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**2,265,179**

ARMORED CABLE CONNECTOR

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Fig. 1.

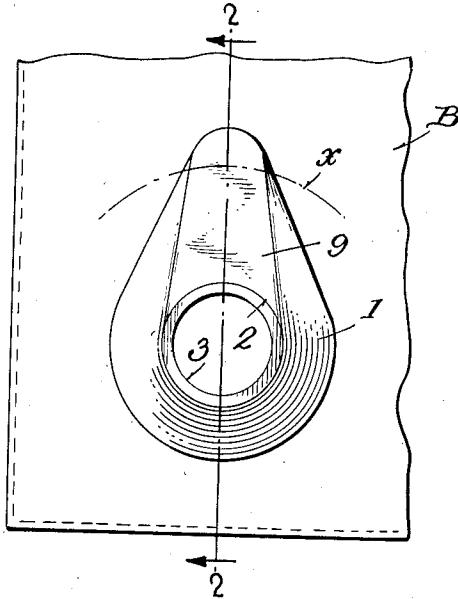


Fig. 2.

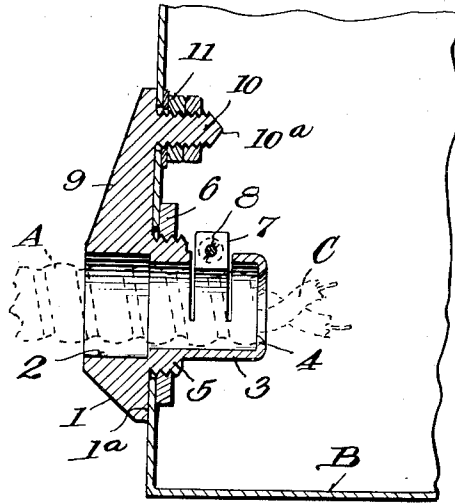


FIG. 3.

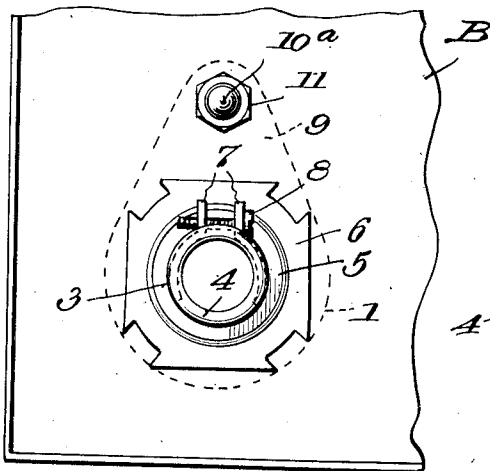
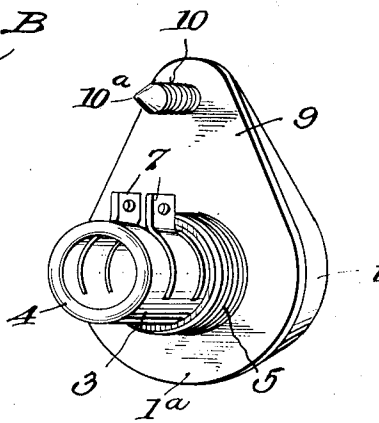


Fig. 4.



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## UNITED STATES PATENT OFFICE

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## ARMORED CABLE CONNECTOR

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11 Claims. (Cl. 285—6.5)

This invention relates to connectors for securing armored cables to wiring boxes and more particularly for securing an armored service entrance cable to a meter or switch box.

It has been found that, with the use of connectors of the type now commonly employed, in which the cable clamping means is on the outside of the box, it is possible, by loosening this clamping means, to slip the armor back far enough to expose the conductors and to tap such conductors and illegally take current therefrom.

One object of the present invention is to provide a tamper-proof connector, or, in other words to so construct and arrange a connector that it will be impossible to mechanically disconnect the cable from the box or to slip the armor back so as to expose the conductors. To this end, I propose to place the cable clamp on the inside of the box, where it is inaccessible.

The underwriter's rules require that a cable connector of this character be grounded or bonded to the box by means independent of the usual locking nut which holds the connector in place. Another object of the present invention is to devise a connector having an independent bonding means formed integral therewith and offset laterally from the cable.

With the above and other objects in view, and to improve generally upon the details of such devices, the invention consists in the construction and arrangement of parts hereinafter described and claimed and illustrated in the accompanying drawing, forming part of this specification, and in which:

Fig. 1 is a front elevation of my improved connector as it appears when applied to a box;

Fig. 2 is a transverse section on the line 2—2 thereof, looking in the direction of the arrows, the armored cable itself being shown in dotted lines;

Fig. 3 is a rear elevation of the connector shown in Figs. 1 and 2, looking from the inside of the box; and

Fig. 4 is a perspective view of the connector itself.

Referring to the drawing in detail, my improved connector comprises a body member 1 having at one side a semi-circular outline as shown in Fig. 1, and provided with a concentric socket or opening 2 to receive the armored cable, indicated at A in Fig. 2.

Extending rearwardly from the body member 1 and preferably formed integral therewith is a barrel or elongated socket member 3, terminating at its end in an inturned annular flange 4, 55

preferably having rounded outer edges, as shown in Fig. 2.

The body 1 is provided with a laterally extending flange forming a rigid shoulder or flat face 1<sup>a</sup>, adapted to rest against the outside of the box around the hole or opening cut therein to receive the socket member 3, and adjacent the flat face 1<sup>a</sup> I provide an enlargement 5 integral with the walls of the socket member 3 and threaded to receive the usual locking nut 6 for securing the connector in place. In installing the connector, the wall of the box B is gripped between the flat face 1<sup>a</sup> and the nut 6, as clearly shown in Fig. 2.

Formed integral with the walls of the socket member 3 at a point between the end 4 and the enlarged threaded portion 5, is a pinch-type clamp comprising resilient tongues conforming with the shape of the socket member 3 and provided at their free ends with upstanding ears 7 adapted to receive a binding screw 8, in a well known manner.

In order to provide an independent grounding or bonding means, I form my improved connector with a lateral extension 9, and place adjacent the end of this extension and preferably integral therewith, an inwardly extending threaded stud 10, shown as provided with a pointed end 10<sup>a</sup>.

In installing my improved connector, a hole or opening is first cut in the box at the desired point, this opening being large enough to receive the enlarged portion 5 of the connector socket. The socket is then inserted through the opening and the connector rotated around the socket as a center, thus causing the pointed end 10<sup>a</sup> of the stud 10 to scratch an arcuate line or mark x, on the outer wall of the box, as indicated in broken lines in Fig. 1. The installer then removes the connector and drills a hole at any desired point on the line x of a suitable size to receive the stud 10. Having drilled this hole, he may then place the connector in position, as shown in Fig. 2, and secure it in such position by means of the nut 6 engaging the threaded portion 5 of the socket, and also by means of one or more nuts 11, engaging the threaded stud 10, and serving to tightly bond this stud to the box. Employing this method of locating the hole for the stud 10, I am enabled to avoid the necessity of a template.

It will, of course, be understood that the opening in the nut is of such size as to enable it to be slipped over the ears 7 of the clamp. It is for

this reason that the threaded portion 5 is enlarged, as shown.

The armored cable A is then inserted into the socket of the connector until its end engages the inturned flange or shoulder 4, this acting as a stop to properly position the cable. The conductors C of the cable project into the box through the center of the annular flange 4, the rounded edges of this flange serving to prevent the conductors from being cut or injured.

From the foregoing, it will thus be seen that I have provided an improved connector in which both the locking nut and the cable clamp are located inside of the box so as to be inaccessible to unauthorized persons, and that when the cable has once been inserted in the connector and the binding screw 8 tightened up, it will be impossible to disconnect or withdraw the cable or armor.

Preferably the entire connector, as shown in Fig. 4, is formed of an integral casting, the only additional parts required being the nuts and screw. The invention, however, is not necessarily limited to all parts being formed integral, as the stud 10 may be formed separately, if desired.

What I claim is:

1. A tamper-proof fitting for connecting armored cables to wiring boxes comprising a member having an elongated socket to receive the cable and also having a rigid shoulder surrounding said socket, a pinch-type clamp formed integral with the walls of said socket, screw threads on said member between said shoulder and clamp and a nut engaging said threads to grip the wall of the box between said shoulder and said nut.

2. A fitting for connecting armored cables to wiring boxes comprising a member having an elongated socket to receive the cable and also having a shoulder surrounding said socket, a pinch-type clamp formed integral with the walls of said socket, the walls of said socket between said shoulder and clamp having an enlarged portion, and screw threads formed on said enlarged portion and adapted to receive a nut to grip the wall of the box between itself and said shoulder, said nut being of a size to pass freely over said clamp.

3. A fitting for connecting armored cables to wiring boxes comprising a member having an elongated socket to receive the cable, means adjacent one end of said socket for securing said member to the wall of the box, an inturned flange at the other end of said socket to engage the end of the armor of the cable, and a pinch-type clamp formed integral with the walls of said socket at a point intermediate its ends.

4. A tamper-proof fitting for connecting armored cables to wiring boxes comprising a member having a flat face adapted to lie against the wall of a box and an elongated socket projecting from said face and constructed to receive the cable, means for securing said member in position on a box, and a pinch-type clamp formed integral with the walls of said socket at a point intermediate its ends.

5. A fitting for connecting armored cables to wiring boxes comprising a member having a cable receiving socket formed integral therewith, a nut surrounding said socket for securing said member to a box, said member having a lateral extension, and screw means adjacent the end of said extension and in addition to said nut for bonding said member to the box.

6. The combination with a wiring box having an opening, of a tamper-proof connector comprising a member having a laterally extending flange forming a rigid shoulder engaging the outside of the box and also having a socket adapted to receive an armored cable and extending through said opening into the box, and means co-operating with said shoulder for securing said member to the box and means for clamping the cable in said socket, both said means being located inside of the box.

7. The combination with a wiring box having an opening, of a tamper-proof connector comprising a member having a laterally extending flange forming a rigid shoulder engaging the outside of the box and also having a socket adapted to receive an armored cable and extending through said opening into the box, means located inside of the box for clamping the cable in said socket, and a lock nut encircling said socket at a point between said shoulder and clamping means and also located inside of the box co-operating with said shoulder for securing said member to the box.

8. The combination with a wiring box, of a tamper-proof connector comprising a member having a laterally extending flange forming a rigid shoulder engaging the outside of the box and also having a socket adapted to receive an armored cable and extending inside of the box, a pinch-type clamp carried by said socket inside of the box for holding the cable in said socket, and a locking nut encircling said socket between said shoulder and clamp and adapted to engage the inner wall of the box, said nut being of such size as to slip freely over said clamp.

9. The combination with a wiring box having two openings, spaced apart, of a connector comprising a member having a flat face engaging the outside of said box and overlying both said openings, said member having a cable receiving socket extending through one of said openings into the box, means adjacent said opening for securing said member in position, means inside of the box for clamping a cable in said socket, and screw means, in addition to said securing means, passing through the other of said openings to bond the connector to the box.

10. The combination with a wiring box having an opening, of a tamper-proof connector comprising a member having a socket adapted to receive an armored cable and also having a radially extending flange forming a rigid shoulder surrounding said socket, cable clamping means carried by said socket and insertable therewith through said opening into the box, and means located inside the box between said clamping means and shoulder and co-operating with said shoulder for securing said member to the box.

11. The combination with a wiring box having an opening, of a tamper-proof connector comprising a member having a socket adapted to receive an armored cable and also having a rigid shoulder surrounding said socket, cable clamping means carried by said socket and insertable therewith through said opening into the box until said shoulder engages the outside of the box, and a lock nut, of such size as to slip freely over said clamping means, encircling said socket within the box and engaging the inside of the box, so as to grip the wall of the box between itself and said shoulder and thus secure the member in position.

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