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T. B. TIEFENBACHER ET AL

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LOCKING DEVICE

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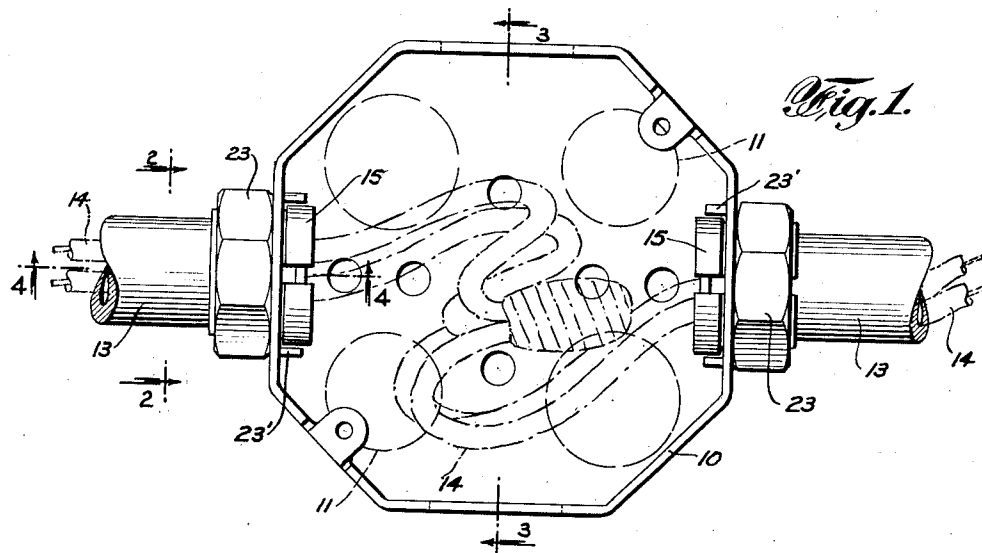


Fig. 2.

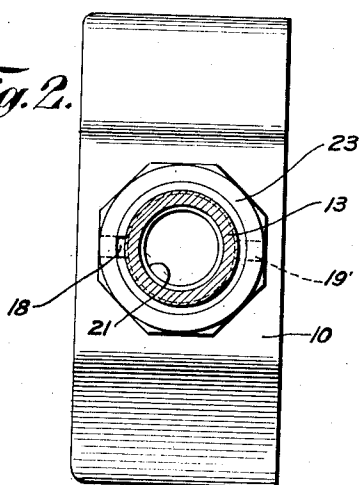
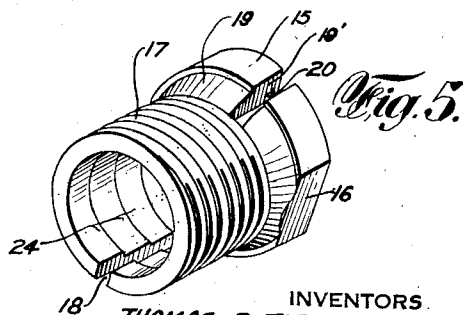
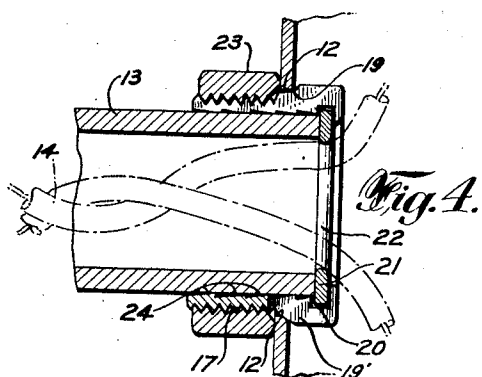
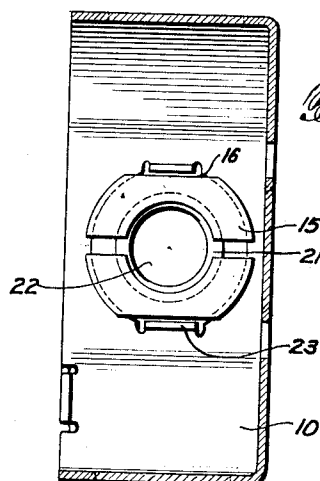


Fig. 3.



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LOCKING DEVICE

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2 Claims. (Cl. 285—6.5)

This invention has for its principal object the production of a simple and effective locking device or fitting for connecting the unthreaded end of a pipe within an opening of a member thus eliminating the threading of the wall of the opening as well as the end of the pipe.

A further object of the invention is the production of a locking device of the above character which may be set up into operative position or knocked down into inoperative position with ease and facility.

Other and further objects and advantages of the invention will be obvious as the description thereof proceeds, the invention consisting in the novel parts and combinations thereof hereinafter more particularly described and then specified in the claims.

In the accompanying drawing illustrating a practical embodiment of the invention:

Fig. 1 is a front elevation of an outlet or junction box to which the invention has been applied for the purposes of illustrating one of the uses of the invention, the cover plate of the outlet box having been removed.

Fig. 2 is a vertical cross-section on the line 2—2 of Figure 1.

Fig. 3 is a vertical cross-section on the line 3—3 of Figure 1.

Fig. 4 is a horizontal section on the line 4—4 of Figure 1.

Fig. 5 is a perspective view of the device of the invention.

Referring in detail to the several figures of the drawing:

An outlet box is indicated by the reference numeral 10. As customarily, it is supplied with a plurality of depressions 11 in the wall, base or cover thereof which can be knocked out to form openings 12 or what is commonly known as a "knock-out" of a proper size to permit connection with a pipe or conduit 13 through which electrical wires or conductors 14 extend, as illustrated, and which are interconnected within the outlet box as customarily.

The locking device or fitting of the invention comprises a head 15 preferably having flattened sides 16, said head being preferably provided with a screw-threaded shank 17 integral with said head, said shank and head being slotted longitudinally therethrough as at 18. One or more of the knock-out openings 12 of the outlet box is adapted to receive said shank 17, that portion of the fitting connecting the head 15 and shank 17 being beveled or inclined as at 19 whereby a close fit will be obtained between the fitting and

the knock-out opening when the shank of the device is extended through said opening as indicated in Figs. 1 and 4. The head 15 is also provided with a slot 19' therein and disposed diametrically opposite the slot 18.

The head 15 is provided with an interior groove 20 of sufficient size to receive a floating or movable washer 21 having a central opening 22 therein, the peripheral surface of said opening being rounded and smooth to prevent cutting or wearing of the conductors 14 when they are extended through the conduits 13 to and within the outlet box. Said floating washer 21 is preferably made of an insulating material such as mica to prevent short-circuiting should the usual insulating material on the conductors become worn.

The shank 17 receives the pipe 13 which extends therethrough into engagement with the floating washer 21 which provides a stop therefor, said washer being capable of a slight movement in any direction because of the size of the interior groove 20 to permit it to move when required and to automatically adjust its position under varying conditions. The opening 22 in the washer is of somewhat smaller diameter than the inside diameter of the pipe 13. This is to prevent cutting or wearing of insulation on the conductor 14 by the end of the pipe 13 should said end be sharp or jagged brought about in the operation of cutting the pipe to the proper length.

The pipe 13, the end of which as has been stated, is unthreaded, is firmly clamped in proper position within the fitting by means of a nut 23 which is screwed "home" tightly and firmly on the threaded shank 17. During the screwing operation the head 15 may be held against rotation by gripping the flattened sides 16 with a wrench or other means. If desired, however, to prevent rotation of the head 15, one or more lugs 23' may be provided on the inner wall of the junction box for engagement with said flattened sides 16.

When the nut 23 is screwed on the shank 17 and tightened thereon the side walls of the slot 18 are forced towards each other to clamp the shank 17 firmly and tightly against the pipe 13, the slot 19' acting to lend flexibility to the structure and thus assist in this clamping action. At the same time the shank 17 automatically centers itself within the opening 12 as its beveled portion 19 becomes jammed against and tightened within the peripheral wall of said opening as the tightening operation proceeds by the action of said nut. Furthermore the clamping action is enhanced by the provision of a plurality of annular

grooves 24 formed in the interior peripheral surface of the shank 17 as best shown in Fig. 5. In the formation of these grooves the metal is slightly raised or thrown out to form biting elements which bite into the metal of the pipe 5 and thus assist in the clamping operation.

From the above description it will be apparent that I have provided a simple device which permits connection between the unthreaded end of a pipe and a junction box which device is removable and which may be easily inserted into proper position in one of the knock-out openings of the junction box. While I have described the invention in conjunction with an outlet or junction box it will be understood that it is not to be limited 15 in its application to such boxes but it may be used for connecting the end of an unthreaded pipe to any other device or element which has an opening therein.

The invention claimed is:

1. A coupling comprising an enlarged annular head having a beveled external shoulder at one side thereof and a longitudinal slot extending through the head and shoulder, a hollow externally threaded shank integral with the head and adapted for receiving and clamping a pipe, said head and shank being provided with a longitudinal slot extending continuously from end to end of said head and shank and disposed at the side of the coupling diametrically opposite the aforesaid slot in the head, and a nut engaging 30

the shank for compressing the shank and head into engagement with the pipe.

2. A coupling of the character described comprising an enlarged annular head having a beveled external shoulder at one side thereof, an internal annular groove adjacent to the opposite side thereof and a longitudinal slot extending through the head and shoulder, a hollow externally threaded shank integral with the head and adapted for receiving and clamping a pipe, said head and shank being provided with a longitudinal slot extending continuously from end to end of said head and shank and disposed at the side of the coupling diametrically opposite the aforesaid slot in the head, said slots cooperating to give resiliency to the head and shank for radial compression about the pipe, a ring forming a stop to limit the longitudinal movement of the pipe through the shank of the head and to center conducting wires extending through the pipe and prevent the same from entering the slots, said ring being loosely mounted to float in the groove of the head to adjust itself conformably against the end of the pipe and to permit free radial compression of the head and shank, and a nut engaging said shank for compressing the same into clamping engagement with the pipe.

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