June 4, 1946. P. S. EVERLEY 2,401,418

CABLE CLAMP

Filed Nov. 6, 1944

Fig 1

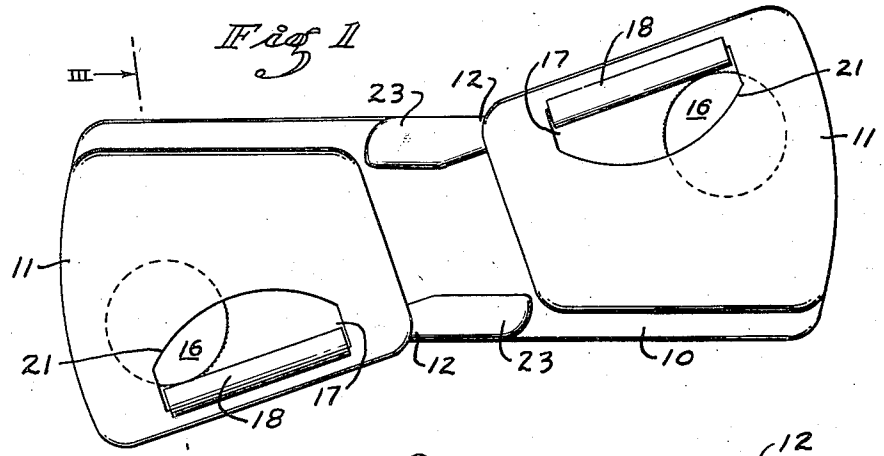


Fig 2

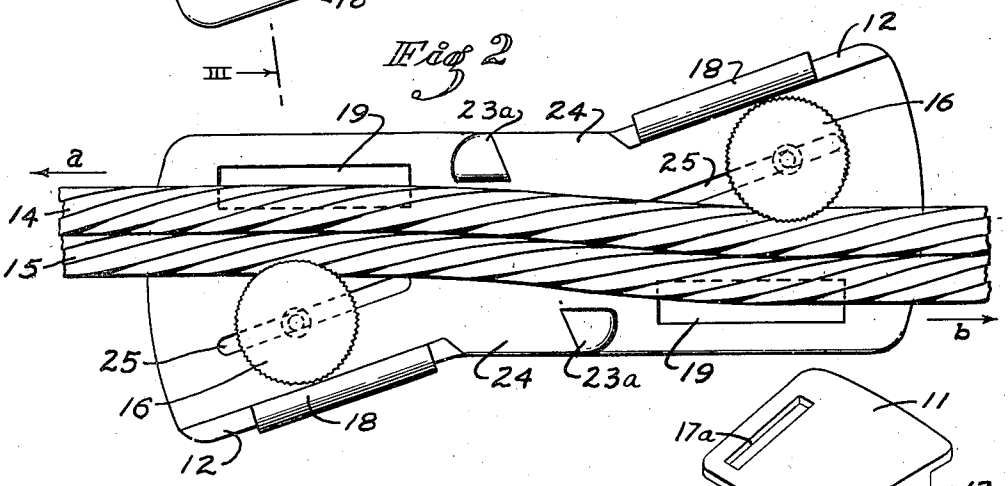


Fig 3

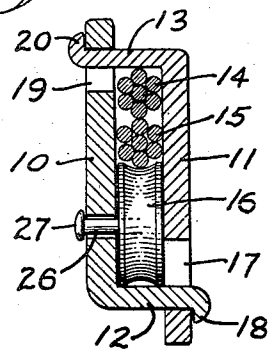


Fig 4

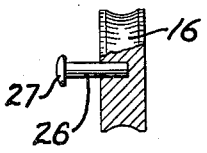
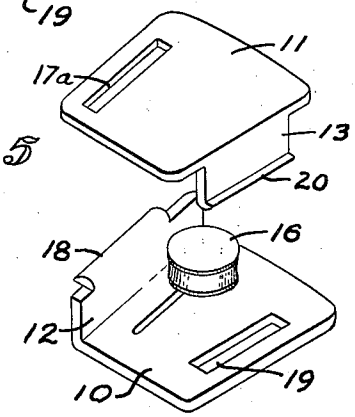


Fig 5



INVENTOR.
PAUL S EVERLEY
BY
Eastberg & Roemer
ATTORNEYS

Patented June 4, 1946 2,401,418

UNITED STATES PATENT OFFICE

2,401,418

CABLE CLAMP

Paul S. Everley, San Francisco, Calif.

Application November 6, 1944, Serial No. 562,180

5 Claims. (Cl. 24—126)

1

The present invention relates to cable clamps and particularly to the type of cable clamp wherein two strands of cable pass through and are enclosed by an open-ended housing and are retained therein against longitudinal movement by the jamming or frictional action of a pair of rollers acting between inclined surfaces within the housing and the strands of cable disposed therein.

It is the object of this invention to provide a cable clamp having a body member and one or more cover members which cooperate with the body member to form an open-ended enclosure through which the cable passes and within which jamming rollers act against the cable to secure it in place and also to secure the cover members against removal. A further object of the invention is the provision of a cable clamp constructed of relatively few simple parts which may be manufactured with a minimum of precision or machining operations and to produce a clamp which is very easily assembled upon and removed from cable strands and which is extremely durable and dependable in use.

The manner of attaining the foregoing and other objects of the invention is set forth in detail in the following specification wherein reference is made to the accompanying drawing which shows a preferred form of the invention. In the drawing:

Fig. 1 is a plan view of a cable clamp embodying the present invention;

Fig. 2 is a similar view of the same clamp illustrating a slight modification in structure and showing the body of the clamp with the cover members removed;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1 but showing in full a roller intersected by said line;

Fig. 4 is an elevation partially in section of one of the rollers employed in the clamp; and,

Fig. 5 is a perspective view of a modified or half-clamp showing the body member and cover member in separated relationship.

The clamp of the present invention, and as illustrated in the accompanying drawing, is of a type which is generally well-known, and which is adapted to receive two strands of cable and includes jam rollers which act against inclined surfaces on one wall of the clamp to press the cable strands against an opposite wall. In clamps of this kind a removable cover member is desirable as it facilitates the assembly of the clamp upon the cable strands. One difficulty with previously known clamps wherein a removable cover mem-

2

ber was employed has been that the cover member had to be closely fitted and was difficult to place upon and remove from the clamp. The present invention overcomes this particular difficulty in providing a cover member which may be very loosely fitted and therefore very easily applied to the body of the clamp without the necessity of precisely fitting surfaces but which is effectively locked against any possible removal from its assembled position by the same action of the jamming rollers which retain the cable strands against longitudinal movement in the clamp.

Referring to the drawing each of Figs. 1, 2 and 3 shows substantially the same clamp structure whereas Fig. 5 illustrates a modification which may be referred to as a half-clamp in that it is designed for lighter service and is essentially the same in construction and principle of operation as either half of the larger clamp shown in the other figures of the drawing. To facilitate an understanding of the common structural features it is therefore deemed advisable to use like reference characters to designate corresponding parts of the clamps shown in the several figures. Each clamp comprises a body member 10 and cover members 11. The body member is provided with an upstanding wall 12 along one side while the cover member is provided with a downwardly extending wall 13 on the opposite side so that when the cover and body member are combined they cooperate to provide a rectangular enclosure adapted to receive two strands of cable as indicated at 14 and 15 in Figs. 2 and 3 and two jam rollers 16. It is understood that in the forms of the invention illustrated in Figs. 1 and 2, two of the cover members 11 cooperate with each body member 10, whereas in the half-clamp shown in Fig. 5 a single cover member is employed with the shortened body member 10. In all cases the cover member is provided with a slot 17a to receive the upper end of the wall 12 on the body member and to interlock with a lip 18 formed at the upper edge of said wall. Correspondingly the body member is provided with slots 19 to receive the depending wall 13 on the cover member and to interlock with a lip 20 on said wall. Thus the cover members may be assembled on the body members to provide the desired enclosure by simply bringing them in place upon the body members and moving them laterally thereon sufficient to effect interlocking of the lips 18 and 20 with the cover member and body member respectively.

As illustrated in Fig. 1, the slots 17 are enlarged by having one edge curved as indicated at

21 to provide an opening which exposes a relatively large portion of the underlying roller 16 so as to facilitate engaging the roller with a tool which may be used to press it back or away from its jamming position when it is desired to loosen the clamp and remove it from the cable.

The wall 13 which is formed as a part of the cover member is disposed substantially parallel to the principal axis of the clamp, or in the same general direction as the strands of cable received by the clamp, while the opposite wall 12, which is part of the body member, is disposed at an angle to this axis and provides the inclined surface against which the jamming roller 16 acts in frictionally retaining the cable in the clamp. Consequently, as illustrated in Fig. 2 the strand 14, which is under a tensional stress in the direction of the arrow *a*, will be frictionally engaged by the roller 16 at the right side of Fig. 2 acting against the wall 12, while the strand 15, which is stressed in the direction of the arrow *b*, will be similarly engaged by the left-hand roller 16. Thus the rollers 16 in each case act against the wall 12 of the body member to press the cables against the wall 13 of the cover member and in so doing, not only prevent longitudinal movement of the cable strands, but also urge the cover member to a position where its lip 20 and the corresponding lip 18 on the body member assume the interlocking relationship which positively prevents removal of the cover. Therefore while the cover is very easily applied to its position upon the body member, before the roller comes into place, its removal is positively prevented by the action of the roller. Conversely, if the roller is forcibly retracted from its jamming position the cable strands are quickly released and the cover member is permitted to move out of its interlocking position with the body member so that the clamp may be quickly taken apart.

As indicated in Fig. 1 the walls 12 of the body member may be, and are preferably, extended beyond the central portion of the body member to form guides indicated at 23. These guiding portions of the wall are of assistance in assembling the body member of the clamp in proper position upon the cable strands. An alternative method of providing space for retracting the rollers 16 is shown in Fig. 2 wherein a portion of the guiding members 23*a* is shown as cut away as indicated at 24 to admit a drift pin or similar tool which may be used to strike the roller to retract it from its jamming position. It is to be understood that the extensions of the walls which form the guide 23 may be entirely eliminated as they are not essential to satisfactory operation of the clamp.

The rollers 16 are preferably retained against removal from the body member so that they will always be retained in readiness for movement into their jamming position as soon as the cables are enclosed by the application of the cover member In order to retain and guide the rollers the body member is provided with a slot 25 for each roller which is formed parallel to the wall 12 against which the roller acts. A trunnion 26 projects from the roller through said slot and is provided with a head 27 of greater diameter than the width of the slot. As shown in Fig. 4 the trunnion 26 is in the form of a pin which is driven into a suitable hole arranged axially of the roller and extending only part of the way through the thickness of the roller. The trunnion or pin is of a size to fit tightly within the hole in the roller so that it may be struck into place by a hammer blow and frictionally retained against accidental removal. The roller may be concavely contoured on its peripheral edge as shown, or it may, if desired, be provided with a flat periphery; in either case the cable engaging surface of the roller is preferably serrated or otherwise roughened as shown. It may also be desirable similarly to roughen the inside surface of the wall 13 against which the cable engages and this may be particularly desired in connection with a modification shown in Fig. 5 wherein the two strands of cable are held by a single roller so that one strand is frictionally engaged by the roller while the other strand is held only by its frictional contact with the inner surface of the wall 13 under the pressure exerted by the roller.

In placing the device upon cable to be clamped the two strands of the cable are usually arranged in parallel relation somewhat as indicated in Fig. 2. With the rollers in their fully retracted positions the body member of the clamp is placed against the cable. It is to be noted that this latter operation is greatly facilitated by the fact that there is very little obstruction to the entry of the cable strands into their proper positions. The cover members are then placed in position with the lip 20 of the cover member interlocking with the body member and the lip 18 of the body member interlocking with the cover member. The rollers are then pressed forwardly to assume a position such as that illustrated in Fig. 2 wherein they press the cable strands into engagement with the wall 13 of the cover member to prevent its removal and also to prevent longitudinal movement of the cables. In this assembled position any tendency of the cables to move in the dlirection of their stress as indicated by the arrows *a* and *b* in Fig. 2 tends to tighten the engagement of the rollers which can then be released only by the application of considerable force or a sharp blow which drives them out of their jamming positions.

Modifications other than those herein particularly disclosed may be made within the scope of the invention as it is defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A cable clamp formed of separable members which combine to form an enclosure about a pair of cable strands, a jamming roller acting against the cables in said enclosure, said separable members forming a pair of complementary interlocking halves held together solely by jamming action of the roller.

2. A cable clamp formed of separable members which combine to form an enclosure about a pair of cable strands, a jamming roller acting against the cables in said enclosure, said separable members forming a pair of complementary interlocking substantially identical halves held together solely by jamming action of the roller.

3. A cable clamp comprising a pair of members each including two right angularly disposed walls, said members cooperating to form an enclosure through which cable strands may be passed, each of said members having a slot formed in one wall for the reception of a part of the other wall of the opposite member, and an interlocking lip adjacent the received wall part of each member.

4. A cable clamp comprising a body member, a jam roller carried by the body member, a wall at one edge of the body member engageable by

said jam roller, a cover member having a wall and cooperating with the body member to provide a passage for cables between the jam roller and the wall on the cover member, an interlocking connection between said body member wall and the cover member, and an interlocking connection between said cover member wall and the body member.

5. A cable clamp comprising a body member, a jam roller carried by the body member, a wall at one edge of the body member engageable by said jam roller, a cover member having a wall and cooperating with the body member to provide a passage for cables between the jam roller and the wall on the cover member, an interlocking connection between said body member wall and the cover member, an interlocking connection between said cover member wall and the body member, and means at said connections to prevent separation of the body member and cover member while the jam roller is positioned to urge the cables against the cover member wall.

PAUL S. EVERLEY.