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M. M. SILVERMAN

2,508,655

CLAMPING CONNECTOR

Filed July 23, 1945

FIG. 1.

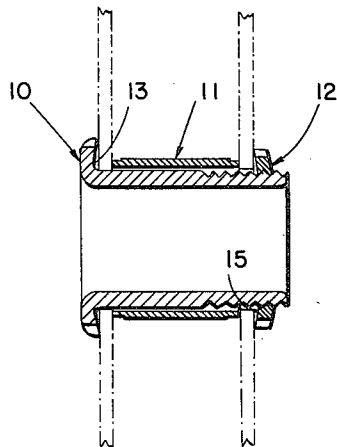


FIG. 2.

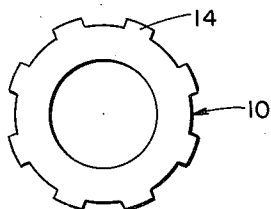


FIG. 3.

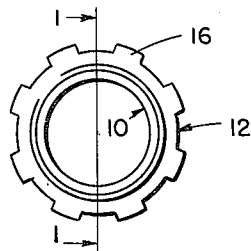


FIG. 4.

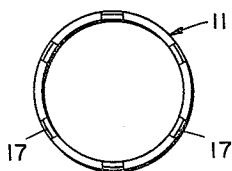


FIG. 8.

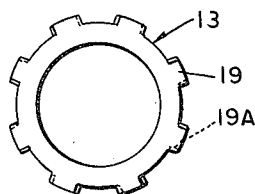


FIG. 9.

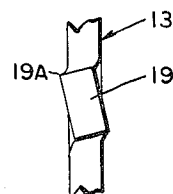


FIG. 5.

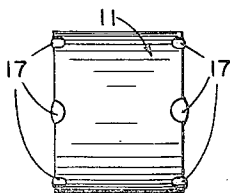


FIG. 6.

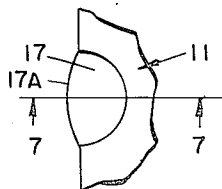


FIG. 7.



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2,508,655

CLAMPING CONNECTOR

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4 Claims. (Cl. 285-5)

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This invention relates to improvements in clamping connectors for electric cabinet boxes such as switch boxes, "gutter" boxes and the like.

The objects of the invention are to provide a connector for metal cabinet boxes which is simple in construction; which is easily applied thus making possible a saving in time; which rigidly holds together two or more boxes or affords rigid support for one or more boxes on another; which provides a conduit through which the electric wires may be quickly and easily passed without injury to the insulation; which provides good electrical connection between the members clamped together thereby affording a good ground circuit.

These and other objects are attained by my invention, which will be clearly understood from the following description and the accompanying drawing in which:

Fig. 1 is a cross-sectional view showing my clamping connector as used to clamp together the adjoining walls of switch boxes and the like;

Fig. 2 is an end elevational view of the sleeve member of my device;

Fig. 3 is an end elevation of the assembled clamping connector;

Fig. 4 is an end elevational view of the spacer member of my device;

Fig. 5 is a side elevation of the spacer member;

Fig. 6 is an enlarged fragmentary view of a portion of the spacer member;

Fig. 7 is a cross-sectional view taken on the line 7-7 of Fig. 6;

Fig. 8 is an end view of a modification of the sleeve member;

Fig. 9 is an enlarged fragmentary edge view of a tooth of Fig. 8.

In connection with electric wiring practice, it is often desirable to use two or more metal cabinet boxes positioned close together, and to connect these two boxes with each other mechanically by means which will form a conduit through which electrical conductors or wires may pass from one box to the other. It has been common practice to use externally threaded pipe nipples and nuts, or internally threaded bushings to connect two boxes together in this manner. These require not only more expensive parts, but also require much more time to properly install, and the arrangement is mechanically not very rigid, and as ordinarily applied, the electrical connection between the parts is not good enough to provide a satisfactory grounding circuit.

My connector may be made of strong parts, and because of the clamping action, affords means for

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rigidly connecting and supporting one box on another, for example a switch box may be supported on a "gutter" box, and may be used without further support or attachment.

Referring to the drawings, my clamping connector consists of a sleeve 10, a spacer 11 and a lock nut 12. As shown in Fig. 1 two partition walls of switch boxes or the like, (represented by broken lines) are engaged, at "knock-out" disc holes, between the flange 13 of the sleeve 10 and the lock nut 12 on the threads 15 at the end of the sleeve opposite the flange 13, with the spacer member 11 intermediate the partition walls being joined. The electrical wires (not shown) are passed through the cylindrical opening of the sleeve, the sharp edges having been removed to avoid abrasion of the insulation on the wire.

The sleeve 10 consists of a cylindrical body having an outside flange 13 with ears 14 which may be grasped by the fingers or engaged by a suitable tool. The under side of the flange 13 is relieved or undercut so that the edges of the ears 14 make good physical and electrical contact with the metal wall, the ears being purposely sharp edged so that they will scarify and cut through the paint or lacquer finish on the partition walls. The sleeve 10 is provided at the end opposite the flange with external threads 15, upon which the lock nut 12 may be threadedly engaged, the lock nut 12 also being dish or relieved so that its ears 16 will scarify and cut into the surface of the partition walls being clamped by the device.

The spacer member 11 is a cylindrical body loosely fitting over the outside of the sleeve 10, adapted to space apart the partition walls of the switch boxes, etc. In order to make good mechanical and electrical contact, the sleeve 10 is provided on both ends with staked scarifying ears 17 with extended abutting portion 17A (see Figs. 4 to 7) which are sharp edged and adapted to scarify and cut into the finish and metal of the partition walls, to make good electrical contact, and also to prevent loosening of the clamping device by vibration, etc. A plurality of staked ears are formed on each end of the spacer.

As shown in Figs. 8 and 9, the ears 19 of the flange 13 of the sleeve 10 may be slightly twisted or canted to form a leading edge 19A which is better adapted to scarify the paint or lacquer finish on the metal walls of the switch boxes, etc., and to form a vibration-proof contact with the surface. The ears of the locking nut may also be slightly canted to give better scarifying action on the metal surface to be clamped.

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By means of the ears on the flange of the bushing, the assembly of the two boxes may be easily made by one workman, because he is able to insert and manipulate the bushing by the "feel" without looking at it, while at the same time putting the spacer in place between the boxes and the lock nut within the other box, and may hold the bushing by the ears while tightening the nut on the assembly with his other hand, or by means of a suitable tool applied to the nut. In other types of connectors between boxes, it frequently requires two workmen, because one man cannot see to manipulate the necessary tools simultaneously in the two boxes. When the ears of the flange are canted to better scarify the metal surface, the application of a tool to the sleeve may not be required.

My device is simple and inexpensive to manufacture and to install. The parts may, of course, be made of any suitable length and diameter to meet the requirements for standard electrical wiring fixtures. The parts are preferably made of heavy stock so that rigid mechanical connections between boxes may be made.

I claim:

1. A clamping connector for electrical switch boxes and the like consisting of a sleeve having an outwardly extending flange at one end and external threads at the other end, the said flange having spaced peripheral scarifying ears adapted for hand gripping and said flange having its surface adjacent the outer surface of the sleeve relieved to permit direct contact of said ears, with a metal wall to be clamped thereagainst; a cylindrical spacer adapted to fit over said sleeve, the ends of said spacer having staked scarifying ears; and a locking nut adapted to screw onto the threads of said sleeve, said locking nut having scarifying ears and having a relieved surface between its threaded hole and said ears on the side of said nut adjacent said spacer.

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2. A clamping connector for electrical switch boxes and the like consisting of a sleeve having an outwardly extending flange at one end and external threads at the other end, the said flange having spaced peripheral ears, said ears being canted and adapted to scarify a metal wall to be clamped thereagainst; a cylindrical spacer adapted to fit over said sleeve, the ends of said spacer having staked scarifying ears; and a locking nut adapted to screw onto the threads of said sleeve, said locking nut having scarifying ears.

3. A clamping connector for electrical switch boxes and the like, consisting of a sleeve having an outwardly extending flange at one end and external threads at the other end, the said flange being provided with canted peripheral ears; a cylindrical spacer adapted to fit over said sleeve, the ends of said sleeve being adapted to scarify a metal surface clamped in contact therewith; and a locking nut on the threaded end of said sleeve, said nut having canted peripheral ears.

4. A clamping connector for electrical switch boxes and the like consisting of a sleeve having an outwardly extending flange at one end and external threads at the other; a cylindrical spacer adapted to fit over said sleeve; and a locking nut on the threaded end of said sleeve.

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