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INSULATOR CLAMP

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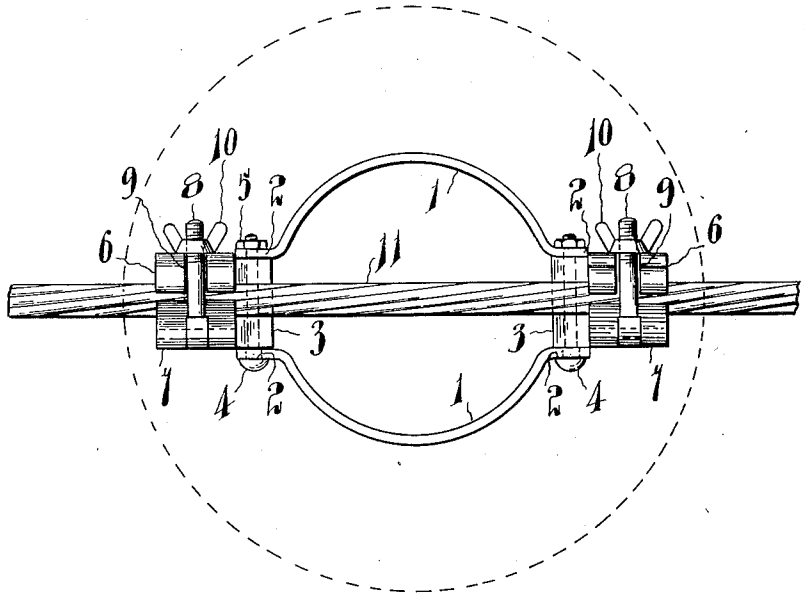


Fig. 1.

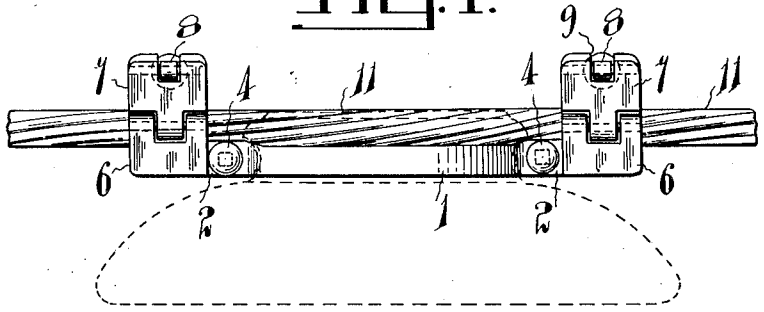


Fig. 2.

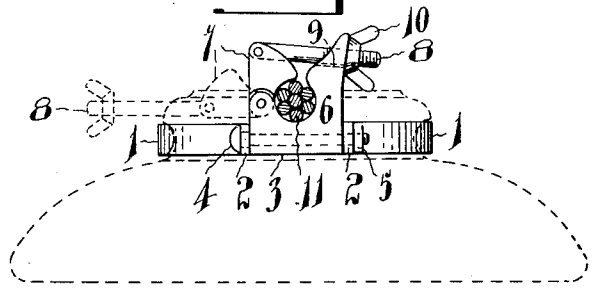


Fig. 3.

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INSULATOR CLAMP

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4 Claims. (Cl. 173—313)

This invention relates to insulator clamps for attaching an electric conductor to insulators. Heretofore the conductor has usually been secured to the insulator by a tie-wire. It is a simple matter to securely attach the line when the latter is dead, but, while special tools have been devised for fastening tie wires with live conductors, it is very difficult for the average lineman to put the tie wire on with these tools sufficiently tight to hold the conductor secure. While clamps have been devised for taking the place of these tie wires, such clamps have not been satisfactory, the main objection being that they are not satisfactory for working on live conductors, and another objection being that in disconnecting the clamp from the conductor, the clamp is simultaneously disconnected from the insulator.

My object therefore is to devise a clamp which may first be secured to the insulator, and which subsequently may be engaged by the line, and which readily lends itself to the use of protective tools for the clamping of live lines.

A further object is to devise a clamp which, while securely holding the line, will permit vibrations of the line due to wind and other causes to travel past the clamp without undue checking, thus avoiding burning up or crystallizing of the conductor.

I attain my objects by constructing the clamp substantially as hereinafter described and illustrated in the accompanying drawing in which

Fig. 1 is a plan view of the improved clamp;

Fig. 2 a side elevation of the same, with the insulator shown in dotted lines; and

Fig. 3 an end elevation of the clamp, also with the insulator shown in dotted lines.

In the drawing like numerals of reference indicate corresponding parts in the different figures.

The insulator-engaging portion of the clamp comprises a pair of concave members **1**, having extensions **2** at each end, between which are positioned spacer blocks **3**. At each end through alined holes in the extensions and spacer is passed a single securing bolt **4** having a nut **5** set up thereon. The spacer blocks **3** are of such a width and the concave members **1** so shaped that when the nuts **5** are tightened up, the insulator-engaging portion is free to rotate on the insulator. The advantage of this arrangement is that the clamp may be secured on the insulator before the latter is positioned and after the insulator is set in position, the clamp may be rotated on the insulator to the proper position to receive the line.

To facilitate assembly, the bolts **4** are of the carriage type with a square portion on the stem adjacent the head, and one of the members **2** is provided with a square hole to receive this squared portion of the bolt, thus holding the bolt from rotation while the nut is being positioned or removed.

To engage the conductor, each spacer block has formed integrally therewith a seat or jaw **6** to receive the conductor, while a movable jaw **7** is pivotally connected with the spacer block for holding the conductor in its seat. This movable jaw is held in conductor-engaging position by means of a swinging bolt **8**. The upper end of the jaw **6** is forked or provided with a recess **9** to receive the bolt **8**, and a wing nut **10** is threaded on the bolt and engages the back of the jaw **6** as shown particularly in full lines in Fig. 3.

The operation of the clamp is as follows: The movable jaws and bolts occupy the position shown in dotted lines in Fig. 3, and the conductor **10** is then placed in position. The movable jaws are then swung up into the position shown in full line and the bolts **8** engaged in the notches **9**. The nuts **10** are then screwed up to tightly engage the fixed jaws **6** and the line is thus securely held in place. It will be seen that the connection may be readily made by hand if the conductor is dead, or by means of simple tools mounted on insulating poles if the line is alive. It will also be seen that the disconnection of the conductor from the clamp does not require the disconnection of the clamp from the insulator. The fact that the conductor may be readily engaged and disengaged while alive is very advantageous, as it does away with inconveniencing customers through having to shut off the power to make line repairs.

The use of the spacer blocks held in place by a single bolt is very important. In the first place they provide a convenient means for preventing too tight an engagement of the members **1** with the insulator, and thus permitting a slight rotation of the clamp as the line is swayed by the wind. In the next place, a certain amount of rocking of these blocks in the vertical plane is permitted, thus permitting line vibrations to travel by the clamp instead of being completely checked thereby, thus reducing, as stated above, any tendency to burn up or crystallize the conductor through the complete checking of the vibration travel.

The clamps may be made of any suitable material, such, for example, as aluminum, copper or iron, and the choice of material will depend to a considerable extent on the material of which the conductor is formed.

What I claim as my invention is:

1. In an insulator clamp, the combination of supporting means adapted to be positioned about the neck of an insulator; a fixed conductor-engaging jaw carried by said supporting means; a movable conductor-engaging jaw pivotally mounted on said supporting means; a bolt pivotally connected with said movable jaw, the fixed jaw having a notch formed therein in which said bolt may lie, and a nut on said bolt adapted to engage the fixed jaw.

2. In an insulator clamp, the combination of a pair of concaved members adapted to be positioned horizontally about the neck of an insulator; spacer blocks pivotally mounted to rock in the vertical plane between the adjacent ends of said members; means for connecting said members and spacer blocks together; a fixed conductor-engaging jaw carried by each of said spacer blocks; a movable conductor-engaging jaw pivotally mounted on each of said blocks; each of said movable jaws having a bolt pivotally connected therewith, each fixed jaw having a notch formed therein in which the bolt may engage; and a nut on said bolt adapted to engage the fixed jaw.

3. In an insulator clamp, the combination of a pair of concaved members; spacer blocks pivotally mounted to rock in the vertical plane between the adjacent ends of said members; means for connecting said members and spacer blocks together; a fixed jaw carried by each of said spacer blocks, each of said fixed jaws having an upwardly directed conductor-receiving seat formed thereon; a movable conductor-engaging jaw hingedly mounted on said fixed jaw at one side of said seat, a pair of spaced projections extending upwardly from said fixed jaw at the other side of said seat; a bolt pivotally connected with said movable jaw and adapted to be between said projections; and a nut on said bolt adapted to be engaged with said projections to hold said movable jaw in closed position.

4. In an insulator clamp, the combination of a divided clamping member adapted to be positioned horizontally about the neck of an insulator; a spacer block pivotally mounted to rock in the vertical plane between the adjacent parts of said member; means for connecting the parts of said clamping member and spacer block together; a fixed conductor-engaging jaw carried by said spacer block; a movable conductor-engaging jaw pivotally mounted on said block, a bolt pivotally connected with said movable jaw, the fixed jaw having a notch formed therein in which said bolt may lie; and a nut on said bolt adapted to engage said fixed jaw.

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