

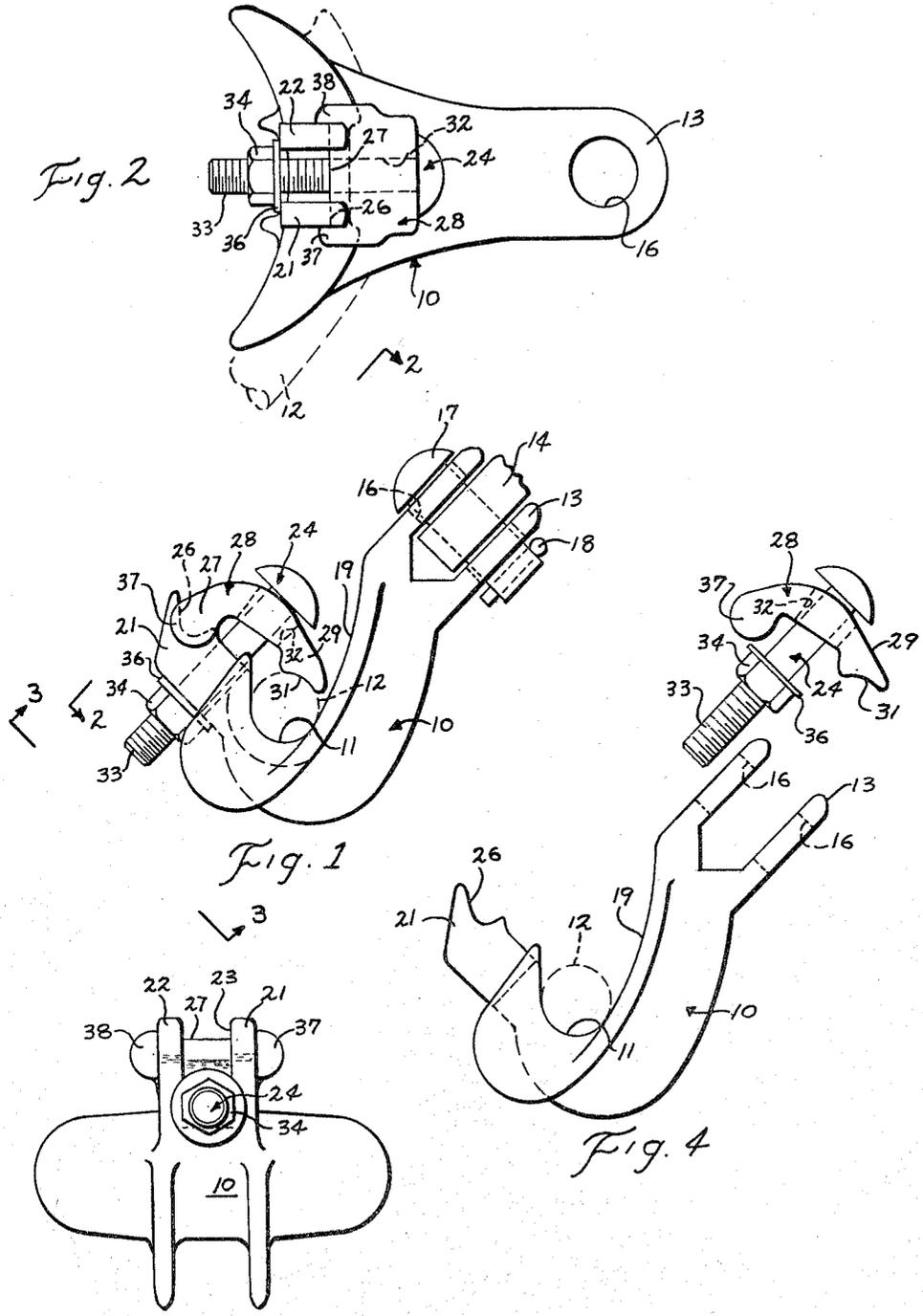
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ANGLE SUSPENSION CLAMP FOR CABLES

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ANGLE SUSPENSION CLAMP FOR CABLES

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1 Claim. (Cl. 248-62)

This invention relates to an angle suspension clamp for cables and more particularly to a side-opening angle clamp which is connected at its upper end to a supporting structure and hangs at an angle while the cable is supported thereby.

An object of my invention is to provide an angle suspension clamp for cables in which the keeper and the retaining means therefor is removed from the body of the clamp without having to unthread a nut from the retaining bolt, thereby facilitating installation and removal of the cable due to the fact that the keeper does not obstruct movement of the cable into and from the cable groove.

Another object of my invention is to provide an angle suspension clamp for cables of the character designated in which the keeper is pivotally supported adjacent its outer end by laterally projecting members while the inner end thereof extends above the cable and is disposed to move relative thereto to thus adapt the keeper for use with cables of various sizes.

Another object of my invention is to provide an angle suspension clamp for cables of the character designated in which improved means is provided to limit movement of the keeper longitudinally of the cables being clamped.

A further object of my invention is to provide an angle suspension clamp for cables which provides a continuous sloping, V-shaped groove for receiving the cable whereby the cable is guided into the cable receiving groove with a minimum of effort.

A still further object of my invention is to provide an angle suspension clamp of the character designated which shall be simple of construction, economical of manufacture and one in which the removable parts are operatively connected to each other whereby they do not become separated or lost while the cable is being inserted or removed from the cable receiving groove.

Heretofore in the art to which my invention relates, various type angle suspension clamps have been proposed. However, such clamps are provided with a keeper which is held in place by a bolt which extends through an opening in the body of the clamp and an opening in the keeper whereby the keeper is not separable from the main body of the clamp without unthreading the nut from the retaining bolt. Accordingly, the keeper and retaining means therefor must be separated each time the keeper is removed completely from the cable receiving groove. On the other hand, when the keeper is merely loosened to permit the cable to pass between the same and the clamping groove, the keeper often moves back into the cable groove to thereby obstruct movement of the cable into the groove. Also, it has been difficult to provide a keeper which is adapted for use with various size cables due to the fact that the keeper does not pivot relative to the cable.

Briefly, my improved angle suspension clamp comprises a body member adapted to be attached adjacent its upper end to a support. An upwardly opening cable groove is provided in a side of the body member for receiving the cable. Spaced apart, laterally projecting members are carried by the body member outwardly of the cable groove and a keeper is pivotally supported adjacent one end thereof by the laterally projecting members with the other end of the keeper extending inwardly over the cable groove for clamping a cable therebetween. A bolt extends through the keeper and is disposed to move laterally between the laterally projecting members. A retaining nut is mounted on the bolt for drawing the

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keeper toward the cable groove upon rotation in one direction and is disposed to release the keeper upon rotation in the opposite direction whereby the bolt, keeper and retaining nut are movable as a unit for attachment to and removal from the clamp body.

An angle suspension clamp embodying features of my invention is illustrated in the accompanying drawing, forming a part of this application, in which:

FIG. 1 is an elevational view of the clamp, showing the supporting means therefor broken away and showing the cable in dotted lines;

FIG. 2 is a plan view taken generally along the line 2-2 of FIG. 1 and showing the cable in dotted lines;

FIG. 3 is an end elevational view taken generally along the line 3-3 of FIG. 1; and,

FIG. 4 is a side elevational view corresponding to FIG. 1 but showing the keeper, bolt and retaining nut removed as a unit from the body of the clamp.

Referring now to the drawing for a better understanding of my invention, my improved clamp comprises a body member 10 having an upwardly opening groove 11 therein for receiving a cable indicated in dotted lines at 12. A clevis connection 13 is provided in the upper end of the body member 10 for receiving the eye of a support member 14. Openings 16 are provided through the clevis member 13 for receiving the usual clevis pin 17 which is retained in position by a cotter pin 18. As shown in FIG. 1, the body member 10 depends from the support member 14 whereby it is inclined relative to the vertical. Accordingly, the upwardly opening groove 11 provides a generally V-shaped groove for guiding the cable 12 therein. Also, the surface of the body member 10 which merges with the V-shaped groove 11 is curved as at 19 to further aid in guiding the cable into the groove.

Spaced apart, laterally projecting members 21 and 22 are carried by the body member 10 outwardly of the cable groove 11. An outwardly opening slot or recess 23 is thus provided between the laterally projecting members 21 and 22 for receiving a bolt 24.

Outwardly and upwardly opening recesses 26 are provided adjacent the outer ends of the laterally projecting members 21 and 22 for receiving one end 27 of a keeper 28. The outer end of the keeper indicated at 29 extends inwardly relative to the cable groove 11 in position to engage the cable 12, as shown in FIG. 1. The end 29 of the keeper is provided with a concave under surface 31 which is disposed to engage the outer surface of the cable 12 as that end of the keeper is drawn inwardly toward the cable. An elongated opening or slot 32 is provided in the keeper 28 for receiving the bolt 24 whereby the keeper is adapted to pivot relative to the bolt. That is, the opening 32 is elongated in a direction perpendicular to the longitudinal axis of the cable 12 and the cable groove 11. It will thus be seen that the end 27 of the keeper 28 is adapted to pivot in the outwardly and upwardly opening recesses 26 while the other end 29 is adapted to move toward and away from the cable groove 11.

The lower end of the bolt 24 is threaded as at 33 for receiving a retaining nut 34 which is disposed to draw the end 29 of the keeper 28 toward the cable groove 11 upon rotation in one direction and to release the end 29 of the keeper upon rotation in the opposite direction whereby the bolt 24, keeper 28 and the retaining nut 24 are movable as a unit for attachment to and removal from the body member 10. Preferably, a washer 36 is interposed between the retaining nut 34 and the under surface of the laterally projecting members 21 and 22, as shown.

To limit movement of the keeper 27 in a direction longitudinally of the cable 12 and the cable groove 11, I provide depending lugs 37 and 38 at opposite sides of

the end portion 27 of the keeper in position to extend alongside the outer surfaces of the laterally projecting members 21 and 22. While I have shown the lugs 37 and 38 as extending downwardly alongside the outer surfaces of the laterally projecting members 21 and 22, it will be apparent that a depending lug could be provided between the laterally projecting members 21 and 22 to limit movement of the keeper in a direction longitudinally of the cable and the clamping groove therefor.

From the foregoing description, the operation of my improved angle suspension clamp will be readily understood. The bolt 24, keeper 28, nut 34 and its retaining washer 36 are removed as a unit from the body member 10, as shown in FIG. 4, whereby the cable 12 is guided into the groove 11 by the upwardly and outwardly flaring sides of the body member 10 which merge with the groove 11. Also, the downwardly curved side portion 19 of the clamp 10 and the laterally projecting members 21 and 22 aid in directing the cable 12 into the groove 11. By removing the keeper and the securing means therefor completely from the vicinity of the groove 11, the cable 12 is free to move into the groove without contacting the keeper. Also, by completely removing the keeper and the retaining means therefor from the body member 10, there is no chance of the keeper being accidentally moved back into the cable groove 11 prior to seating of the cable. As shown in FIG. 4, the keeper and its retaining means is easily removed from the body member 10 without disconnecting the retaining nut 34 from the bolt 24. That is, the nut 34 is unthreaded a sufficient distance to permit lateral movement of the keeper and the bolt 24 outwardly of the body member 10. The outwardly opening slot or recess 23 permits free lateral movement of the bolt 24 into and out of operating position.

After the cable 12 is positioned within the groove 11, the shank of the bolt 24 is inserted between the laterally projecting members 21 and 22 whereby it moves freely in the outwardly opening slot 23 to position the inner end 29 of the keeper 28 directly over the cable 12. The end 27 of the keeper 28 thus pivots in the outwardly and upwardly opening recesses 26 whereby upon tightening the nut 34, the bolt 24 draws the end 29 of the keeper 28 into engagement with the cable 12. Since the under surface 31 of the end 29 is concave, the keeper 28 is adapted to pivot to accommodate the under surface 31 for receiving cables of various diameters. The elongated opening 32 in the keeper 28 also permits free pivotal movement of the keeper relative to the bolt 24 whereby the keeper is free to pivot relative to the recesses 26. The depending lugs 37 and 38 engage opposite sides of the laterally projecting members 21 and 22 whereby the keeper 28 is held against movement longitudinally of the cable 12 and the groove 11.

From the foregoing, it will be seen that I have devised an improved angle suspension clamp in which the cable is easily installed and removed due to the fact that the keeper and its retaining means may be easily removed from the vicinity of the cable receiving groove. The cable 12 is also guided into the groove 11 by the generally V-shaped groove defined by the sides of the body member 10. Also, the laterally projecting members 21 and 22 form an extension for one side of the V-shaped groove,

thereby aiding further in directing the cable into the groove. By providing a keeper and retaining means therefor which may be readily removed from the main body portion of the clamp by merely loosening a nut, not only is the keeper removed from the vicinity of the cable receiving groove, but there is no necessity of separating the keeper from its retaining means, thereby eliminating chances of the various retaining elements being lost. Furthermore, by providing a keeper which is adapted to pivot adjacent one end about a fulcrum located outwardly of the cable groove while the other end thereof moves relative to the cable groove, forces imparted to the keeper by the bolt 24 cause the end 29 of the keeper to move into firm engagement with the cable.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claim.

What I claim is:

An angle suspension clamp for cables comprising:

- (a) a body member having an upwardly opening cable groove in a side thereof,
- (b) connector means adjacent the upper end of said body member adapted to be secured to a support for supporting the clamp,
- (c) spaced apart laterally projecting members carried by said body member outwardly of said cable groove defining an outwardly opening recess therebetween,
- (d) a keeper pivotally supported adjacent one end thereof by said laterally projecting members with the other end of said keeper extending inwardly over said cable groove for clamping a cable therebetween,
- (e) a bolt disposed to move laterally into said outwardly opening recess between said laterally projecting members,
- (f) there being an opening through said keeper elongated in a direction perpendicular to the cable groove for receiving said bolt, and
- (g) a retaining nut on said bolt disposed to draw said other end of the keeper toward the cable groove upon rotation in one direction and disposed to release said other end of the keeper upon rotation in the opposite direction whereby said bolt, keeper and retaining nut are movable as a unit selectively into said outwardly opening recess and outwardly of said outwardly opening recess for attachment to and removal from said body member.

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