E. G. APPLETON.

CONNECTOR.

APPLICATION FILED DEC. 10, 1914.

1,192,150.

Patented July 25, 1916.

FIG. 1.

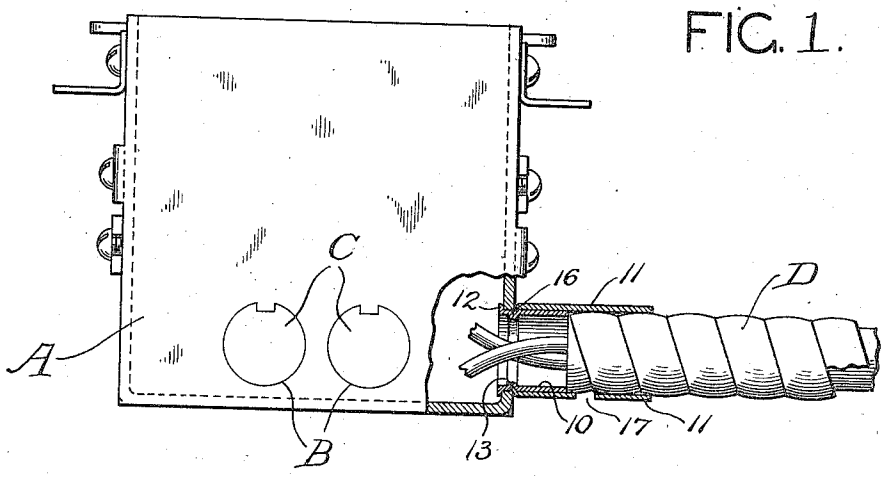



FIG. 2.

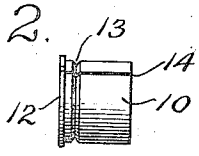



FIG. 3.

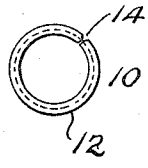



FIG. 4.

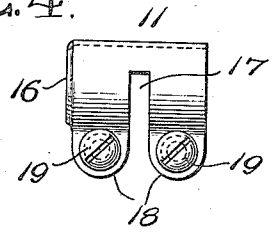



FIG. 5.

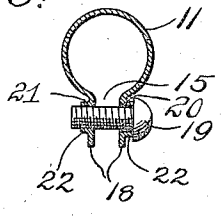
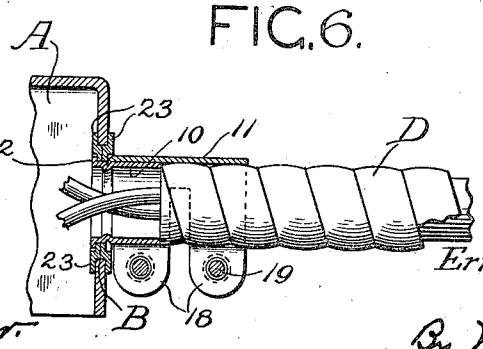



FIG. 6.




Witnesses:

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Inventor:

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By Miller, Chindahl & Attys.

# UNITED STATES PATENT OFFICE.

ERNEST G. APPLETON, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO FUSE MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## CONNECTOR.

1,192,150. Specification of Letters Patent. Patented July 25, 1916.

Application filed December 10, 1914. Serial No. 876,393.

*To all whom it may concern:*

Be it known that I, ERNEST G. APPLETON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have made certain new and useful Improvements in Connectors, of which the following is a specification.

This invention relates to an improved connector for securing various electric conduits, including armored cable, flexible metallic conduit, and rigid conduit, to outlet boxes, steel cabinets, or the like.

The object of the invention is to provide a connector which is simple in construction and cheap to manufacture, which may be quickly and easily applied to the cable and the box, and which provides a strong mechanical connection between the cable and the box and also a superior electrical connection.

In the accompanying drawings, Figure 1 is a side elevational view partially in section showing a cable and a junction box secured together by a connector embodying the features of my invention. Figs. 2 and 3 are respectively a side and an end elevation of a thimble forming one element of the connector. Figs. 4 and 5 are respectively a side elevation and a transverse sectional view illustrating the clamp member of the connector. Fig. 6 is a sectional view illustrating a construction adapting the connector for association with openings in the box of larger diameter than the connector.

The preferred embodiment of the invention will be herein described in detail, without any intention, however, of limiting the invention to the precise details disclosed, except as specified in the appended claim.

In the drawings, A indicates a junction box having the usual knock-out openings B which are originally closed by plugs C.

D indicates a flexible conduit.

The connector comprises a thimble 10 adapted to pass through a knock-out opening in the box, and a dual clamp 11, one end of which grips the said thimble and the other end of which grips the conduit. The thimble 10 is provided at its inner end with a stop shoulder in the form of an annular flange 12 which lies along the inner face of the box wall around the opening B. The thimble is also provided with an external annular groove 13 which lies along the outer face of the box wall when the thimble is in place. The thimble may be formed in different ways, one way being to roll a piece of sheet metal into cylindrical form with the edges abutting as seen at 14 in Figs. 2 and 3. The clamp 11, if desired, may also be formed from a single piece of sheet metal rolled into cylindrical form, thereby providing a longitudinal slot 15 running throughout its length. The inner end of the clamp is preferably turned in slightly, as indicated at 16, to provide a flange to engage in the groove 13 of the thimble. The clamp is partially divided by a transverse slot 17 into two independent clamping sections. Each of these sections is provided with a pair of approximately parallel ears 18 at opposite sides of the slot 15, and each pair of ears is arranged to be drawn together by means of a screw 19 passing loosely through an opening 20 in one of the ears and threaded in an opening 21 in the other ear. Preferably, these openings 20 and 21 are punched somewhat smaller than required and are then flanged out as at 22 to provide the equivalent of a thicker metal.

In the operation of securing a cable or conduit in place, the thimble 10 is passed through the opening B from the inside of the box, the clamp 11 is passed over the thimble until the flange 16 seats in the groove 13, and the inner screw 19 is tightened up to contract the inner section of the clamp upon the thimble. The cable D is now inserted into the outer end of the clamp, the end of the thimble 10 forming a stop shoulder against which the end of the cable abuts. The outer screw 19 is now tightened up to grip the cable. The shoulder or flange 12 on the thimble prevents the thimble from being pulled out of its opening. When the knock-out opening B in the box is of larger diameter than the connector, a pair of dished washers 23, shown in Fig. 6, is provided to fit around the thimble 10 and within the knockout opening B, said washers in effect constituting a continuation of the box wall. The operation of associating these washers with the other parts in securing a cable will be apparent and need not be described.

It will be seen that my improved connector is simple in construction and cheap to manufacture, and that it may be quickly applied and forms a very strong connection for the cable or conduit.

I claim as my invention:

A connector of the character described, comprising a cylindrical thimble adapted to pass through a box-opening, the thimble having a flange at its inner end to engage the wall at the edge of said opening and having an external annular groove positioned to lie adjacent to the outer face of the box wall, and a sheet-metal cylindrical clamp transversely slotted to provide two partially separated and independently acting clamp-sections, and longitudinally slotted to provide two pairs of parallel and adjacent ears on the respective clamp-sections, said ears being perforated, and means engaging in the perforation for independently contracting said clamp-sections to grip said thimble and a cable respectively, one of said clamp-sections having an inturned edge providing an annular flange at its end adapted to engage in the annular groove in said thimble.

In testimony whereof, I hereunto set my hand in the presence of two witnesses.

ERNEST G. APPLETON.

In the presence of—

WM. W. MERRILL,

GEO. C. REID.