

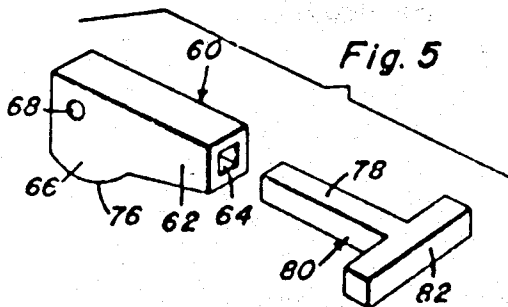
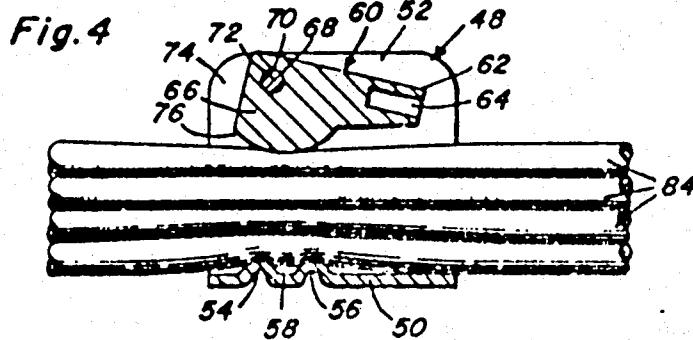
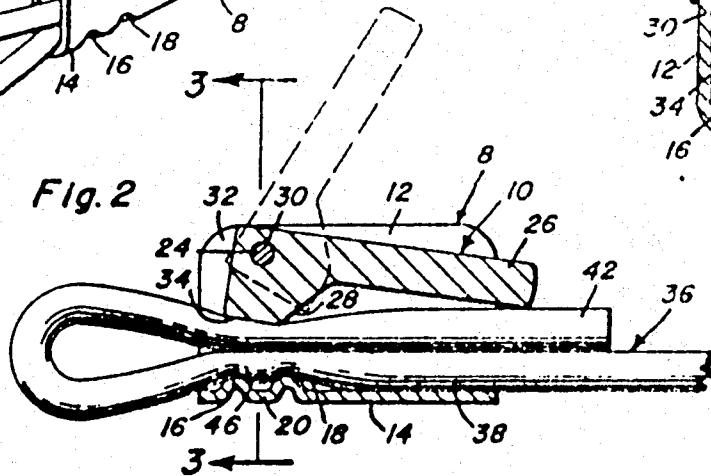
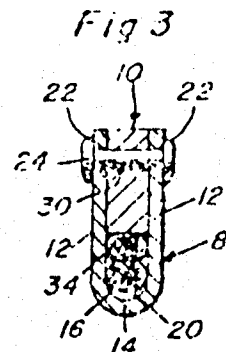
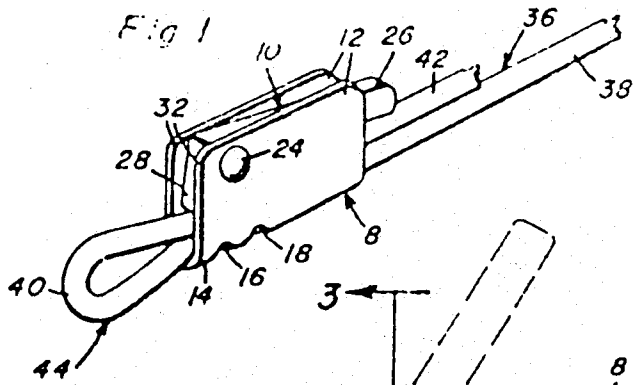
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CABLE CLAMP

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3,256,579

CABLE CLAMP

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This invention relates to an improved cable clamp which is expressly constructed to effectively and securely fasten cables, guy wires, ropes and the like together in positively connected relationship and is unique in that it is capable of being manually opened and closed thus obviating the need for tools or implements, such as are usually required.

Briefly, the clamp herein disclosed comprises three component parts, namely, an elongated channel-like holder or sheath, a solid precision-made cam-equipped lever, and an assembling and pivoting rivet or pin carried by and piercing the walls of the sheath and pivotally mounting the cam-equipped end in the channel in such a manner that the lever can be manually operated with intended ease.

One objective of the present invention has to do with small boating accessories, more particularly, a feasible cable clamp; one which is easy to use, simple in construction and otherwise designed and effectually adapted to serve the needs of the user. To this end, the clamp lends itself to use as a highly practical device by way of which the user can transform the end of a bendable plastic-coated marine cable (such as is used in connection with the steering control system) into an eye-loop by simply bending the terminal end back into the trough or channel of the sheath and then swinging the cam into the channel to bind and securely retain the eye thus formed. It follows that quick on-the-spot repairs can be safely and reliably made without a screwdriver, pliers or other tools.

Experience has shown that the herein disclosed clamp offers safety not only to the user but to the surface of the cable itself. With these objects in view a novel eccentrically pivoted cam is used, i.e., a cam whose marginal pressure impinging surface imposes a thrust on the cable and deforms and jams the deformed portion into a keeper seat between rib-like detents with the result that slippage is reliably prevented.

Novelty is also predicated on the aforementioned holder or sheath which is provided in the channel-shaped web portion thereof with at least two transverse ribs. These ribs provide detents and are spaced apart and define a crotch or keeper seat therebetween. The pivot point for the swingable cam is properly oriented with the detents, whereby the camming and cable-bending step is achieved with ease and certainty.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in perspective showing a cable clamp constructed in accordance with the present invention and illustrating how it is used in forming an eye-loop;

FIGURE 2 is a view on a larger scale with parts in elevation and which is taken centrally and lengthwise through the clamp depicted in FIG. 1 and which shows in full and phantom lines how the cam-equipped lever appears in open and closed positions;

FIGURE 3 is a cross section taken on the plane of the vertical section line 3—3 of FIG. 2;

FIGURE 4 is a view similar to FIG. 2 but showing a modified adaptation; and

FIGURE 5 is view in perspective showing the cam-equipped lever and T-shaped key which is used to open and close the cam.

Reference will be made first to the embodiment of the invention illustrated in FIGS. 1-3, inclusive. In these

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illustrations the aforementioned holder or sheath is denoted by the numeral 8 and this sheath is equipped with a complementary cam-equipped lever 10. The sheath provides an open ended channel therefor and can be alternatively described as a channel-shaped or, for that matter, as a U-shaped member. It is of one-piece construction and embodies a pair of opposed spaced parallel side walls or flanges 12 having their lengthwise bottom portions joined together by a transversely curved web 14 and it will be noted that the web adjacent the left-hand end thereof is provided with a pair of longitudinally spaced transversely disposed indentations which define and function as rib-like detents 16 and 18. These detents being spaced apart, define an intervening crotch which functions as a keeper seat 20. The pivot is directly above and in oriented alignment with ribs and keeper seat. The side flanges or walls are provided with oppositely aligned holes 22 which serve as bearings for the headed end portions of a rivet which constitutes a pivot pin 24.

Returning to the lever unit 10, it will be evident that this is of solid and therefore rigid construction. The lever proper 26 provides an operating handle and is of a length that the right-hand end portion projects through and beyond the cooperating open end of the channel. The left-hand end portion is provided with a laterally projecting enlargement or head 28 which constitutes a clamping eccentric or cam. The upper corner portion 30 of the cam is provided with a hole through which the main body portion of the pivot pin passes and therefore the cam-equipped lever is pivotally mounted between the corner portions 32 of the flanges 12. The cross-section of the lever unit 10 corresponds to the space between the interior surfaces of the channel walls or flanges and insures the desired rigidified mounting of the cam lever in the channel. The cable contacting or impinging marginal edge 34 of the cam is broad and shaped so that it is assured of making the desired pressure contact with the cable which is to be clamped and held in place. Actual use shows that this properly prepared broad surface 34 does not penetrate or cut the surface of the cable or cable portions. Rather it exerts downward pressure thereon and distorts or deforms the cable in the manner illustrated in FIG. 2 in order to achieve the desired compressing and clamping result. As can be seen from FIGS. 2 and 3 the cam holding action is positive but does not undesirably damage the compressible surface portions of the cable. It may be pointed out here that the expression "cable" is not intended to be limiting and in fact is intended to comprehend various kinds of cables, guy wires, rope and equivalent elements. The cable 36 appearing in these views is known as marine cable, the same being used for steering control systems in the pleasure boating field and it is accordingly coated or covered with plastic material (natural or synthetic) and affords protection against corrosion and prolongs the life of the cable. The main strand 38 is shown seated in the trough or channel and the free end or terminal portion is illustrated as bent upon itself as at 40, the terminal 42 passing back through the channel and being clamped in place and thus defining the aforementioned eye-loop 44. The manner in which the terminal end portion is clamped and bound and deformed is illustrated in FIG. 2 where, in full lines, the impinging surface 34 comes into play to squeeze and deform the contacting cable portions and in fact, the portion denoted at 46 is illustrated as bent where it contacts the ribs and also is partially seated in the keeper seat 20. The sheath 8, lever unit 10 and hinge or pivot pin 24 are frequently constructed of aluminum or equivalent non-corrodible material.

The cable clamp shown and described constitutes a complete self-contained accessory with no loose parts

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and which functions and without the use of an operating tool, quickly and safely clamps cable end portions or a plurality of cables or like holding the same securely against relative movement.

With reference now to the slight modification illustrated in FIGS. 4 and 5 it will be seen that the component parts are basically the same as already described. Briefly, the holder of sheath is denoted as an entity by numeral 48 and it comprises a deep channel wherein the curvate web or bight portion 50 joins the relatively deep side walls or flanges 52 together. Again, the bight or web is provided with internally projecting transverse longitudinally spaced rib-like detents 54 and 56 defining a keeper seat or crotch 58 therebetween with these features functioning to distort, bend and to securely anchor a part of the cable directly associated therewith. The lever unit in this instance is relatively short and is denoted by the numeral 60, the lever portion being denoted at 62 and having an axial non-circular socket therein as at 64. The enlarged cam head 66 has a hole 68 in its upper corner portion 70 which is mounted on the pivot pin 72 anchored in holes provided therefor in the corner portions 74 of the side flanges. The cable impinging and binding margin or periphery in this case is arcuately cambered as denoted at 76. This provides a smooth clamping and binding cam action. The socketed portion of the lever serves to accommodate the shank or stem 78 of the T-shaped key 80. The head portion of the key is denoted at 82 and the manner in which this key is fitted into the socket and used is believed to be explanatory and is therefore not being illustrated. This construction has been found to be satisfactory for use in the electrical field as a splicing device. The component parts of the clamp can be composed of insulating materials or a combination of metals and insulating materials. The cables here illustrated generally at 84 may represent either insulated cables or bare cables as the case may be.

It is submitted that a careful consideration will enable the reader to obtain a clear understanding of the construction and arrangement of the cooperating component parts, the features and advantages attending the same and the manner in which the invention is successfully used. Therefore, more extended description is regarded as unnecessary.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

A clamp for a length of cable, wire, rope or the like comprising an open-ended elongated U-shaped body of sheet material including spaced parallel side flanges connected by a curved web portion, said flanges and web portion being of equal length, the side flanges being paral-

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lel to each other throughout their extent and provided with rounded free corners, said web portion having a pair of longitudinally spaced transversely extending inwardly deformed areas defining a pair of spaced ribs with rounded inner edges for engaging the cable at spaced areas, a manually operable lever having a length generally equal to the length of the side flanges and having a thickness throughout its length generally equal to the space between the side flanges, said lever including an elongated handle and a cam portion, one longitudinal edge of said lever being continuous and straight throughout the length of the handle and cam portion, said cam portion having the other longitudinal edge generally parallel to said continuous longitudinal edge, the other longitudinal edge of the handle being generally parallel to said continuous edge and spaced laterally inwardly from the other longitudinal edge of the cam portion and being connected thereto by an inclined edge portion thus defining a handle of reduced width as compared with the cam portion, the transverse end edge of said cam portion remote from the handle being generally perpendicular to said longitudinal edges of said lever, a pivot pin extending through said side flanges and said lever thereby pivotally supporting said lever on said sheath, said pivot pin being orientated adjacent the end of said sheath having the ribs formed therein and adjacent the edges of said side flanges remote from the web portion and generally in alignment with the area of the web portion between said ribs, said pivot pin extending through said lever adjacent the corner defined by the continuous straight longitudinal edge thereof and the transverse end edge of said cam portion, the length of said other longitudinal edge of the cam portion being generally equal to the distance between the ribs and being smooth and straight throughout its length for clampingly engaging a cable over the length thereof engaged by the ribs thereby deforming a portion of the cable into the space between the ribs for securely anchoring the cable without damage thereto.

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