Nov. 24, 1959 W. H. FUSS 2,914,601

OUTLET BOX AND FIXTURE SUPPORT ADAPTER

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FIG. 1.

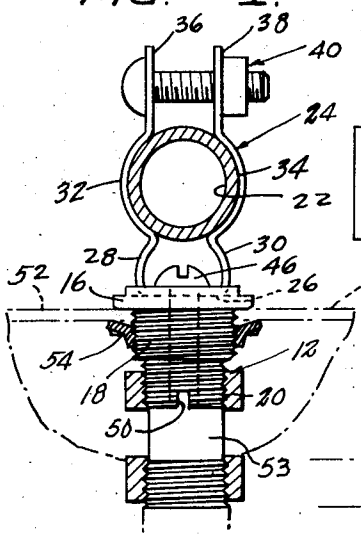


FIG. 2.

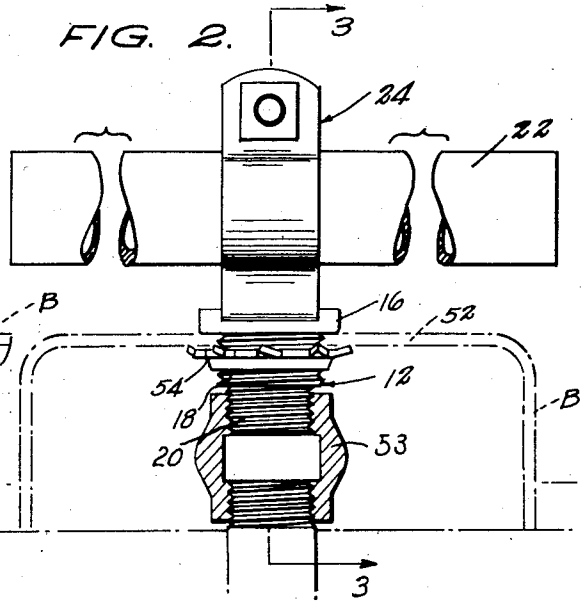


FIG. 3.

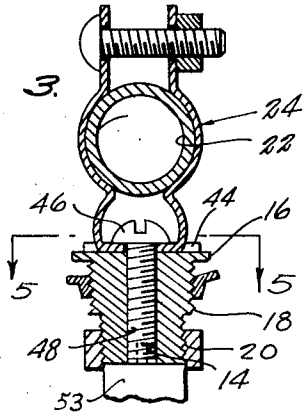


FIG. 4.

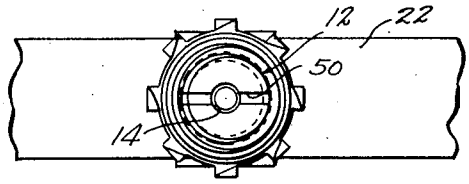


FIG. 5.

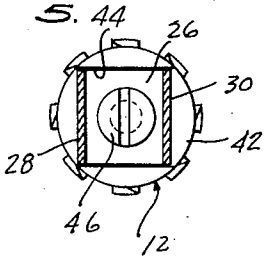
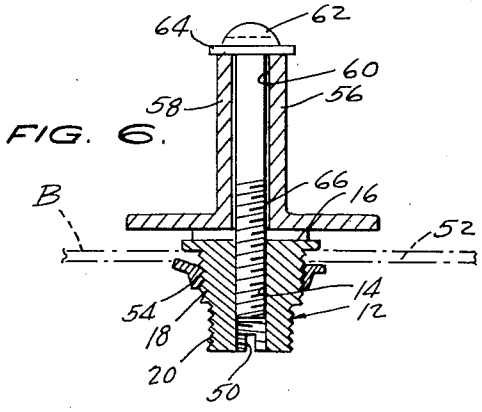


FIG. 6.



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OUTLET BOX AND FIXTURE SUPPORT ADAPTER

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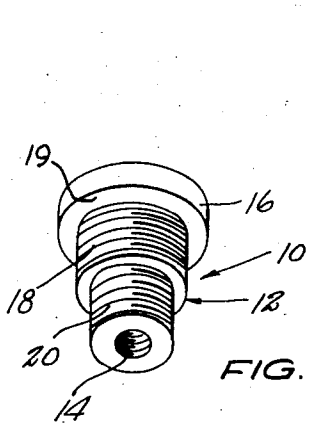


FIG. 7.

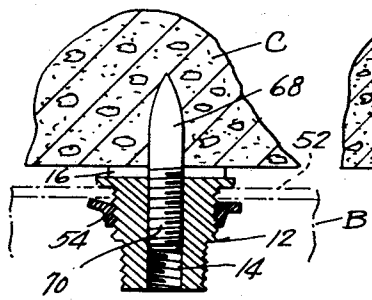


FIG. 8.

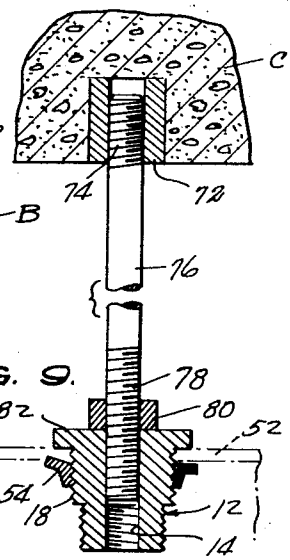
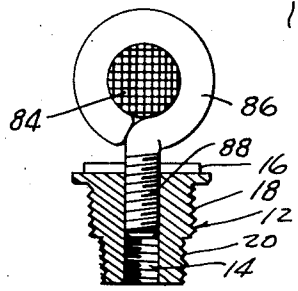


FIG. 9.

FIG. 10.



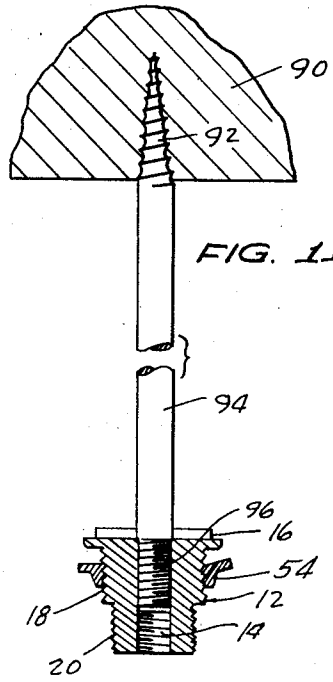
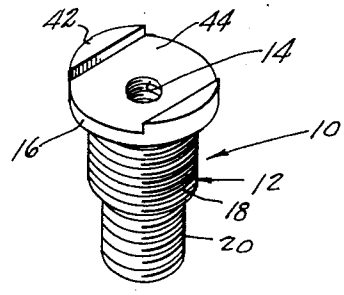


FIG. 11.

FIG. 12.



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OUTLET BOX AND FIXTURE SUPPORT ADAPTER

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Application May 18, 1956, Serial No. 585,725

2 Claims. (Cl. 174—63)

This invention relates generally to hangers for electrical fixtures and the like, and is more particularly concerned with an adapter for hanging electrical outlet or conduit boxes.

Most building specifications in conformance with building codes require that the means for supporting relatively heavy lighting fixtures, such as fluorescent fixtures, and the like, shall be suspended from the concrete slab or structural steel of a roof or ceiling, and the weight of the fixture shall not be hung directly from the ceiling, per se. Oftentimes, the electrical fixtures directly hung from the outlet or conduit box not only are contrary to the building codes and local requirements, but inherently dangerous in the event the ceiling from which the fixture is hung subsequently fails.

A primary object of invention is to provide a novel adapter for suspending electrical fixtures, said adapter including means whereby a plurality of different connecting devices depending from a ceiling or roof construction may be secured thereto, including means for securing an electrical connecting box thereon, and further including means whereby a coupling element, such as a rod or pipe reducer, may be secured in depending relationship from the adapter for accommodating various fixtures in suspended relationship from a ceiling.

Another object of invention is conformance with that set forth is to provide a novel adapter of the character involved which is readily and economically manufactured, easily used, and highly practical, safe, and acceptable for the purpose intended.

These, together with other objects and advantages, which will become subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view of an installed novel adapter, hung from a horizontal support pipe, showing in phantom lines a fragmentary portion of an electrical connection box secured on the adapter;

Figure 2 is a side elevational view of the installed novel adapter, looking from the side of Figure 1;

Figure 3 is a sectional view taken substantially on line 3—3 of Figure 2;

Figure 4 is a bottom plan view of the installed novel adapter of Figure 1;

Figure 5 is a sectional view taken substantially on line 5—5 of Figure 3;

Figure 6 is a sectional view similar to Figure 3, showing the novel adapter installed on the lower angles of the lower chord of a bar joist, for example.

Figure 7 is a perspective view of the novel adapter of the invention looking at the bottom thereof;

Figure 8 is a sectional view similar to Figure 3, showing the novel adapter installed on a stud secured in depending vertical relationship from a concrete slab;

Figure 9 is a view similar to Figure 3, showing a hanger

rod mounted in an anchor in a concrete slab, showing the manner in which the adapter may be vertically adjusted;

Figure 10 is a sectional view similar to Figure 3, showing the installation of the novel adapter on an "eye" bolt suspended from a support cable;

Figure 11 is a sectional view similar to Figure 3, showing the manner in which the novel adapter may be supported from a coach screw secured in wooden decking; and

Figure 12 is another perspective view of the novel adapter, looking at the top thereof.

Referring to the drawings in detail, the novel adapter as seen in Figures 7 and 12 is indicated generally at **10** and includes a cylindrical body member **12**, the member having extending therethrough from one end to the other end an internally threaded bore or bore portion **14** whose purpose will become apparent from the following description. A flange or collar **16** extends externally about the portion of the body member **12** adjacent one end, the collar having a pair of flat faces **42** and **19** with the one face **42** flush with said one end of the body member and the other face **19** adjacent to and spaced from the said one end of the body member **12**. The body member **12** has a first threaded outer peripheral portion **18** which extends from the other face **19** of the collar **16** and terminates at a point spaced from the other end of the body member **12** and of a diameter less than that of the collar **16**, and also, a second threaded outer peripheral portion **20** which extends from the terminating point aforementioned to the other end of the body member **12** and is of a diameter smaller than that of the portion **18**. A threaded nut **54** is in threaded engagement with the threaded portion **18**, the threaded portion **20** being adapted for connection to a coupling element or reducer, as desired, for a particular installation.

Considering Figures 1 through 5, for example, a horizontally disposed support pipe is indicated at **22**, said pipe having secured thereon a clip assembly **24** which includes an apertured bight portion **26** terminating in a pair of oppositely disposed leg portions **28** and **30** incorporating in an intermediate portion thereof oppositely disposed arcuate portions **32** and **34**, respectively, continuing in upper apertured end portions **36** and **38**, respectively, which extend above the support pipe **22** and have extending therethrough a suitable securing nut and bolt assembly, indicated generally at **40**.

The adapter **10**, as clearly seen in Figure 12, has extending diametrically across the face **42** of the collar **16** a grooved portion **44** for accommodating therein the lower bight portion **26** of the clip assembly **24**. The bight portion **26** has extending therethrough a suitable retaining screw element **46**, the threaded body portion **48** of which, see Figure 3, being received within the threaded bore portion **14** of the adapter. As seen in Figures 1 and 4, for example, the body member **12** of the adapter may have extending diametrically thereacross at the end opposite the flange or collar **16**, a kerf **50** for accommodating therein the blade of a screwdriver, facilitating the installation of the adapter.

The top of an electrical connection box is indicated at **52**, said box being indicated generally at B, and including in the top, a conventional knock-out slug portion for accommodating therethrough the threaded portion **18** of the adapter wherein the collar **16** will be in juxtaposition on the top **52** of the connection box. The lock nut **54** is threadingly disposed on the threaded portion **18** of the adapter for clampingly engaging an under surface portion of the outlet box between said lock nut and the collar **16** previously mentioned. The reduced threaded portion **20** of the adapter has a coupling means **53** in threaded engagement therewith, from which means

53 an electrical fixture may be hung therefrom. Thus, the electrical fixture is hung directly from the adapter 10, and is not hung from the connection box B which would be contrary to safety regulations and building codes which have generally been adopted.

Considering Figure 6, a fragmentary portion of a bar joist is constituted by the lower angles of the chord of the bar joist which are indicated at 56 and 58 which incorporate a space 60 therebetween, said space 60 having extending therethrough a suitable connecting bolt 62, said bolt extending through a washer element 64 overlying the upper edges of the angles 56 and 58, the lower threaded portion 66 of said bolt being received in the threaded bore portion 14 of the adapter. In all other respects the adapter is utilized in the same manner previously described relative to Figures 1 through 5, wherein the top portion 52 of the outlet box B is gripped between the lock nut 54 and the flange or collar portion 16 of the adapter.

As seen in Figure 8, a fragmentary portion of a concrete slab is indicated at C, said concrete slab having driven therein a projectile type stud 68 which includes a lower threaded portion 70 received within the threaded bore portion 14 of the novel adapter. The connection box B has the top portion 52 thereof gripped between the lock nut 54 of the adapter and the collar 16 thereof.

As seen in Figure 9, a fragmentary portion of a concrete slab is again indicated at C, said slab having disposed therein in downwardly opening relationship, a suitable anchor sleeve 72 of lead, or any other suitable material, which receives therein the threaded end 74 of a hanger rod 76. The hanger rod 76 is threaded at its lower end 78 which is threadingly received within the threaded bore portion 14 of the adapter. The threaded portion 78 of the rod 76 has disposed thereon a lock nut 80 which engages the upper end 82 of the novel adapter. When the adapter of Figure 9 is utilized with a lock nut 80, the diametrical slot or notch portion 44 is eliminated and the upper end portion of the adapter is substantially smooth. Thus, after the adapter is used, as in Figure 9, and adjusted to a predetermined height by rotating the same on the threaded portion 78 of the hanger rod 76, the nut 80 is urged into relationship with the upper end portion 82 of the adapter, thus locking it in a substantially fixed position. The threaded portion 18 of the adapter accommodates thereon the lock nut 54 for grippingly engaging the top 52 of the outlet box.

Considering Figure 10, a support cable is indicated at 84, said cable having disposed thereon an "eye" bolt 86 which includes a lower threaded shank portion 88 received within the internally threaded bore portion 14 of the novel adapter. The outlet box may be connected directly onto the adapter in the embodiment shown in Figure 10, or if desired, an additional length of rod may be screwed into the threaded bore portion 14 of the adapter for accommodating various heights of ceilings depending upon the given installation. Also, if desired, a suitable coupling may be secured on the lower threaded end 20 of the adapter for accommodating thereon predetermined lengths of nipples, also for the accommodation of various light fixtures in a given installation. In this regard, suitable connecting brackets or support brackets may include threaded aperture portions therethrough for accommodation on the threaded portion 20 of the novel adapter for the purpose of supporting fluorescent light fixture housings, for example.

Considering Figure 11, a fragmentary portion of wooden decking is indicated at 90, said decking accommodating therein the threaded end portion 92 of a coach screw 94, said coach screw 94 having a lower threaded end portion 96 accommodated in the threaded bore portion 14 of the adapter previously described.

Thus, there has been disclosed a novel adapter for electrical connection boxes which permits the connection box to be supported on the adapter independently of the lighting fixture which also will be hung from the adapter. The various sizes of the threaded bore portion 14 and outer peripheral threaded portions 18 and 20 of the adapter will be so proportioned so as to accommodate therein conventionally sized pipe couplings or threaded rods conventionally found in the electrical fixtures now being used.

Although a novel adapter has been disclosed with a diametrical slot portion 44 for accommodating therein the bight portion 26 of the clip assembly 24, for example, and also discloses a slot portion 50 for accommodating a screwdriver blade therein, it is to be understood that the adapter is readily usable without the aforementioned structure and accordingly, the novel adapter will function to afford the novel results without the incorporation of such features.

The various positional and directional terms "lower," "upper," "inner," etc., are utilized herein only to have relative connotation to aid in describing the device and it is not intended to require any particular orientation with respect to any external elements.

The foregoing is considered illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all such modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed is:

1. An adapter for hanging an electrical connection box from an overhead support comprising a cylindrical body member having a flat face at one end and having extending therethrough from one end to the other end an internally threaded bore for threaded engagement therein of a portion of a threaded hanger rod, a flange extending externally about the portion of said body member adjacent one end, said body having a first threaded outer peripheral portion extending from said flange and terminating at a point spaced from the other end of said body and of a diameter less than that of said flange and a second threaded outer-peripheral portion extending from said terminating point to the other end of said body and of a diameter smaller than that of said first portion, the body member first portion being adapted for threaded engagement with a threaded nut or threaded coupling, and said body member second portion being adapted for threaded engagement with a threaded coupling thereto.

2. The combination with an overhead support and an electrical connection box provided with an opening in the top, of an adapter comprising a cylindrical body member having a flat face at one end and having extending therethrough from one end to the other end an internally threaded bore, a flange extending externally about the portion of said body member adjacent one end, said body having a first threaded outer peripheral portion extending from said flange and terminating at a point spaced from the other end of said body and of a diameter less than that of said flange and a second threaded outer peripheral portion extending from said terminating point to the other end of said body and of a diameter smaller than that of said first portion, the said second and first portions of said body member being inserted in the order named through said opening with the flange engaging the adjacent bounding wall of the box opening, a threaded nut in threaded engagement with said body member first portion and bearing against the adjacent bounding wall of said box opening, a threaded hanger means having one end extending into and in threaded engagement with the portion of the threaded bore adjacent the flange and having the portion adjacent the other end secured to said overhead support, and a coupling

means in threaded engagement with said body member second portion.

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