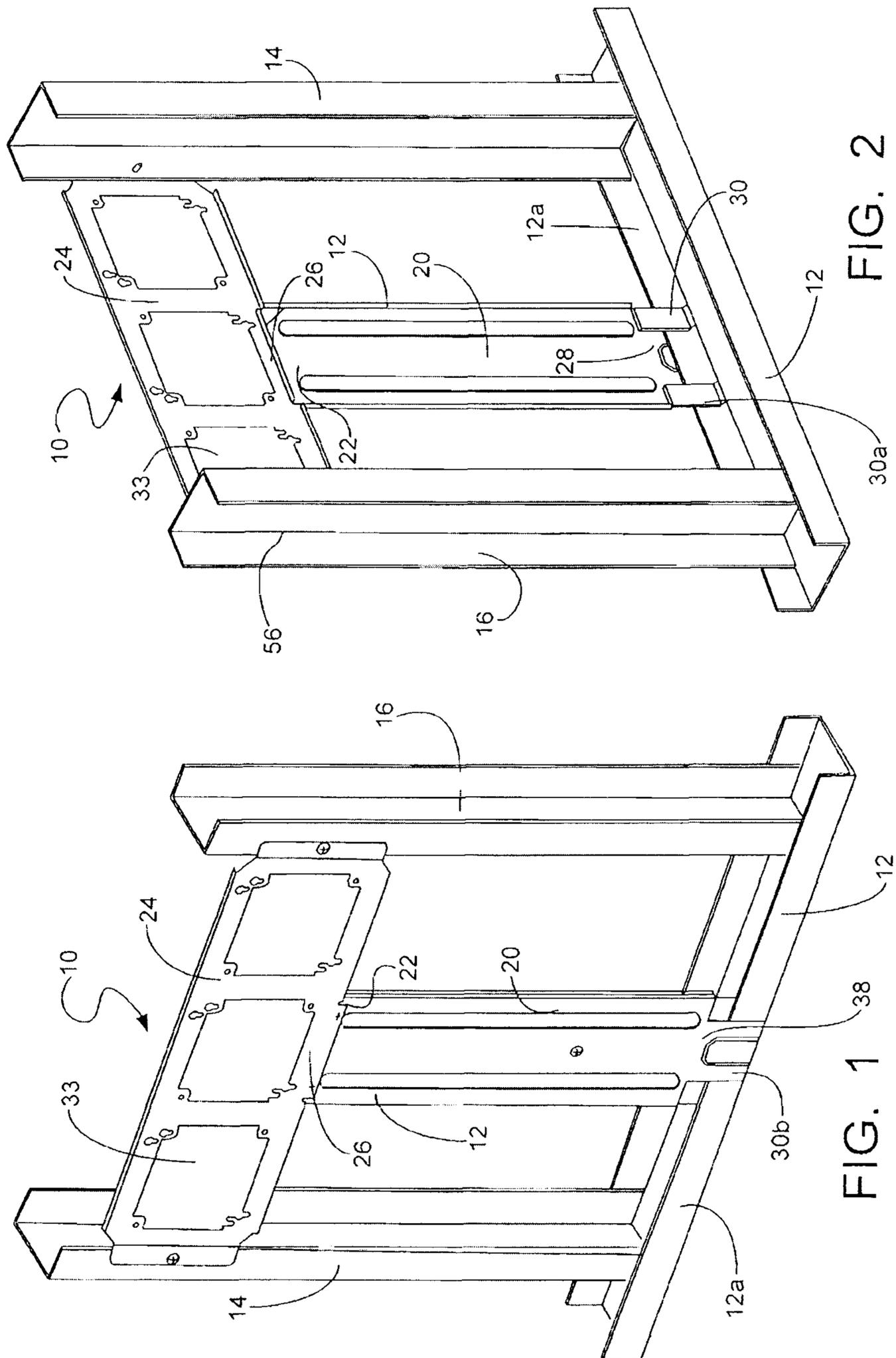


FIG. 2

FIG. 1

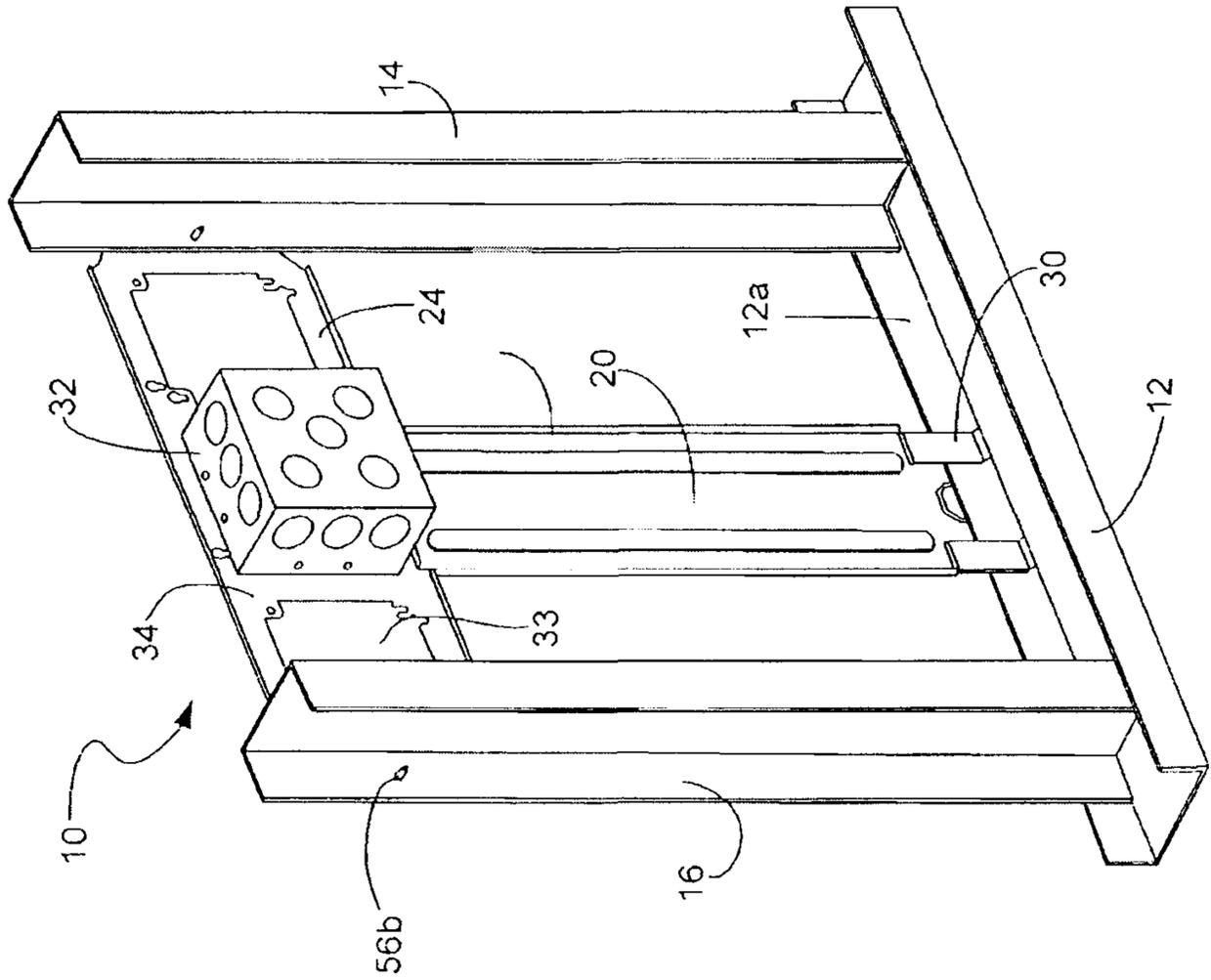


FIG. 4

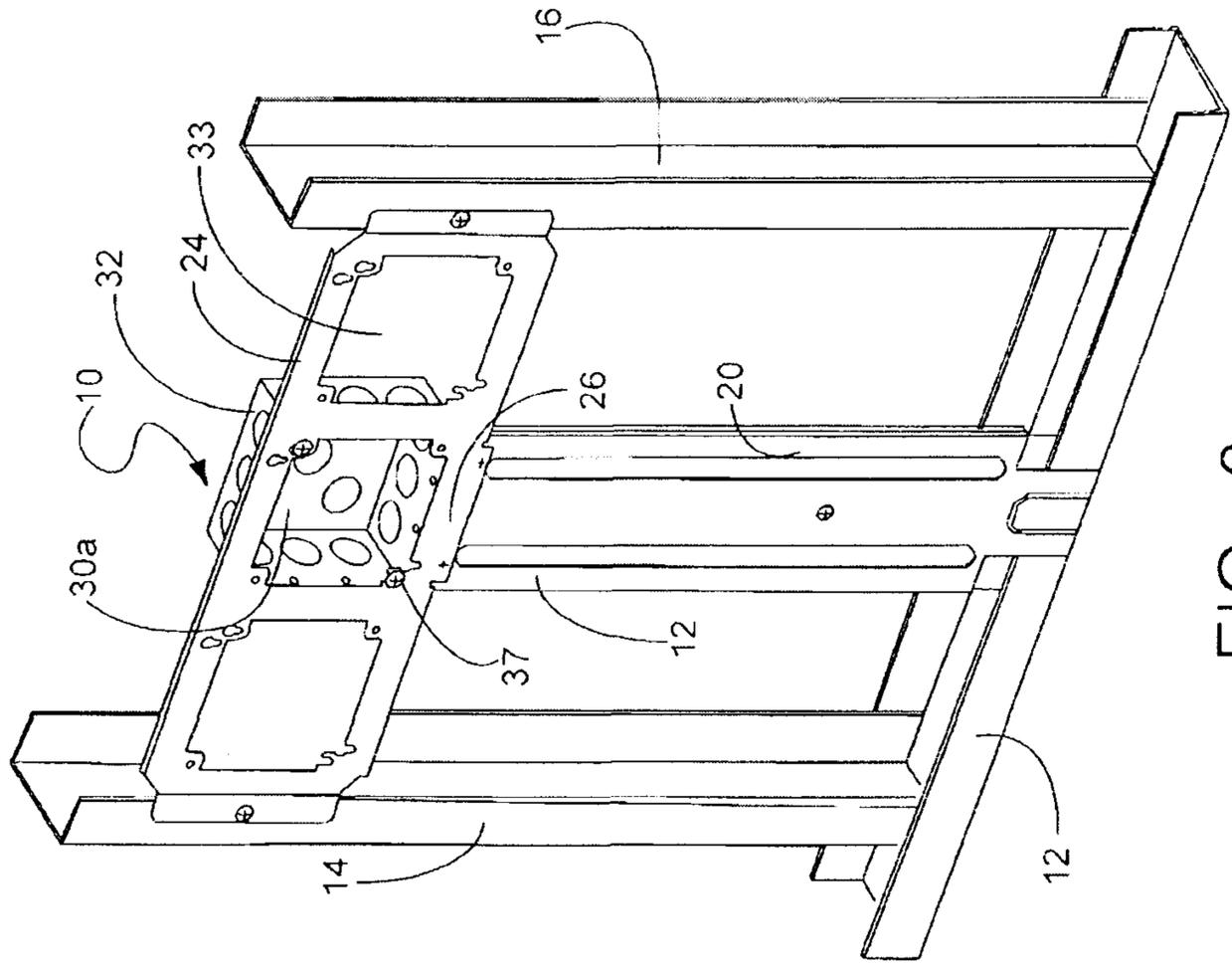


FIG. 3

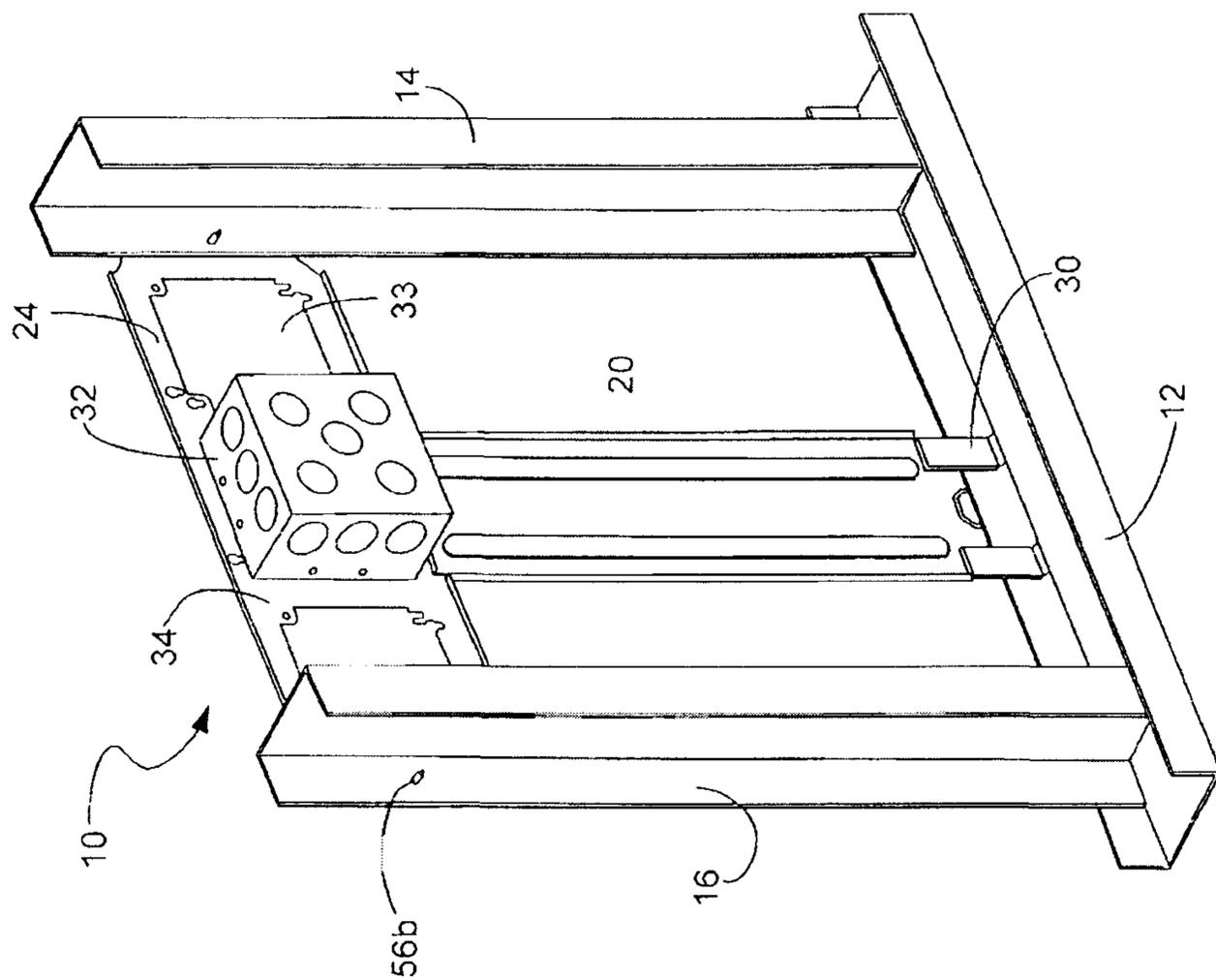


FIG. 6

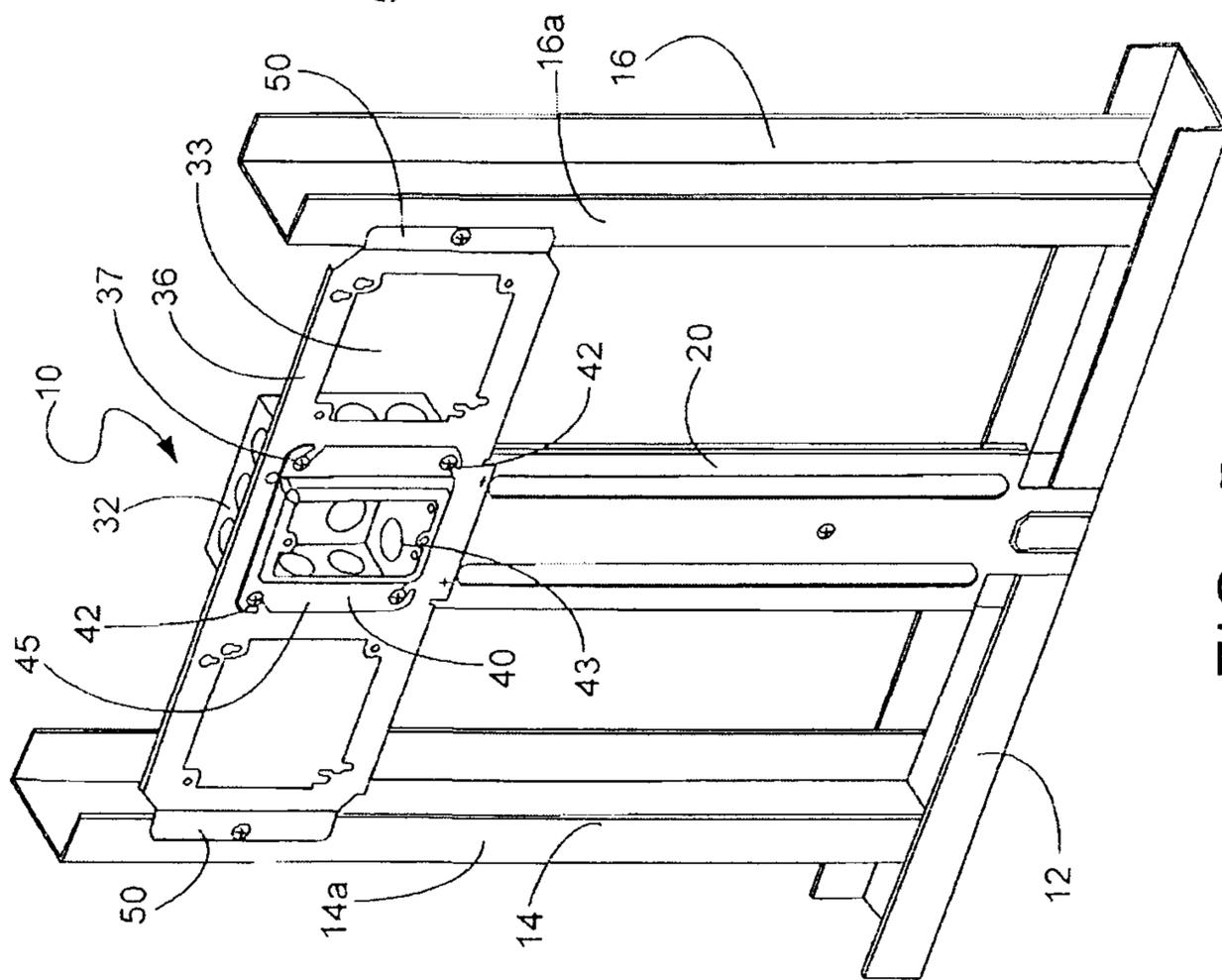


FIG. 5

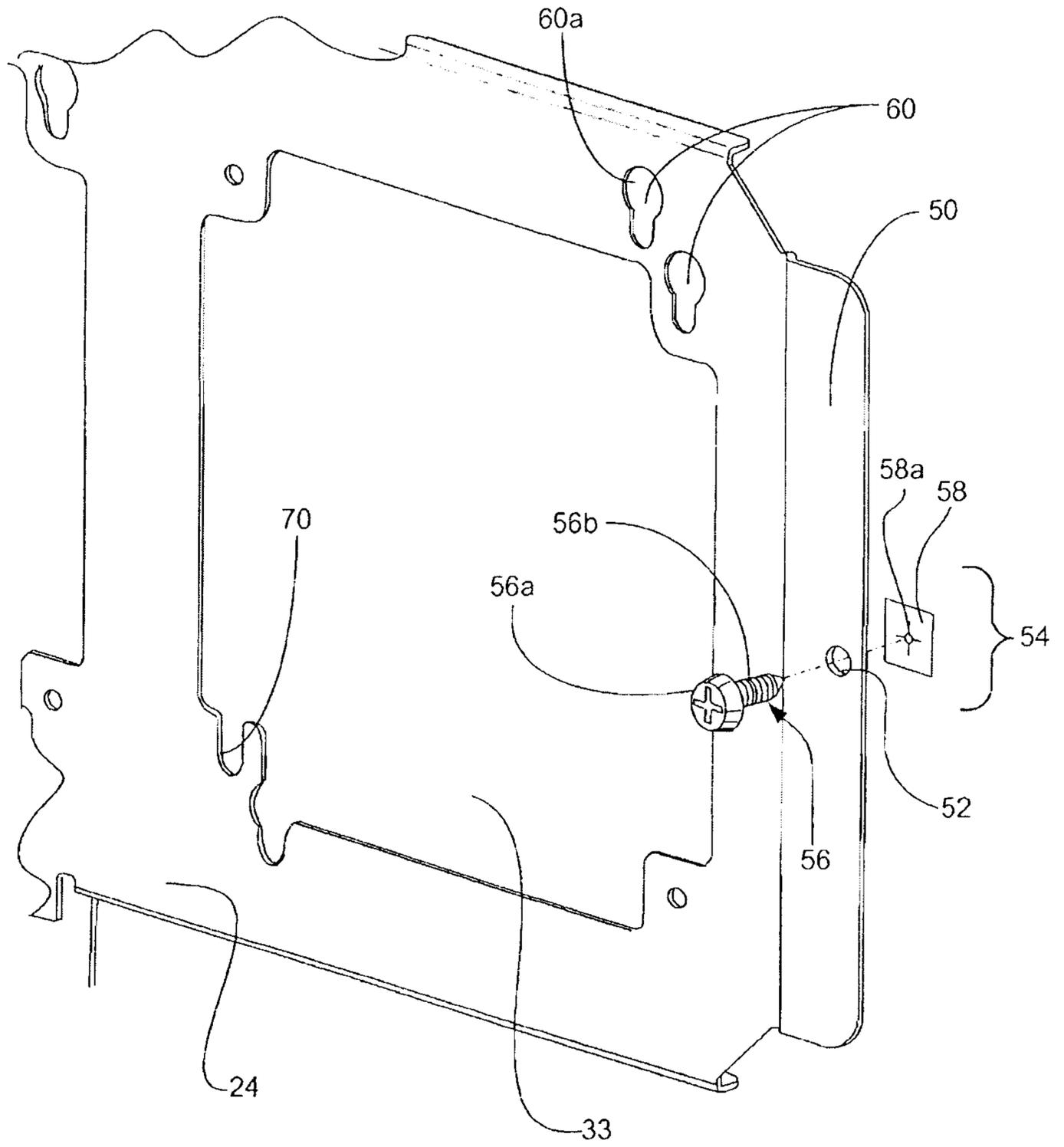


FIG. 7

