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2,490,253

ARMORED CABLE CONNECTOR

Filed June 18, 1946

2 Sheets-Sheet 1

Fig. 1.

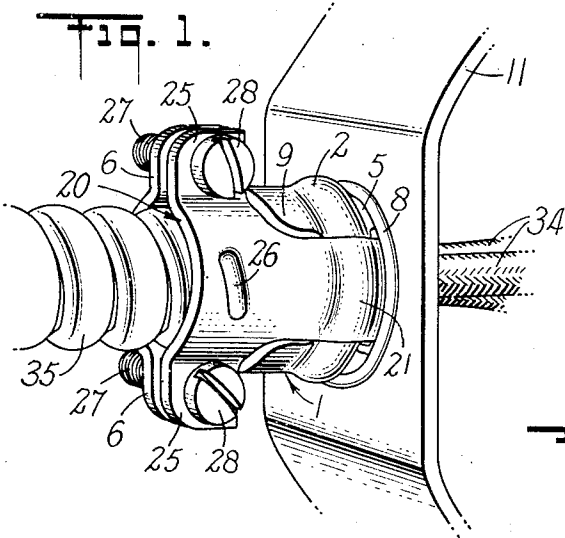


Fig. 2.

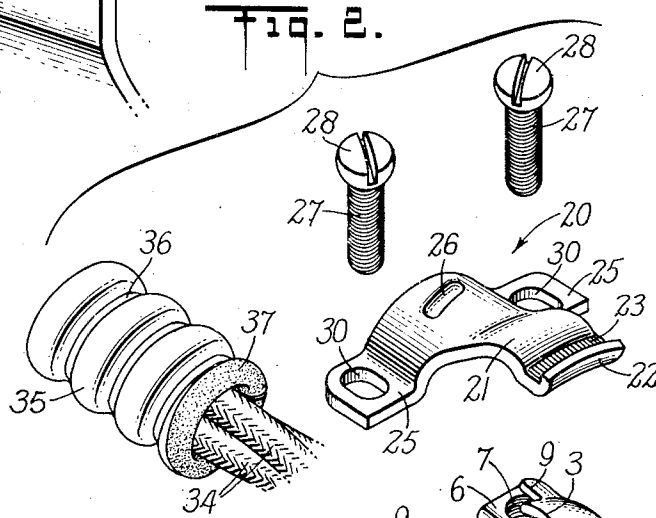
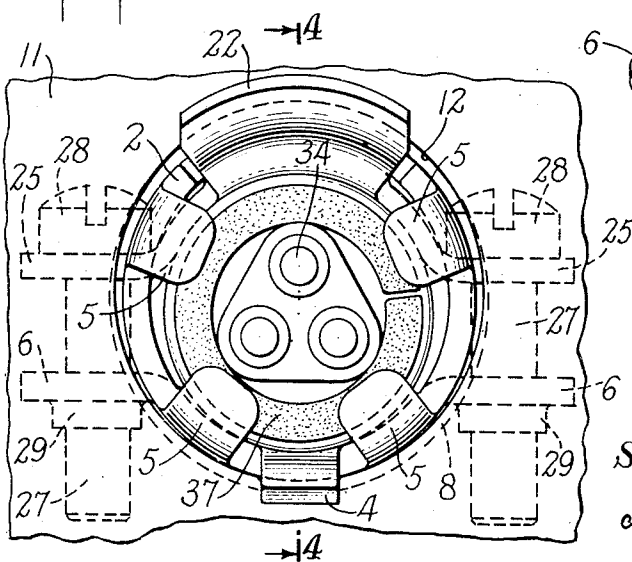


Fig. 3.



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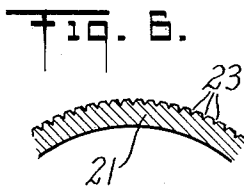
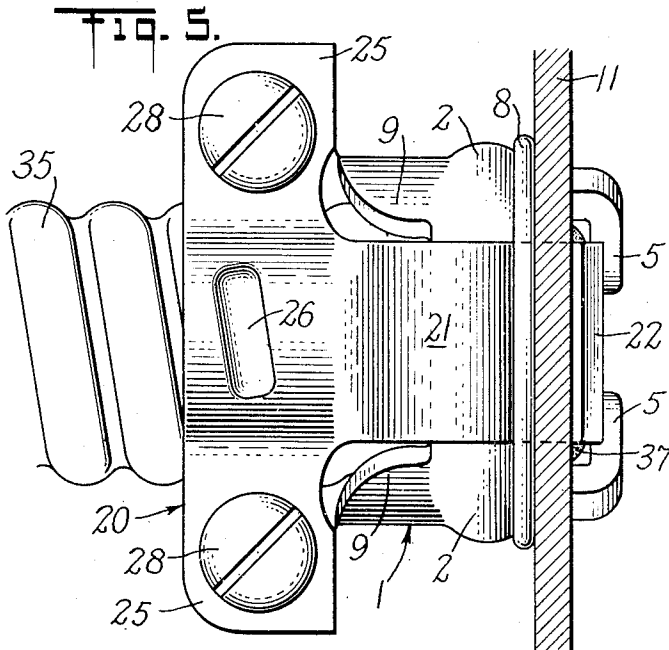
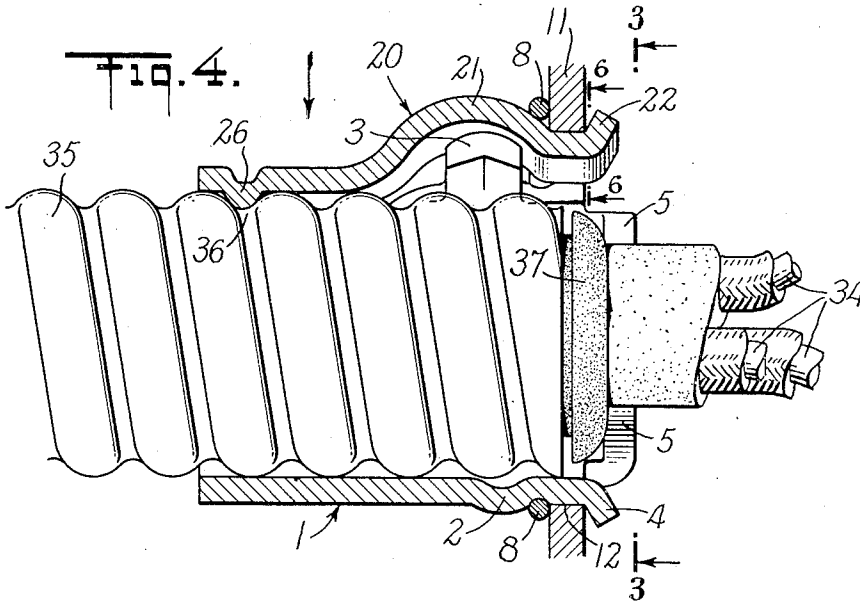
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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,490,253

## ARMORED CABLE CONNECTOR

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6 Claims. (Cl. 285—6.5)

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This invention relates to connectors for electric cables.

One of the objects of the invention is to provide an improvement whereby insulated electric wires or strands as, for example, in the form of armored cable may be quickly mounted in an outlet box by insertion through a hole therein and then maintained in a locked but nevertheless readily demountable position.

Another object is to provide a device of the character described which is not only capable of ease and speed of use but is also economical to manufacture.

Other objects and advantages will hereinafter appear from the description taken in conjunction with the appended drawings in which

Fig. 1 is a perspective view showing an armored cable mounted in an outlet box by means of a connector embodying the invention,

Fig. 2 is an exploded view of the parts shown in Fig. 1,

Fig. 3 is a view looking in the direction of the arrow indicated in Fig. 1,

Fig. 4 shows a section on line 4—4 of Fig. 3,

Fig. 5 is a view looking in the direction of the arrow indicated in Fig. 4, and

Fig. 6 is a sectional view on line 6—6 of Fig. 4.

The connector comprises two essential parts—a body portion indicated generally as 1 and a co-operating locking element or saddle portion indicated generally as 20. The body portion 1 (note Fig. 2, for example) is generally somewhat cylindrical in shape and has an annular shoulder portion 2 which may terminate in spaced-apart edges 3. It also has a cut-away portion or flared parts 9 to receive corresponding parts of the locking element or saddle portion 20. The body portion 1 also has laterally extending ears 6 provided with threaded holes 7, these ears and threaded holes being in registry, respectively, with corresponding ears 25 and slots 30 in the locking member or saddle element 20. The body portion 1 is provided with a bottom tang 4 for engagement with the edges 12 of a hole in an annular box 11; and side tangs 5 which act as stops for bushing 37 inserted in the annular space between the cables 34 and the armor 35.

Resilient means as, for example, split ring 8 is provided to resiliently secure together the body portion 1 and the locking member 20, the split ring 8 being mounted in the annular groove between the annular shoulder portion 2 and the tangs 4 and 5.

The locking element 20 includes a tongue portion 21 which is concavely formed to mate with

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the convexly shaped annular shoulder 2 and to ride and pivot thereon. A reversely curved lug or lip 22 extends from the tongue 21 to engage an edge 20 of the annular box 11. Engagement of the lug 22 of the locking element 20 and the bottom tang 4 of the body portion with edge portions 12 of a hole in outlet box 11 is clearly shown (note, for example, Figs. 3 and 4). The milled surface or part 23 lying between the concave tongue portion 21 and the lip 22 serves to enhance the locking action. Fig. 6 shows a detail of the milled part 23. The locking action is still further enhanced by a detent 26 in the locking element 20, this detent 26 engaging the armor of the cable in a groove or annular space 36 between adjacent convolutions of the armor.

The connector is readily assembled for use by mounting the locking element 20 on the body portion 1 which is done by inserting the lug 22 and tongue 21 under the resilient ring 8 and at a point or position on the body portion 1 opposite the tang 4 and bridging the space between edges 3 (note Fig. 3). Bolts 27 with scarfed heads 28 and nuts 29 are received in the slots 30 and threaded holes 7, respectively, and the device thus very simply assembled is ready for sale and use.

As well known to those skilled in the art, an armored cable, which is one of the cables which may readily be mounted by means of the present invention, is customarily provided with an insulating bushing 37 inserted between the cables and the armor. In using the device, the connector is inserted into a knock-out hole in an outlet or terminal box 11 with the bushing 37 engaging the stops or lugs 5, the tang 4 engaging an edge of a knock-out hole and the milled surface 23 of the locking element 20 engaging another and opposite edge of said hole. The tongue 20, it will be seen, acts as a lever or saddle freely fulcrumed and riding upon the annular shoulder portion 2 of the body member 1. The tongue 21 and lug 22 may be depressed to facilitate insertion of the connector through the knock-out hole with the edges 12 of the wall 11 of the knock-out box engaging the connector parts as clearly illustrated in Fig. 4, for example. The armored cable with the exposed strands 34 thereof and bushing 37 inserted between those strands 34 and the armor 35 is then inserted in the connector with the strands 34 extending into the interior of the knock-out box and the bushing 37 engaging the side tangs or lugs 5 which act as stops. The nuts 29 on the bolts 27 may then be tightened, thus locking the armored cable in the connector with the detent

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26 in releasably locked engagement with the grooves between the convolutions of the armor. At the same time the tongue 21 and lug 22 of the saddle or locking element 20 became jammed into releasable locking engagement with the adjacent edge 12 of the wall 11 of the knock-out box and the bottom tang 4 is also jammed into releasable locking engagement with the adjacent edge 12 of the same wall 11.

The whole operation is very easily and quickly performed, nevertheless the cable is very firmly mounted in locking engagement with the wall of the knock-out box. The locking engagement is, however, releasable; and the connector and cable may be demounted or disengaged by loosening the nuts 29, depressing the tongue 21 and lug 22 and withdrawing the connector and cable.

The preceding description is given in detail with the understanding that numerous variations may be made within the scope of the principles of the invention to be defined in the claims.

What is claimed is:

1. A cable connector of the character described adapted for releasable locking engagement with a cable and a wall of an outlet box comprising a body portion having an annular convex shoulder and a separate locking tongue element, having a concave portion pivoted on said annular convex shoulder, each of said body and saddle elements having at one end thereof edge gripping parts including a lug adapted to grip edges of a knock-out hole of an outlet box; said body portion and tongue element having complementary receiving and clamping portions at the other end thereof to receive and releasably clamp a cable therebetween; the tongue element being freely fulcrumed on the body portion at a position intermediate between the ends of the tongue portion and means to force the clamping portion of the tongue element into locking engagement with the cable and with corresponding complementary portions of the body portion and to thereby lock said cable within said connector, whereby the edge gripping portions of the tongue element and body portion are releasably locked into engagement with edges of said knock-out hole.

2. A cable connector of the character described adapted for releasable locking engagement with a cable and a wall of an outlet box comprising a body portion having an annular convex shoulder and a separate locking tongue element having a concave portion pivoted on said convex shoulder, each of said body and tongue elements having at one end thereof edge gripping parts including a lug adapted to grip edges of a knock-out hole of an outlet box; said body portion and tongue element having complementary receiving and clamping portions at the other end thereof to receive and releasably clamp a cable therebetween; the tongue element being freely fulcrumed on the body portion at a position intermediate between the ends of the tongue portion and means including a pair of lateral flanges on each of said body portion and tongue element to force the clamping portion of the tongue element into locked engagement with the cable and with corresponding complementary portions of the body portion and to thereby lock said cable within said connector, whereby the edge gripping portions of the tongue element and body portion are releasably locked into engagement with edges of said knock-out hole.

3. A cable connector of the character described adapted for releasable locking engagement with

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an armored cable and a wall of an outlet box comprising a body portion having an annular convex shoulder portion, and a separate locking tongue element having a concave curved portion mating with and normally freely pivoted on said convex shoulder portion, and an annular resilient ring member normally maintaining said pivotal relation, each of said body and tongue elements having at one end thereof edge gripping parts including a lug adapted to grip edges of a knock-out hole of an outlet box; said body portion and saddle element having complementary receiving and clamping portions at the other end thereof including a cut-away part of the body portion and a flared part on the saddle element to receive and releasably clamp a cable therebetween; the tongue element being freely fulcrumed on the body portion at a position intermediate between the ends of the saddle portion; and means including a pair of bolt carrying flanges on each of said body portion and saddle element to force the clamping portion of the saddle element into locked engagement with the cable and with corresponding complementary portions of the body portion and to thereby lock said cable within said connector, whereby the edge gripping portions of the tongue element and body portion are releasably locked into engagement with edges of said knockout hole.

4. A cable connector adapted for releasable engagement with a cable and a wall of an outlet box comprising a body portion and a locking tongue element shaped and adapted to rock longitudinally on said body portion, the body portion having a generally cylindrical portion to receive a cable and also having an annular convexly shaped shoulder, the tongue element being reversely curved to provide one portion mating with the annular shoulder on the body portion and thus adapted to pivot thereon, and another lip portion to engage an edge of the outlet box, said body portion having lateral wall portions spaced apart to receive said tongue and permit freedom of longitudinal movement thereof, each of said body and tongue portions having means including laterally extending flanges to permit locking and unlocking action of connector in relation to a cable and outlet box.

5. A cable connector adapted for releasable engagement with a cable and a wall of an outlet box comprising a body portion and a locking tongue element shaped and adapted to rock longitudinally on said body portion, the body portion having a generally cylindrical portion to receive a cable and also having an annular convexly shaped shoulder, the tongue element being reversely curved to provide one portion mating with the annular shoulder on the body portion and thus adapted to pivot thereon and another lip portion to engage an edge of the outlet box, said body portion having lateral wall portions spaced apart to receive said tongue and permit freedom of longitudinal movement thereof, said body portion having a plurality of lugs extending radially inwardly at one end thereof to act as stops and a lug extending radially outward at a position diametrically opposite the lip on the tongue, each of said body and tongue portions having means including laterally extending flanges to permit locking and unlocking action of connector in relation to a cable and outlet box with said lip on the tongue and outwardly extending lug on the body portion engaging side wall edges of the outlet box when the connector is secured to said box.

6. A cable connector adapted for releasable engagement with a cable and a wall of an outlet box

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comprising a body portion and a locking tongue element shaped and adapted to rock longitudinally on said body portion, the body portion having a generally cylindrical portion to receive a cable and also having an annular convexly shaped shoulder, the tongue element being reversely curved to provide one portion mating with the annular shoulder on the body portion and thus adapted to pivot thereon and another lip portion to engage an edge of the outlet box, said body portion having lateral wall portions spaced apart to receive said tongue and permit freedom of longitudinal movement thereof, said body portion having a plurality of lugs extending radially inwardly at one end thereof to act as stops and a lug extending radially outward at a position diametrically opposite the lip on the tongue each of said body and tongue portions having means including laterally extending flanges to permit locking and unlocking action of connector in re-

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lation to a cable and outlet box with said lip on the tongue and outwardly extending lug on the body portion engaging side wall edges of the outlet box when the connector is secured to said box said tongue and body portion each having a cable gripping detent therein.

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## REFERENCES CITED

The following references are of record in the file of this patent:

## UNITED STATES PATENTS

| Number    | Name     | Date           |
|-----------|----------|----------------|
| 899,906   | Ritter   | Sept. 29, 1908 |
| 1,885,228 | Buchanan | Nov. 1, 1932   |

## FOREIGN PATENTS

| Number  | Country       | Date          |
|---------|---------------|---------------|
| 273,295 | Great Britain | June 21, 1927 |