This invention relates to clamps and more particularly to "dead-end" clamps for electrical conductors.

An object of this invention is to provide a clamp to be employed in making "dead" connections for electrical conductors, and particularly for insulated conductors.

Another object of the invention is to provide a clamp which will grip both strands of a loop at a "dead end" and hold them securely without injuring the insulation.

A further object of the invention is to provide a clamp of the character referred to above, having a reinforcing member shaped to receive the portion of the loop beyond the clamping part thereof and which will assist the clamp portion in holding the loop securely without slipping.

And a still further object of the invention is the provision of a clamp of the character referred to above that may be made from pressed sheet metal, and thereby lend itself to quantity production, and low cost of manufacture.

Other objects of the invention will, in part, be apparent and will, in part, be obvious from the following description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a fragmentary view in perspective showing a dead-end clamp embodying a form of the invention as used in securing a service cable to the wall of a building or other structure;

Fig. 2 is a top plan view of the clamp, the clamp bolt being shown in connection on a plane indicated by line II—II of Fig. 3;

Fig. 3 is a view in side elevation, of the clamp; and

Fig. 4 is a view in perspective of the clamp bolt.

Throughout the drawing and the specification like reference characters indicate like parts.

In Fig. 1 of the drawing, a dead-end clamp 1 is shown as used in securing a service cable 2 to the wall of a building or other structure indicated at 3 which is to be supplied with electricity for power or lighting purposes. A service cable, as contemplated herein, is one which embodies an electrical conductor having an insulating covering, or one which embodies two or more conductors that are insulated from each other and disposed within a sheath or covering of insulating material.

In Fig. 1, cable 2 is illustrated as having two electrical conductors 4 and 5 therein. The portion of the cable which leads from the distribution line (not shown) is designated by reference character 6, and the portion or run which leads to the point where electricity is to be used, is designated by character 7.

The service cable is anchored to the building by means of an insulator 9 which is attached by means of a clevis 10 and bolt 11 to the building, the cable passing through an eye or thimble 12 formed in the insulator. The cable when it passes through the eye or thimble 12 forms a loop, the two strands of which are grasped by the clamp 1 to prevent the cable from slipping through eye 12 and imposing a strain or run 7 thereof.

Clamp 1 comprises two parts 13 and 14 between which the strands of the loop are disposed and a bolt 15 and nut 16 which when drawn up tight causes the strand to be securely held between the parts 13 and 14. The clamp also includes an open thimble 17 that passes through eye 12 and conforms substantially to the shape of the loop, and which is grooved or channelled to receive the portion of the cable forming the dead-end loop.

It is preferred that thimble 17 be made integral with one of parts 13 or 14 and that parts 13, 14, and 17 be made as stampings from sheet metal. It is only that parts 13 and 17 are integral.

Part 13 is flanged at the sides as at 18 and 19 to form a channel with a flat bottom. It is preferred that these flanges be made to converge towards the front end thereof so that the channel will be tapered as this allows the strands of the loop to be brought closely together at the front end thereof, and causes the portions of the strands which are gripped by the clamp to lie as closely as possible to the clamp bolt.

The opposite ends of the flanges 18 and 19 are flared outwardly as at 20—20, 21—21 and the front end 22 of the bottom of the channel is flared downwardly, to insure that there will be no sharp edges or shoulders in contact with the insulation of the cable to cut or injure the same. These flanges also stiffen and strengthen clamp part 14, and renders it very resistant to distortion.

Portion 17 is united with the rear end of part 13, and is shaped to form an open thimble, one end of which in effect starts at the back of part 13 and to one side thereof, and terminates short of the other side thereof, thereby providing a space 23 of such width that the thimble may be hooked through eye 12 of the anchor or support; or onto any other suitable support. Portion 17 is channelled to form a groove 25 in which the service cable loop lies.

Part 16 is preferably flat and shaped to fit the channel of part 13, and its opposite ends are...
flanged upwardly as at 25 so that it will have sharp edges or shoulders to cut or dig into the cable, and also to stiffen and strengthen the same.

Bolt 15 is provided with portion 26 between the head and its threaded shank, which is somewhat oval in section, and received in an oval shaped opening 27 in part 14, which together prevent the bolt from turning when nut 16 is drawn up to tighten the clamp.

As may be seen in Figs. 1 and 3, part 13, and portion 17 are so shaped and positioned that the portion of the cable which forms the loop will be co-planar with the incoming run of the cable.

The tension on the cable will therefore act in a straight line on the loop and the clamp and for that reason there will be no strains on the clamp tending to distort it or to separate the clamp parts 13 and 14.

When employing clamp 1 to make a dead-end connection, part 16 may either be removed from part 14 or the nut may be backed off far enough to provide sufficient space between parts 13 and 14 to accommodate the cable. Thimble 17 is hooked into the eye 12 of the insulator, after which the cable is threaded through the eye and placed in the groove of the thimble. The strands of the loop may then be placed in the channel of part 14, one on each side of bolt 15, or if part 14 has been removed, this part is mounted in place, the bolt inserted through the openings in the clamp parts and between the strands, and the nut turned on only part way. The incoming run of cable is then drawn up tight, pulled through the thimble 17 until the slack is taken up, and nut 18 is tightened until the strands of the loop are secure. The cable is gripped in two places, one at each strand of the loop, so that the strain on the insulation will not be concentrated at one point.

Portion 11 of the clamp also tends to prevent the cable from slipping through the clamp because the friction developed between the groove thereof and the cable adds materially to the holding power of the clamp. In practice, it has been found that when the clamp has been drawn up tight, and the stretcher disconnected from the incoming run, that the incoming run will slip through the clamp a slight amount until the loop is pulled up tightly in the groove of portion 17, after which no further slipping occurs. This shows that thimble 17 supplies a considerable amount of holding power, and that the clamp is self-adjusting in that the strain throughout the portion of the cable which forms the dead-end loop is equalized.

From the above it will be apparent that the clamp is simple in construction, as it embodies but three parts, two without the bolt; that it grips both strands of the dead-end loop; that the pressure of the clamp extends over a large area, which results in low unit stress on the insulation; and that the clamp does not cut or abraid the insulation and is inexpensive and easy to apply.

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

1. A clamp comprising a channel member and a cooperating plate disposed within the channel between which the strands of a loop may be received, a bolt for drawing said clamp parts together to clamp both strands of the loop, and a grooved reinforcing hook formed integrally with said channel member and serving as a bearing for the loop and being arranged for easy attachment to a support such as the eye of an anchor bolt for example.

2. A device for clamping two strands of an insulated conductor the loop of which passes around a support or anchor and for reinforcing the conductor loop, comprising a channel member for receiving both strands of the loop and having a grooved loop portion for receiving the loop, said loop portion being discontinuous so that it may be hooked onto the support or anchor, a clamp plate disposed to be received in the channel member and on top of the strands, and a bolt for clamping said plate and channel to secure the strands and prevent opening up of the loop.

3. The combination in a dead end clamp of a body formed from sheet metal and having a hook at one end with an outwardly opening groove for receiving the cable to be clamped, the hook being adapted to be inserted into a holding device, the other end of the body being formed into a channel for two strands of cable, a member for holding the two strands of cable in place within said channel and a single bolt extending through the body member at the end of said channel for holding said member in place and clamping the cable in place on each side of said bolt.

4. In a dead end clamp, a body member having at one end a hook having a cable groove in its outer face and which at the other end is formed with a channel, the opposite sides of which are substantially continuations of the opposite sides of the hook.

5. In a cable clamp, a body member formed from sheet metal and having at one end a hook for insertion into a support member and formed externally with an outwardly opening cable groove and at the other end with a longitudinally tapering groove for receiving two separate cable strands the opposite sides of said tapering groove being in line with the groove in the hook, and means for securing said strands in said groove against slipping.

6. A dead end cable clamp made from sheet metal and comprising a grooved hook having a unitary shank of channel shape, the sides of the channel converging from the base of the hook towards the outer end of the shank to form a tapered channel in which the strands of cable disposed in the hook groove may be received, a plate adapted to be positioned between the sides of the channel and on top of the cable strands, the opposite edges of said plate converging in a direction to conform substantially to the taper of the channel, and a bolt for drawing said plate and clamp into cable clamping position.

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