April 25, 1933. W. G. MILNE 1,905,967

CABLE CLAMP

Filed April 28, 1932

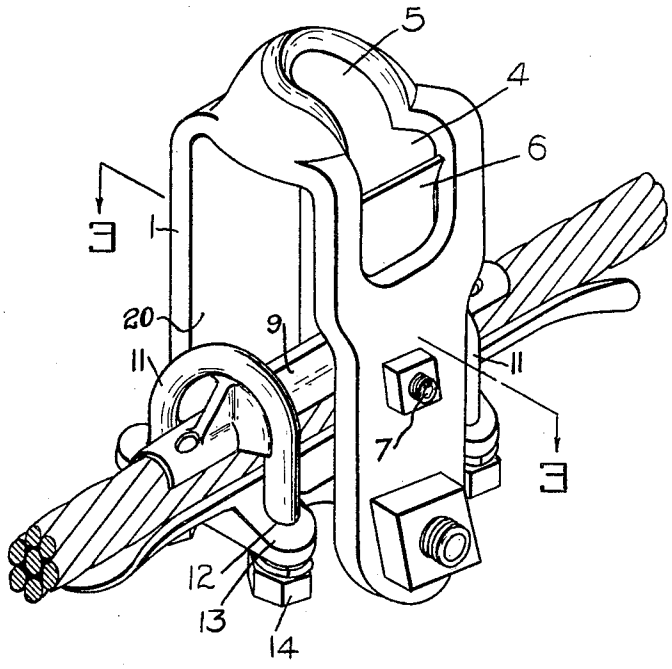


FIG. 1.

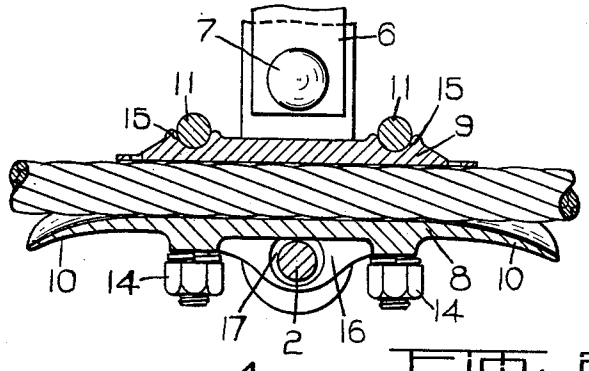


FIG. 2.

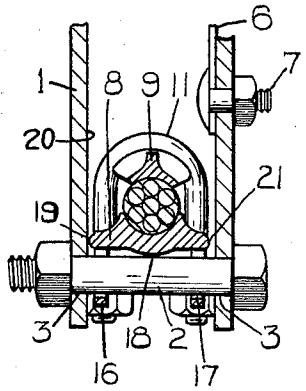


FIG. 4.

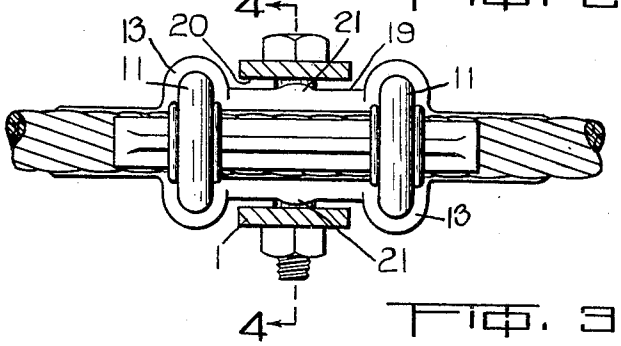


FIG. 3.

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UNITED STATES PATENT OFFICE

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CABLE CLAMP

Application filed April 28, 1932. Serial No. 608,071.

My invention relates to improvements in cable clamps and is particularly devised for use for supporting high tension electrical cables, and the object of my invention is to provide a clamp which is particularly designed to avoid the possibility of fracture, or if fracture occurs, to have the clamp so designed that there is little possibility of the cable being completely released whereby it would fall and rest against the tower supporting the clamp or upon the ground. It will be understood, in this connection, that high tension cables are generally supported by spaced apart poles or towers, and that the cable must necessarily be comparatively large and heavy in order to carry a heavy electrical load and also to withstand the strain of its own loop weight between the points of support.

A further object of my invention is to so construct my clamp that it comprises a pivotally mounted element, that is clamped around the cable and supported by a loop structure which is in turn suitably supported, as by the insulator string, and another object of my invention is to so mount the clamping element upon its supporting loop that the clamp element is permitted a rocking motion in all directions in respect to the supporting loop so that the clamp does not impose any torque strain upon the cable as the cable loops swing or vibrate, and a still further and particular object of my invention is to so construct my clamp that the frictional contact between the stationary and movable parts is reduced to a minimum without in any way sacrificing the utility or sturdy construction of the clamp.

My invention consists of a cable clamp constructed and arranged all as hereinafter more particularly described and illustrated in the accompanying drawing in which:—

Fig. 1 is a perspective view of my device carrying a portion of a cable.

Fig. 2 is a vertical longitudinal sectional view through the clamping element of my device.

Fig. 3 is a horizontal cross sectional view through the supporting loop, such section being taken through the line 3—3 of Fig. 1, and

Fig. 4 is a vertical cross sectional view taken through the line 4—4 Fig. 3.

Like characters of reference indicate corresponding parts in the different views in the drawing.

The portion of my clamp which I designate as the loop comprises an inverted U shaped member 1 having a bolt 2 extending across the open end thereof through a pair of orifices 3, the bolt being furnished for supporting the clamp element as shall be hereinafter explained.

The upper of one side of the loop 1 is formed with a slot 4 extending from a slot or orifice 5 in the upper end of the loop, the slot 5 and the upper end of the loop being formed to receive the head of a mushroom type insulator. The slot 4 is of greater width than the orifice 5 to permit the insertion of the insulator head through the slot 4 into a position underneath the top of the loop 1, and 6 is a locking plate extending across the lower portion of the slot 4 and secured to the side of the loop by a bolt 7. When a loop is being hung from an insulator, the bolt 7 is loosened to permit the plate 6 being swung away from the orifice 4 so that the insulator head can be inserted, after which the plate 6 is returned to its original position and the bolt 7 tightened up.

The cable clamping element of my device extends through the loop 1 and comprises two members 8 and 9 which are of channel form and positioned about the cable. The ends 10 of the lower member 8 are deflected downwardly to avoid any possibility of such member cutting the cable. The members 8 and 9 are clamped together by a pair of U bolts 11 which extend over the member 9 in the vicinity of its ends and extend through orifices 12 in lugs 13 formed upon the sides of the lower member 8; ends 14 being provided upon the U bolt and bearing against the under faces of the lugs. The upper member 9 is formed with seats 15 for the reception of the U bolts so that there is no possibility of such member creeping after the U bolts are tightened up.

The member 8 rests upon the bolt 2 extending across the open end of the loop 1 and is furnished with a pair of downwardly projecting lugs 16 having orifices 17 therein through which the bolt 2 extends. The orifices 17 are of greater diameter than the diameter of the bolt 2 so as to permit a free play. The under face 18 of the member 8 which rests upon the bolt 2 is transversely curved as illustrated in Fig. 4 so that there is only a single point of contact between the member 8 and the bolt.

The member 8 is free to rock upon the bolt 2 either in a transverse or horizontal direction about the single point of contact between the two curved faces 18 of the member 8 and the cylindrical face of the bolt 2. As the cable loops between the clamps extend downwardly considerably below the level of the clamps, it will be readily seen that there is little possibility of the side edges 19 of the member 8 permanently resting upon the bolt 2 as the tendency of the cable loops is to keep the member 8 balanced.

In order to reduce the friction between the side edges 19 of the member 8 and the inner faces 20 of the loop, I form the side edges 19 with convexed projections 21 which are adapted to constitute the only frictional contact between the member 8 and the faces 20. It will thus be seen that all the frictional points of contact between the rigid and movable elements of the clamp have been reduced to a minimum.

When cables are being strung one of several methods may be employed dependent upon the weight of the cable and the nature of the terrain. In one method, wherein the cable is of a comparatively heavy type, the towers are first provided with insulator strings and the procedure is generally to hang snatch blocks from the insulator strings and pull the cable up into the snatch blocks, after which the cable is drawn to the correct metered tension. When this is done, falls or pulley blocks are suspended from convenient portions of the towers and by means of which the weight of the cable is lifted from off the snatch blocks and cable clamps substituted for the snatch blocks, the cable being adjusted and tightened up in the clamps.

From the foregoing description of my clamp it will be readily seen that in the insertion of the cable into my clamp, after the cable has been lifted from off the snatch block, that it is only necessary to remove the bolt 2, position the cable with the members 8 and 9 thereon in the loop 1 and reinsert the bolt 2 so that it passes through the orifices 17 in the lugs 16. When this has been done and the cable adjusted the U bolts 11 are tightened up thus retaining the cable in its adjusted position.

What I claim as my invention is:

1. In a suspension clamp, the combination with an inverted U shaped loop and a cable clamp extending freely through the loop, of a bolt extending across the open bottom of the loop and over which the cable clamp is positioned and by which it is supported, lugs having orifices therein extending downwardly from the clamp and through which the bolt extends, and a convex bottom formed upon the clamp and resting upon the bolt.

2. In a suspension clamp, the combination with an inverted U shaped loop and a cable clamp extending freely through the loop, of a bolt extending across the open bottom of the loop and over which the cable clamp is positioned and by which it is supported, a convex bottom formed upon the clamp and resting upon the bolt, and a pair of horizontal convex projections formed upon the sides of the clamp to bear against the inner faces of the sides of the loop.

3. In a suspension clamp, the combination with an inverted U shaped loop and a cable clamp extending freely through the loop, of a bolt extending across the open bottom of the loop and over which the cable clamp is positioned and by which it is supported, lugs having orifices therein extending downwardly from the clamp and through which the bolt extends, a convex bottom formed upon the clamp and resting upon the bolt, and a pair of horizontal convex projections formed upon the sides of the clamp to bear against the inner faces of the sides of the loop.

4. In a suspension clamp, the combination with an inverted U shaped loop and a cable clamp extending freely through the loop, of a fulcrum piece extending across the open bottom of the loop and over which the cable clamp is positioned and by which it is supported, and a pair of horizontal convex projections formed upon the sides of the clamp to bear against the inner faces of the sides of the loop.

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