Feb. 9, 1943. V. E. JUSLIN ET AL 2,310,440

CABLE CLAMP

Filed Jan. 30, 1942

FIG_1_

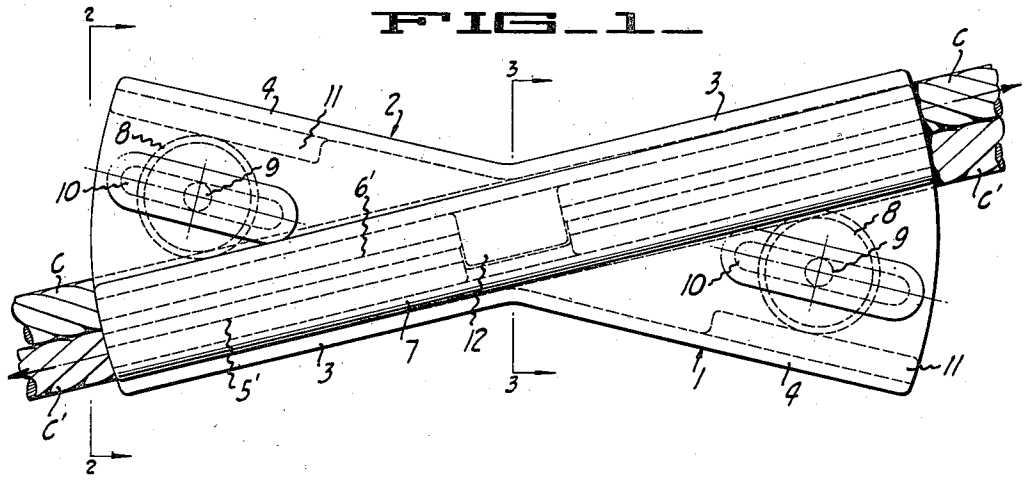


FIG_2_

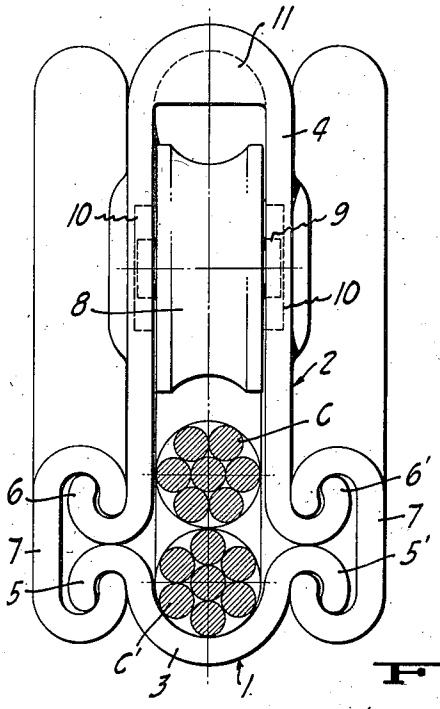


FIG_3_

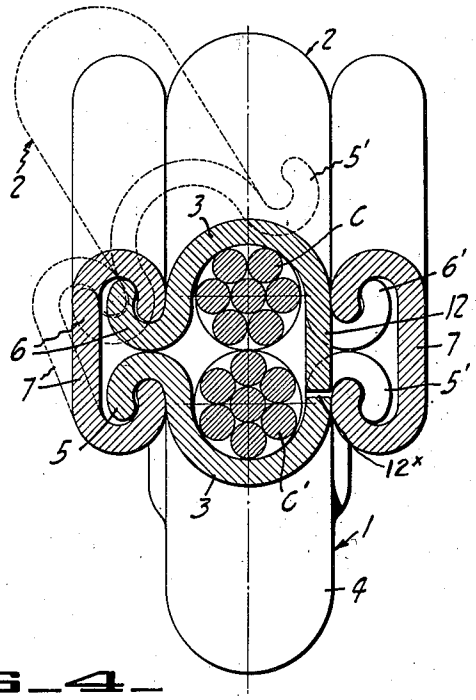
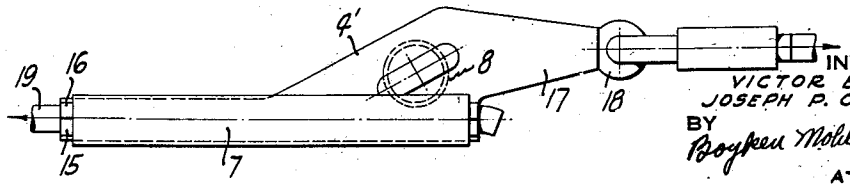


FIG_4_



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CABLE CLAMP

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Application January 30, 1942, Serial No. 428,838

5 Claims. (Cl. 24—126)

This invention relates to cable clamps, generally of the type shown in United States Letters Patents, No. 1,811,942, June 30, 1931, and No. 1,924,438, August 29, 1933, the former being a clamp for a pair of cables to be clamped together, and the latter being a strain clamp for a single cable, but both being of the type having the main body of the clamp in two sections hinged together.

The principal object of this invention is to provide improved construction for securing together the two sections of the main body of a clamp of the above designated type together, which construction provides a stronger, more readily assembled clamp than heretofore, and which construction also is considerably cheaper to make than other clamps of the same general type of which we are aware, and the separate sections will not shift relatively when in position on a cable or cables. Other objects and advantages will appear in the specification and drawing annexed hereto.

Clamps as illustrated in the patents noted above, comprise two elongated channel members positioned with their open sides in confronting relation, and in which the corresponding sides of the pair of members are connected by knuckle-joints similar to the connection between the leaves of a butt-hinge, in which a hinge pin extends through the registering eyes on projections from the leaves. In this construction, it is manifest that only a fraction of the material along each of the sides of the channel members receives the load when the clamp is on one or several cables, and it is also manifest that the slightest distortion of any one of the projections forming one of the eyes through which one of the hinge pins extends, will make it difficult, if not impossible, to insert the pin. Also open cracks along the adjacent edges of the alternately disposed projections on the adjacent sides of the members through which the pins extend will admit rain to the pins and cables, resulting in oxidization of the metal of the pins and the eyes, making it difficult to remove the pins and many times causing distortion of the projections forming the eyes in attempting to force the pins into or out of the eyes. The forming of eyes for the hinge pins is also expensive, and welding of the projections forming the eyes is required where there is a heavy strain on the cables or cable to be clamped.

These objections, as noted above, are all overcome by our improved construction, as will appear from the description and drawing.

In the drawing,

Fig. 1 is an elevational view of a two-cable clamp of our improved construction, certain concealed elements being indicated in dotted line.

Fig. 2 is an end view of the clamp of Fig. 1 as seen from line 2—2 of Fig. 1, the cables being shown in section.

Fig. 3 is a sectional view taken along line 3—3 of Fig. 1. The dotted lines indicate the body sections of the clamp swung apart for insertion or removal of cables.

Fig. 4 is an elevational view of a strain clamp showing the invention as applied to said clamp, opposite sides of the latter being identical in structure.

In detail, the clamp of Figs. 1 to 3 comprises a pair of elongated channel members 1, 2 forming halves of the body of the clamp, and which halves, when in clamping position are disposed with their open sides in confronting relation thereby providing an open-ended passageway between the halves for the cable or cables.

Each of the channel members is relatively shallow, and is substantially uniform in cross-sectional contour for about one-half of its length as indicated at 3 and then the depth of the channel progressively increases with the bottom of each channel straight along each half of its length as indicated at 4. The edges of the sides of the channel members are straight and the opposite sides of each member are bent oppositely outwardly and then backward to form relatively shallow straight channels generally designated 5, 5′ along the sides of member 1 and 6, 6′ along the sides of member 2, as best indicated in Fig. 2.

These shallow channels, 5, 5′, 6, 6′ function as guides for slidably supporting elongated channel strips 7, said strips having their opposite sides turned inwardly toward each other and terminating in free edges that substantially ride on the bottoms of said shallow channels while the free edges of said shallow channels are received in the channels formed on the channel strips 7. Both the shallow channels 5, 5′, 6, 6′ and those formed on the channel strips are substantially semi-cylindrical in cross-sectional contour, thus, when channel strip 7 is removed from engagement in the shallow channels 5′, 6′, the halves 1, 2 will swing apart, but are held together by the channel strip 7 engaging channels 5, 6, as indicated best in Fig. 3 in dotted line, or vice versa.

Within each of the portions 4 of the halves of the clamp body, is a roller 8 provided with

a short, stub-axle 9 projecting from opposite sides thereof into recesses 10. Said recesses are elongated and are in opposite sides of each portion 4 and extend parallel with the bottom of the portion 4 in which the roller is positioned. The width of the recesses is slightly greater than the diameter of the stub-axle therein, thus the roller is relatively loose but will not fall from the recesses.

On the bottom of each channel portion 4 is a strip 11 of hardened metal forming a track for the roller in each portion, which strip 11 is preferably welded in position.

When the sections 1, 2 of the clamp body are secured together by channel strips 7, the said sections are held against longitudinal slippage relative to each other by means of an ear 12 (Figs. 1, 3) on one of said sections about midway between its ends that is received in a complementarily formed notch cut 12x out of the side of the other section. This ear is a continuation of the side of the section carrying the same, as best indicated in Fig. 3 and this feature of the invention, in combination with the means securing the sections together against separation, is important, since the sections 1, 2 tend to slide longitudinally relative to each other when in use.

In operation, the channel sections 1, 2 are first swung apart, as indicated in dotted line in Fig. 3, and cables C, C' in parallel engaging relation are placed in the passageway formed by the sections. The strip 7 at one side of the sections 1, 2 functions as a hinge means connecting the sections for swinging apart.

After the cables C, C' are in position the sections are swung together as indicated in full line in Fig. 3, and the previously removed channel strip 7 is slipped longitudinally of the channels 5', 6' into position securing the sections together. In this closed position of the clamp, one roller 8 is on one side of the cables and is adapted to engage cable C while the other roller is at the opposite side of the pair of cables and is adapted to engage the other cable C'.

In the drawing, cable C is indicated as the one uppermost, and cable C' is the lowermost, while section 2 is the clamp section enclosing cable C, while section 1 is the section enclosing cable C'.

As seen in Fig. 1, upon pulling cable C toward the right, the roller 8 in section 2 will roll toward the right in wedging relation between the cable and track 11, while a pull on cable C' toward the left will likewise cause the roller in section 1 to be moved into wedging relation between cable C' and track 11 in member 1.

These rollers have milled edges and their peripheral surfaces in cross-section are formed to substantially correspond to the cross-sectional contour of the cables, while the rims of the rollers at opposite sides of the curved central portions thereof will engage the tracks 11. It is customary to initially force the rollers into engagement with the cables and tracks, after which the rollers will automatically tighten against the cables by reason of their friction surfaces engaging the tracks 11 that extend slantingly relative to the cables, and said cables.

As the tightening of the rollers on the cables tends to force the sections 1, 2 apart, the strips 7 are tightly held in position against sliding longitudinally relative to the shallow channel.

By the foregoing construction it will be seen that the clamp sections 1, 2 and strips 7 may be readily stamped from relatively heavy sheet metal, without the use of screws, pins, bolts or eyes for holding the sections together, or for holding the channel strips 7 in locking position, and the clamp is stronger and more economical to make and is easier manipulated than heretofore.

In Fig. 4 is shown a strain clamp in which one of the sections 15 is merely a straight channel without a roller, while the opposite section 16 is substantially identical with one of the sections 1, 2. These sections are secured together by channel strips identical with strips 7 of Figs. 1 to 3, said sections being formed along their adjacent edges with shallow channels identical with channels 5, 6, 5', 6'. The enlarged end 4' of section 16 that carries roller 8' has an extension 17 thereon provided with an eye 18 for securement to a cable, as indicated, while the cable 19 gripped by roller 8' extends through the passageway formed by opposed channels 15, 16.

Having described our invention, we claim:

1. A cable clamp comprising a pair of elongated channelled members positioned together with their open sides in confronting relation providing a passageway between said members for a cable; hinge means securing one of the sides of said pair together and for swinging said members apart; parallel flanges on the opposite sides of said pair of members extending longitudinally of said members and projecting outwardly of the latter; a channel strip extending longitudinally of said flanges substantially enclosing the latter and securing said opposite sides against swinging apart on said hinge means; said flanges supporting said strip for sliding longitudinally thereon for substantially the full length of said flanges and therefrom to release said opposite sides for swinging apart on said hinge means; said strip and said flanges including means respectively formed integrally therewith securing said strip on said flanges and securing said flanges substantially together during sliding of said strip on said flanges, said strip being of substantially uniform cross-sectional contour at all points along its length and said flanges being of substantially uniform cross-sectional contour at all points along their lengths.

2. A cable clamp comprising a pair of elongated channelled members positioned together with their open sides in confronting relation providing a passageway between said members for a cable; parallel flanges on one of the corresponding sides of said pair of members extending longitudinally thereof and projecting outwardly of said members; said flanges being generally U-shaped in cross-section transversely thereof and positioned with the open side of each U facing oppositely outwardly of the other and with their closed ends substantially together; means securing said flanges together and supporting said flanges swinging about axes parallel therewith comprising a channel strip substantially enclosing said flanges between the opposite sides of said strip; said opposite sides of said strip being generally of U-shape in cross-section transversely of the length of the strip with their open sides in confronting relation and with the free edges of the said sides of said strip respectively positioned adjacent said closed ends of the U formed by each flange and between the sides of the U of each flange.

3. A cable clamp comprising a pair of elongated channelled members positioned together with their opposed open sides in confronting relation providing a passageway between said members for a cable; means formed integrally

with one of the sides of each of said members securing said members together against relative movement between said members in direction longitudinally thereof; a laterally outwardly projecting elongated extension on each of the sides of said members extending longitudinally of said members along the line of division between said members thereby providing a pair of such extensions along opposite sides of said members; a channel strip substantially enclosing each of said pairs of extensions between the opposite sides of each strip securing said members together; the said extensions of each pair and the said opposite sides of each strip being of generally U-shape with the concave sides of the extensions facing oppositely outwardly relative to each other and with concave sides of the opposite sides of said strip facing toward each other; and the portions of each pair of adjacent extensions along the longitudinally free edges thereof being positioned in overlapping relation to the portions of the opposite sides of each strip along the longitudinally extending edges of said opposite sides whereby each of said strips is secured to each pair of extensions against transverse removal therefrom.

4. A cable clamp comprising a pair of elongated channeled members positioned together with their open sides in confronting relation providing a passageway between said members for a cable, parallel flanges respectively on the adjacent corresponding sides of said members extending longitudinally thereof and projecting outwardly of said members thereby providing a pair of said flanges at opposite sides of said pair of members; the flanges of each pair thereof being generally of uniform U-shape cross-section with their open sides facing oppositely outwardly and with their closed sides substantially together; a channel strip along each of said opposite sides of said members enclosing each pair of flanges between the opposite sides of each strip; the opposite sides of each strip along the free edges thereof extending inwardly toward each other and between the sides of said U-shaped flanges thereby securing said flanges together; means at one of the said opposite sides of said pair of members covered by one of said strips securing said pair of members together against longitudinal movement of said members relative to each other, and the strip at the other of said opposite sides of said members being slidable longitudinally of the flanges enclosed between the sides thereof to a position free from said flanges.

5. In a construction as defined in claim 4, the other of said strips that cover said means being also slidable longitudinally of the flanges enclosed between the sides thereof to a position free from said flanges, and the said means including a recess formed in one of said members and a projection on the other of said members positioned in said recess; said projection being releasable from said recess when said strips are removed from said flanges whereby said members may be separated from each other.

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