Sept. 23, 1930. M. M. CLAYTON 1,776,652

CABLE CLAMP

Filed June 14, 1929

FIG.1.

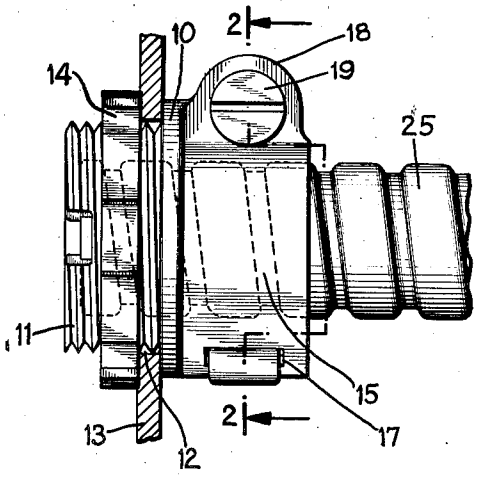


FIG.2.

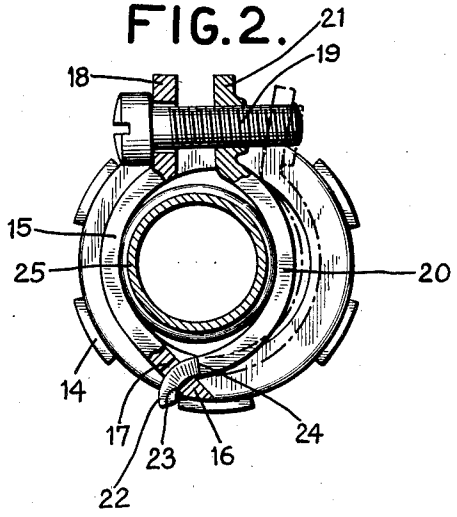


FIG.3.

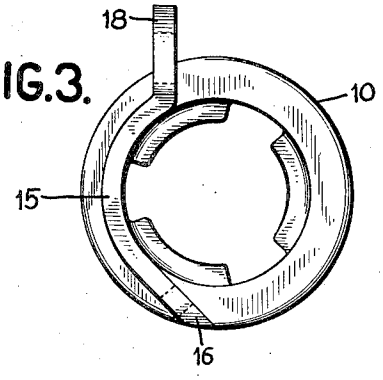


FIG.4.

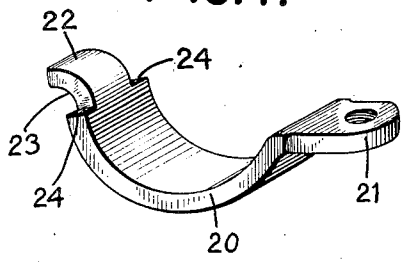


FIG.5.

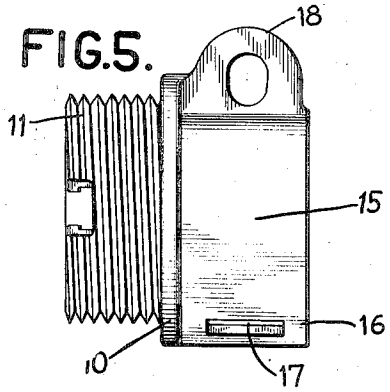
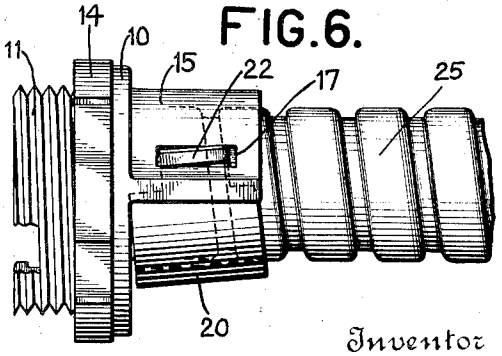


FIG.6.



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UNITED STATES PATENT OFFICE

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CABLE CLAMP

Application filed June 14, 1929. Serial No. 370,925.

This invention relates to cable clamps or connectors of the so-called squeeze type. Clamps of this type as heretofore constructed have comprised a barrel portion and have included also a cable gripping portion. In some instances the cable gripping portion has been made integrally with the barrel portion, it being partially separated from the barrel by cross-sectional cut or slot. In other instances, separate clamping elements have been used wherein multiple screws were employed to draw up the clamping element against the cable. Other clamps have used a single screw and in lieu of using second screws, have employed a pin and slot type of hinged connection intermediate the clamping part or element and cooperating cable supporting member. While certain of the latter devices have obviated the use of multiple screws in all of these forms of clamp, there has been bending of the metal at abrupt angles which is detracted from the proper gripping action of the clamp upon the cable. This has been true even with certain forms of hinged connections of the pin and slot type on account of the conformation of the hinge. Accordingly, with previous devices, it has not heretofore been possible to provide for free radial action for the clamping means and it also has not been possible to provide a clamping element of such sort that it is enabled to readily conform to a considerable range of cable sizes.

Accordingly, the present invention has for one of its objects the provision of a clamp of such character that the above undesirable action of previous clamps may be obviated.

More particularly, the present invention has for its object the provision of a construction which is particularly adapted to permit free radial and other shifting of the clamping element to the general end that efficient clamping action may be secured without the necessity of abruptly bending the metal of the clamping element.

Another object of the present invention resides in the provision of a clamping element and cooperating and supporting parts therefor so arranged and related that the clamping element is freely flexible for shifting movement in every direction.

A further object of the present invention resides in the provision of a clamping assembly or connector having one portion provided with a slot affording a hinge and having the other cooperating part or clamping element provided with a curved tongue which is so related to the material of the clamp itself and to the slot that the curved portion of the tongue may freely rock upon the edge of the slot as well as shift in and out relative to such slot. In this way a floating fulcrum point is afforded and free bodily float of the clamping element is secured while bending of metal parts is minimized if not entirely obviated.

Other objects of the present invention will be hereinafter set forth in the accompanying specification and claims and shown in the drawings, which by way of illustration show what I now consider to be a preferred embodiment of the invention.

In the drawings:

Figure 1 is a plan view of the complete assembly showing the improved connector used to connect a flexible conduit or cable to the wall of a junction box;

Fig. 2 is a cross-sectional view taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 but with the clamping element removed;

Fig. 4 is a perspective view of the clamping element;

Fig. 5 is a view of the body portion or barrel portion of the connector in plan view; and

Fig. 6 shows the tilting action of the clamp when the cable is attempted to be pulled from the connector.

The body portion of the connector comprises the annular portion 10 having extending therefrom a threaded nipple portion 11 adapted to extend through an opening 12 in the wall 13 of the junction box and to be secured in position by a nut 14. Inwardly beyond 10 the connector is provided with a segmental portion 15 which interiorly approximates a semi-circle in contour and which is also provided with a tangentially extending portion 16 (see Fig. 2). This tangential

portion 16 is provided with a slot 17 disposed as shown in Figs. 2 and 5. On the end opposite from the tangential extension 16, there is a lateral lug or ear 18 which is apertured to receive a screw 19. The clamping element generally designated 20, also has a portion which is substantially circular in contour and one end is provided with a lug-like extension 21 which is apertured and threaded to receive screw 19.

The end of the clamping element 20 opposite 21, is provided with an extension or tongue portion 22. Such tongue portion extends first outwardly in substantial alignment with the curve of the portion 20 and thereafter it is bent with a reverse curve as indicated at 23. Adjacent each side of the tongue portion 22 there are two shoulder portions 24. The tongue portion 22 fits loosely in the slot 17. Considerable clearance is provided at the sides of the tongue as shown in Fig. 1 and also considerable clearance is provided above and below the tongue as shown in Fig. 2.

Accordingly, when the cable or flexible conduit, generally designated 25, is placed in position and engaged by tightening up screw 18, the curve 23 provides a curved fulcrum point for the member 20 and prevents its bending irrespective of the position which it assumes. Part 20 can also freely bodily shift relative to part 15 and in this way it can readily accommodate itself to cables of various sizes and when tightening is effected there is a true squeezing action upon the cable and in addition bending of the clamp on abrupt bends at any point is obviated.

In Fig. 2 the solid lines show the normal position of the clamp. The dotted lines show the clamp open beyond the normal position and in this position the tongue is pulled further out of the slot. The dot and dash lines show the clamp in an extreme closed position in which the tongue is pushed further back into the slot.

It will be appreciated that the curved conformation of the tongue and the relation of the slot to it is such that the clamp can readily adapt itself to clamp down upon an inserted cable without necessitating excess or substantially any bending of the material of the clamping element. This effect is due to the combined radial and slipping action of the tongue of the clamp in the slot.

Fig. 6 illustrates the action of the clamping element when an attempt is made to pull the cable out of the connector. As shown in this figure, the clamping element will rock and thus close the cable receiving end to a still greater extent offering greater resistance to the withdrawal of the cable.

What I claim is:

1. A cable clamp comprising a body portion provided with a threaded nipple extension thereon and also provided with a segmental portion extending therefrom, which segmental portion is provided at one end with a screw receiving aperture and at other end with a tangential extension, said tangential extension being provided with a slot, and a clamping element having one end apertured and screw threaded to receive a fastening screw which extends through the aperture of the body portion, said clamping element upon its opposite end being provided with a curved tongue adapted to project through the slot in the body portion and to thereby provide for floating bodily rocking movement therein upon tightening of the clamping element upon an inserted cable.

2. A cable clamp adapted to clamp variable sized cable to a body portion, said clamp comprising a body portion which is provided with a segmental cable receiving portion having one end thereof provided with an aperture for a screw and having the other end thereof provided with a slot, a cooperating clamping element having a tongue portion which is curved where it passes through the slot in the body portion so as to be adapted to loosely fit and float as well as rock in the slot in the body member when clamping is effected whereby free bodily rocking of the clamp is provided for and whereby bending of the metal of the clamp or of the body portion is obviated, said clamping element also having a threaded aperture in its end remote from the tongue and a fastening screw adapted to extend through the aperture in the end of the body portion and to engage the threaded aperture in the end of the clamping element remote from the tongue for tightening up the clamping element upon an inserted cable.

3. A cable clamp adapted to clamp a cable in place and to provide for variable clamping action with minimized bending of metal parts, said clamp comprising a body portion slotted to receive a clamping element and curved to accommodate a cable, said body portion also being provided with an aperture to receive the shank of the fastening screw, a clamping element having a tongue fitting in the aforesaid slot and having its opposite end apertured and screw threaded to receive a screw which has its shank passed through the aperture in the body portion, said clamping element intermediate the tongue and screw threaded aperture being also curved to accommodate a cable, said tongue portion of the clamping element extending first outwardly in substantial alignment with the curved intermediate part of the clamping element and thereafter being bent with a reversed curve where it passes through the slot to thereby loosely fit the slot in the body portion and to provide for a free bodily rocking action during clamping and to minimize bending such metal parts during such clamping.

4. A cable clamp adapted to clamp variable sized cable to a body portion and to facilitate clamping action, said clamp comprising a body portion which is provided with a segmental cable receiving portion having one end 16 thereof extended tangentially with respect to the inside and outside of the segmental portion and also provided with a slot which extends perpendicularly across the tangential extension, said body portion also having an extended lug upon the end thereof which is opposite the tangential extension, said lug having an aperture therein for a screw, a cooperative clamping element adapted to be secured to the body portion, said clamping portion comprising an intermediate curved portion, an extended lug upon one end of the clamping element provided with a threaded aperture to receive a screw, said clamping element having its opposite end provided with an extended tongue portion which is curved with a reverse curve to that of the intermediate portion so that it may fit through the slot of the body portion and freely rock and shift with respect thereto, and a screw threaded in the aperture of the clamping means and extending through the aperture of the body portion for tightening up the clamping element with respect to the body portion.

In testimony whereof I hereto affix my signature.

MARTIN M. CLAYTON.