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HANGER BARS FOR ELECTRIC OUTLET BOXES

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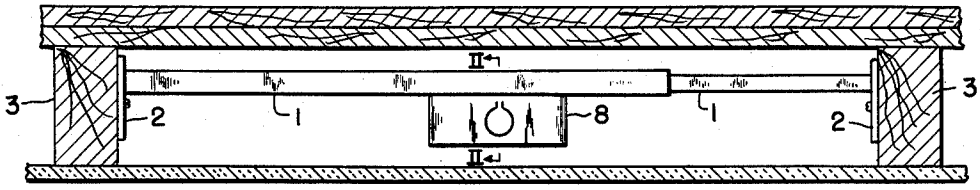


Fig. 1

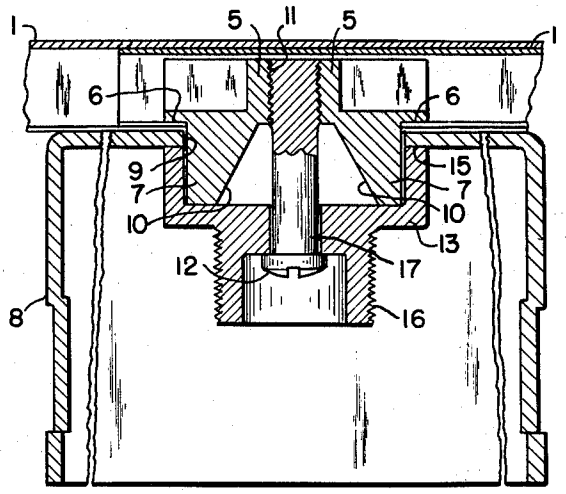


Fig. 3

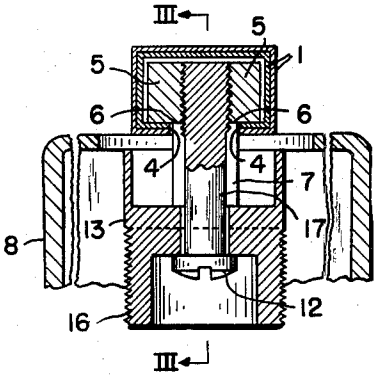


Fig. 2

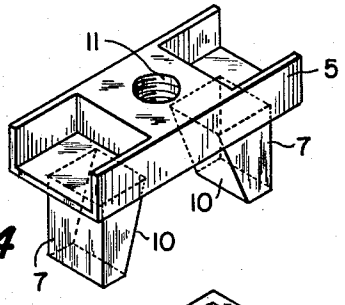


Fig. 4

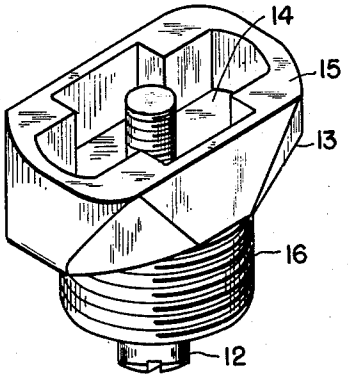


Fig. 5

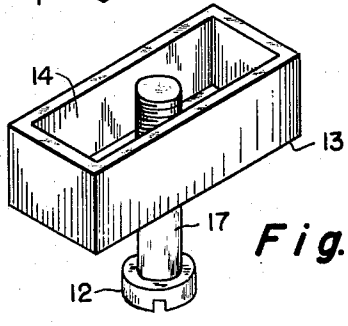


Fig. 6

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HANGER BARS FOR ELECTRIC OUTLET BOXES

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4 Claims. (Cl. 248—276)

This invention relates to hanger bars for electric outlet boxes, more particularly to an improved device for attaching the outlet box to the hanger bar.

Due to the increasing cost of building construction any device which simplifies existing installation procedures, thereby reducing labor costs, is a very valuable advance. Our invention accomplishes this result, providing a hanger bar which is easy to construct and simple to install. The prior art shows hanger bars which are difficult to assemble, requiring a workman to make several adjustments and alignments. Our invention eliminates most of this difficulty. It discloses a hanger bar to which an outlet box can be attached by simply tightening one screw. The construction of the attaching mechanism automatically aligns this screw with its bore and directs the screw to the bore.

We have shown a preferred embodiment of our invention in the accompanying drawings, in which:

Figure 1 is front elevation of a positioned hanger bar embodying our invention with an outlet box attached thereto;

Figure 2 is a transverse section of the hanger bar on line II—II of Figure 1;

Figure 3 is a partial longitudinal section of the hanger bar on line III—III of Figure 2;

Figure 4 is a perspective view of a box carrier, with guide prongs extending therefrom, adapted to fit in a hollow center portion of the hanger bar; and

Figures 5 and 6 are perspective views of two forms of box fasteners for holding an outlet box to the hanger bar.

More particularly, a hanger bar embodying our improved attaching device comprises a pair of hollow elongated telescopic members **1** equipped at their opposed ends with plates **2** for securing the members to floor joists **3** likewise the plates may be secured to wall studs. While telescopic members of rectangular cross section are easier to fabricate and are shown in the drawings, any suitable cross section may be used.

Each of the telescopic members are longitudinally slotted along one face. In a bar having a rectangular cross section these slots may be formed by turning toward each other the edges of a sheet of metal previously bent to form two sides perpendicular to the bottom. When the members are assembled the slots are aligned, thereby providing an opening **4** into the hollow center section of the members. In order that an outlet box may be located at any position between floor joists the opening will generally extend throughout the length of the telescopic members.

A box carrier **5** is inserted in the hollow telescopic members and retained therein by shoulders **6** formed by the opposed sides of the members adjacent the opening **4**. By constructing the box carrier nearly as wide as the hollow center portion of the members and slightly longer than that dimension, sidewise turning of the box carrier is prevented; thus while the box carrier is free to move lengthwise in the members, it will not move sidewise or turn when a locking screw **12** in a box fastener **13** is inserted in a bore **11** in the box carrier.

Guide prongs **7** extend from the box carrier through the opening **4** in the members. These guide prongs are spaced so as to automatically center the outlet box **8** when it is attached to the bar through a hole **9** in one side of the box, which hole is slightly larger in diameter than the distance between the outer surfaces of the guide prongs. The opposed faces **10** of the guide prongs are sloped inwardly toward the center of the box carrier and the bore **11** provided in the box carrier. By this means the locking screw **12** is directed to the bore by the guide prongs.

The box fastener **13** carrying the screw **12** has a rectangular cavity **14** which is adapted to fit over the guide prongs. The cavity is constructed just slightly longer than the distance between the outer surfaces of the guide prongs. Thus when the box fastener is placed over the guide prongs it takes a position with respect to the box carrier which automatically aligns the locking screw **12** with the bore **11** in the box carrier. The width of the cavity is just slightly greater than the width of the guide prongs thereby preventing turning of the box fastener when the locking screw is being engaged. The outer periphery **15** of the box fastener extends over the periphery of the opening **9** in the outlet box and thereby holds the outlet box firmly between the box fastener and the hanger bar when the locking screw is fastened.

The locking screw **12** extends through a bore in the box fastener, which bore is threaded with half threads so as to keep the screw and the box fastener together when they are not secured to the box carrier. The upper portion of the shank **17** of the locking screw **12** is smooth, only a small portion of the end being threaded. By this means the screw may be slipped into engagement with the bore **11** in the box carrier without requiring turning until contact is made with that bore.

Figures 5 and 6 show two different types of box fasteners which may be used. The box fastener shown in Figure 5 is provided with an externally threaded stud **16** extending therefrom.

It will be seen that our invention makes the installation of outlet boxes much easier than has heretofore been possible. The outlet box is placed over the guide prongs extending from the opening in the bar; the box fastener is placed over the guide prongs, automatically centering the bores in the box carrier and the box fastener. In certain instances, there may be such clearance between the smooth portion of the shank **17** and the bore in the box fastener that the screw can pivot in the bore. In such instances, the sloping sides of the guide prongs will guide the screw into engagement with the bore in the box carrier. Then the telescoping members are attached to the joists and the box carrier moved into the desired position. The outlet box is firmly held by tightening the screw.

While we have described a present preferred embodiment of our invention, it is to be understood that it may be otherwise embodied within the scope of the appended claims.

We claim:

1. In a hanger bar for electric outlet boxes, said bar having a pair of hollow elongated telescopic members equipped at their opposed ends with means for securing the members to building joists or studs, improved means for securing an outlet box to the bar, said means comprising an elongated slot in each member said slots being aligned with each other so as to provide an elongated opening into the interior of the members, shoulders formed by the opposed sides of said opening, a box carrier adapted to fit in said members and retained therein by said shoulders, guide prongs extending from the box

carrier through said opening and adapted to extend through an opening in the outlet box, a box fastener adapted to fit over said guide prongs and the periphery of the opening in the box and thereby hold the box firmly between said members and said box fastener, and means to secure the box fastener to the box carrier.

2. In a hanger bar for electric outlet boxes, said bar having a pair of hollow elongated telescopic members equipped at their opposed ends with means for securing the members to building joists or studs, improved means for securing an outlet box to the bar, said means comprising an elongated slot in each member said slots being aligned with each other so as to provide an elongated opening into the interior of the members, shoulders formed by the opposed sides of said opening, a box carrier adapted to fit in said members and retained therein by said shoulders, guide prongs extending from the box carrier through said opening and adapted to extend through an opening in the outlet box, a box fastener adapted to fit over said guide prongs and the periphery of the opening in said box and thereby hold the box firmly between said members and said box fastener, an externally threaded stud extending from said box fastener for supporting fixtures and means to secure the box fastener to the box carrier.

3. In a hanger bar for electric outlet boxes, said bar having a pair of hollow elongated telescopic members equipped at their opposed ends with means for securing the members to building joists or studs, improved means for securing an outlet box to the bar, said means comprising an elongated slot in each member said slots being aligned with each other so as to provide an elongated opening into the interior of the members, shoulders formed by the opposed sides of said opening, a box carrier adapted to fit in said members and retained therein by said shoulders and having a centrally positioned threaded bore, guide prongs extending from the box carrier through said opening and adapted to extend through an opening in the outlet box, a box fastener having a cavity adapted to fit over said guide prongs and said

centrally positioned threaded bore, said box fastener being of sufficient size to extend over the periphery of the opening in the box and thereby hold the box firmly between said members and the box fastener, said guide prongs and said cavity of the box fastener cooperating to align the threaded bore in the box fastener with the threaded bore in the box carrier, and a screw adapted to engage said bores to secure the box fastener to the box carrier.

4. In a hanger bar for electric outlet boxes, said bar having a pair of hollow elongated telescopic members equipped at their opposed ends with means for securing the members to building joists or studs, improved means for securing an outlet box to the bar, said means comprising an elongated slot in each member said slots being aligned with each other so as to provide an elongated opening into the interior of the members, shoulders formed by the opposed sides of said opening, a box carrier adapted to fit in said members and retained therein by said shoulders and having a threaded bore, guide prongs extending from the box carrier through said opening and adapted to extend through an opening in the outlet box, the opposed faces of said guide prongs being angled toward the bore in the box carrier, a box fastener provided with a bore adapted to fit over said guide prongs and the periphery of the opening in the box and thereby hold the box firmly between said members and said box fastener, and a screw adapted to engage said bores to secure the box fastener to the box carrier, said screw being directed toward the bore in the box carrier by the angled faces of the guide prongs.

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