

[54] **EXTENSION CONNECTOR FOR ELECTRICAL OUTLET BOX**

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[51] Int. Cl. **H01t 3/06**

[58] Field of Search 339/14, 133, 134; 174/51, 53

[56] **References Cited**

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[57] **ABSTRACT**

An extension connector for electrical outlet box which embodies a threaded bolt extending through the attachment ear of an electrical unit such as a switch or receptacle and provided with a fixed collar spaced from the head of the bolt and disposed on the underside of the ear and provided with a spring washer between the ear and the collar to maintain positive electrical contact between the bolt and the ear of the electrical unit and thereby provide an adjustable connector for threadably connecting the electrical unit to an outlet box to produce and maintain the desired position of the unit with respect to a finished wall surface while positively maintaining a satisfactory ground connection between the attachment ear of the unit and the box.

6 Claims, 4 Drawing Figures

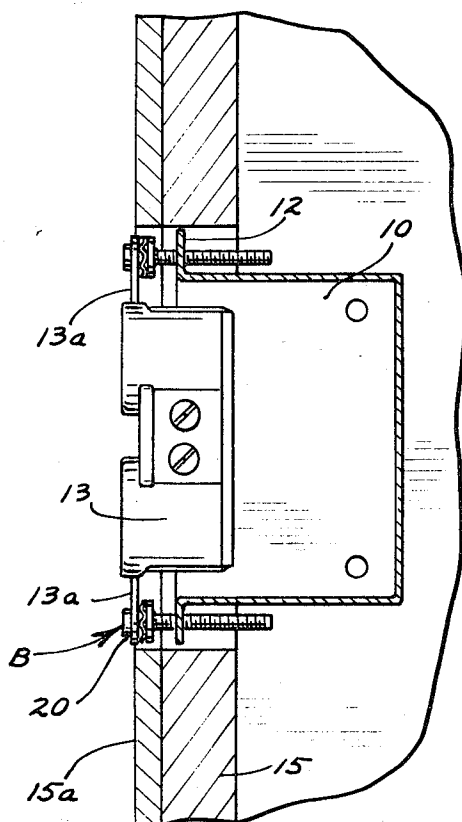


FIG. 1

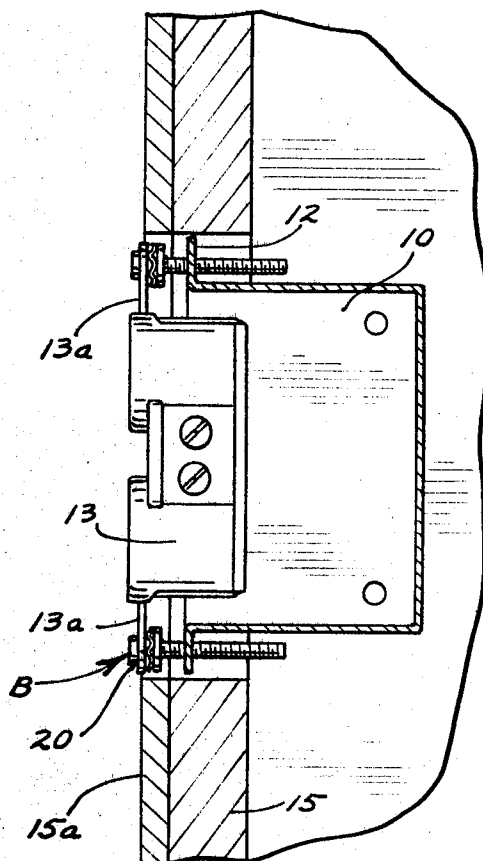
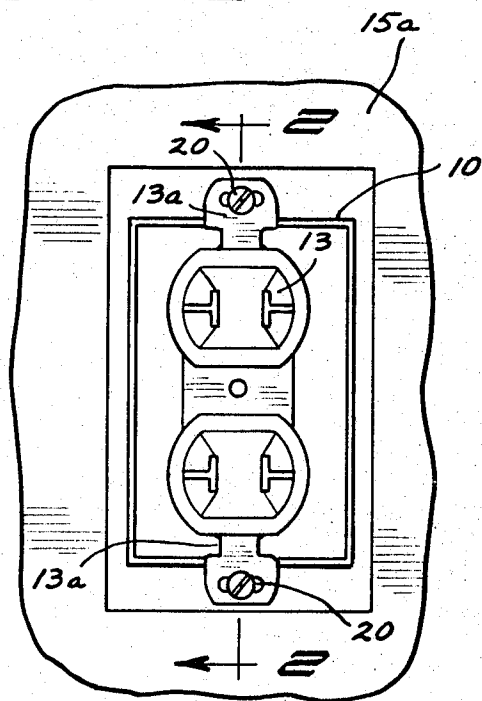


FIG. 2

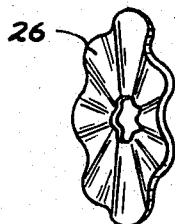


FIG. 4

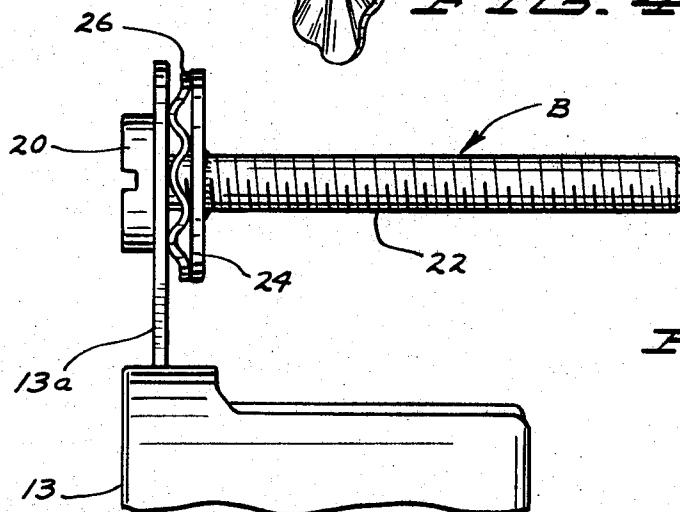


FIG. 3

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EXTENSION CONNECTOR FOR ELECTRICAL OUTLET BOX

This invention relates to an extension connector bolt for permitting an adjustable positioning while threadably connecting an electrical unit such as a switch or receptacle to an outlet box in order to positively maintain the desired position between the unit and a finished wall surface while still establishing good electrical contact between the attachment ears of the electrical unit and the box by threadably connecting the bolt to the box and thus insure proper grounding of the unit.

In the past the problem of providing adjustable positioning of electrical units with respect to the outlet box in which they are mounted has been two-fold: (1) the positive positioning of the unit and (2) the establishing and maintaining the necessary electrical contact between the unit and the box for proper grounding of the unit in accordance with the standards established and required by the electrical codes.

It is an object of the present invention to provide an inexpensive adjustable grounding connector for positively positioning an electrical unit in the desired adjusted position with respect to a wall mounted outlet box while establishing and maintaining the required electrical connection between the unit and the box.

More specifically it is an object to provide a threaded connector bolt having a head element and collar element fixed thereto and respectively positioned on opposite sides of the attachment ear of an electrical unit with a spring member interposed between one of the elements and the ear to maintain positive electrical contact between the ear and the connector bolt.

These and other objects and advantages of the invention will be apparent from the following description made in connection with the accompanying drawing wherein like reference characters refer to similar parts throughout the several views and in which:

FIG. 1 is a front view of an electrical outlet receptacle mounted in an outlet box;

FIG. 2 is a horizontal sectional view taken substantially along the line 2—2 of FIG. 1 showing an electrical outlet receptacle attached to a conventional wall mounted outlet box by means of my adjustable grounding connector;

FIG. 3 is an enlarged elevational view of one end of the receptacle showing my connector mounted on the attachment ear thereof; and

FIG. 4 is a perspective view of the conductive spring washer used in the particular embodiment of the invention illustrated.

A conventional or flush outlet box 10 is shown in the several views of the accompanying drawing and is positively mounted in fixed relation to a wall structure as by any suitable conventional means (not shown). The outer portion of the box is open to receive an electrical unit such as receptacle 13 shown having a pair of attachment or mounting ears 13a. Box 10 is provided with a pair of spaced connector ears 12 having internally threaded apertures therethrough.

The position of the outer face of box 10 and the ears 12 with respect to the finished surface of the wall 15 may vary considerably depending upon thickness of the wall structure and the mounting position of the box relative thereto. This is particularly true when paneling 15a is installed on the wall 15 during a remodeling pro-

ject. It is therefore important that the position of the electrical unit be readily adjustable so that the outer surface thereof will be substantially flush with the finished outer surface of wall 15 and paneling 15a.

The present electrical codes require that the outlet box 10 be suitably grounded and that an independent electrical grounding connection be maintained between the electrical unit such as the receptacle 13 and the box 10. This grounded connection is established through my extension connector bolts "B".

These connector bolts "B" include a head element 20, a threaded shank 22 and a collar element 24 fixed to the shank in spaced relation to the head. An ear 13a of the receptacle 13 is interposed between the head and collar elements 20 and 24 together with a spring washer 26. In the illustrated embodiment, washer 26 is interposed between the underside of ear 13a and collar 24.

By capturing the ear 13a of the receptacle 13 between the head 20 and the collar 24 (both of which are fixed to shank 22 of bolt "B") the position of the outer face of the receptacle 13 can be accurately adjusted and maintained with respect to the outer finished surface of the wall 15. Spring washer 26 provides a mechanical bias force to maintain the positional relationship described above, and positively maintains secure conductive electrical grounding contact between ear 13a of the receptacle and connector bolt "B". Bolt "B" is conductively connected to box 10 through the threaded engagement of shank 22 with attachment ear 12 of said box.

The spring washer 26 not only establishes the required electrical contact as described above, but also provides frictional resistance to rotation of the bolt 13 in order to prevent inadvertent rotation thereof and more positively maintain the desired adjusted position of the receptacle 13 with respect to the finished wall surface.

It will be seen that I have provided an uncomplicated extension connector which permits the positive positioning of an electrical unit such as receptacle 13, a switch, or the like, with respect to an outer finished wall surface while at the same time establishing and maintaining the required electrical contact between the unit and an outlet box for proper grounding of the unit in accordance with the standards established by the electrical codes. A particular advantage of the present extensible connector is its inexpensive manufacture and also the fact that the spring washer materially assists in maintaining the desired adjusted position by frictionally resisting rotation of the bolt after adjustment.

It will, of course, be understood that various changes may be made in the form arrangement and details and proportions of the parts without departing from the scope of my invention which, generally stated, consists in the matter set forth in the appended claims.

What is claimed is:

1. An adjustable extension connector mounting and electrically connecting an electrical unit to an outlet box, said connector comprising an elongated bolt including an enlarged head element and a threaded shank portion, said shank portion extending through an attachment ear of an electrical unit for connecting the same to an outlet box,

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a collar element fixed to said shank in spaced relation to said head element and disposed on the opposite side of the ear from said head element, and a spring member interposed between one of said elements and the attachment ear of said electrical unit to maintain positive electrical contact between the ear and the shank of the bolt and thus produce an extensible grounding electrical connection between the ear and an outlet box when said shank is threadably connected to said outlet box.

2. The structure set forth in claim 1 wherein the spring member is interposed between the ear of the electrical unit and the collar of the bolt.

3. The structure set forth in claim 1 wherein the spring member constitutes a washer made from resilient metal and the outer peripheral portion thereof

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is fluted to maintain the desired electrical contact between the ear and the washer.

4. The structure set forth in claim 2 wherein the spring member constitutes a washer made from resilient metal and the outer peripheral portion thereof is fluted to maintain the desired electrical contact between the ear and the washer.

5. The structure of claim 1 in which at least one of the elements includes at least one axial extending means operable to conductively engage the attachment ear as the bolt is rotated.

6. The structure of claim 2 wherein at least one of the elements includes at least one axial extending means operable to conductively engage the attachment ear as the bolt is rotated.

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