

T. R. MAUSEN.
TIE CLAMP FOR INSULATORS.
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1,277,237.

Patented Aug. 27, 1918.

Fig. 1.

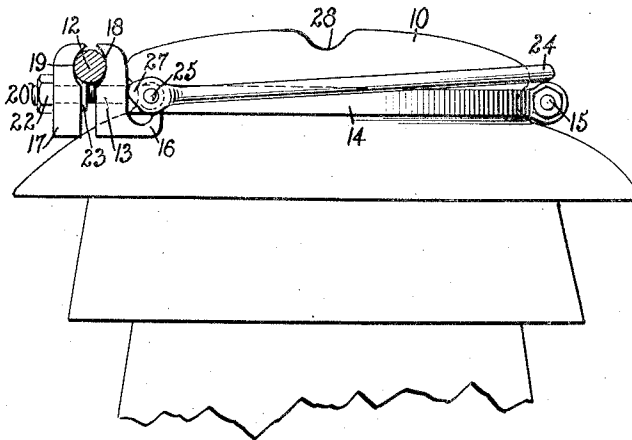


Fig. 4.

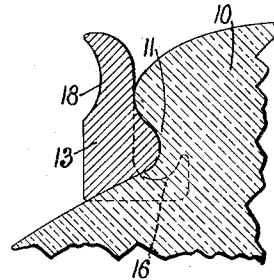


Fig. 2.

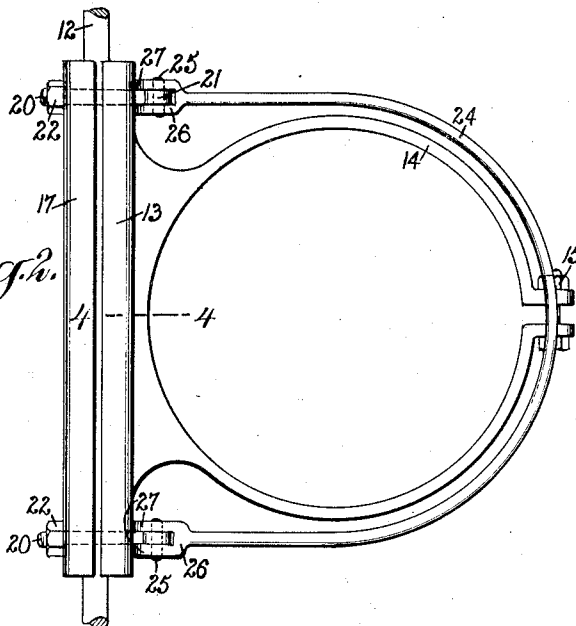


Fig. 3.

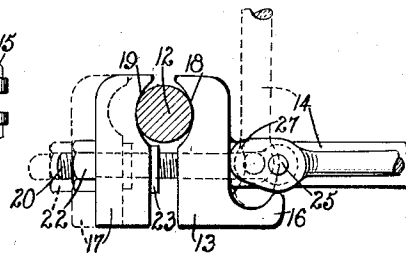
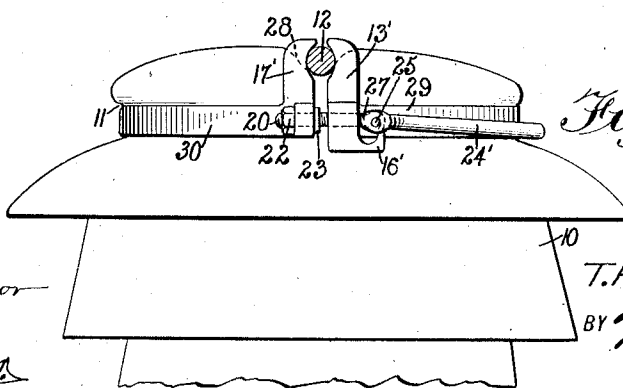


Fig. 5.



WITNESSES

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TIE-CLAMP FOR INSULATORS.

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To all whom it may concern:

Be it known that I, THEODORE R. MAUSEN, a citizen of the United States, and resident of New Brunswick, in the county of Middlesex and State of New Jersey, have invented a new and Improved Tie-Clamp for Insulators, of which the following is a full, clear, and exact description.

This invention relates to electrical appliances and has particular reference to means for easily and securely clamping a high voltage electric wire to a support.

Among the objects of the invention is to provide a clamp comprising relatively stationary and movable jaws for gripping and holding a wire, means being provided to cause one of the jaws to move bodily with respect to the other in both the clamping and unclamping actions.

Another object of the invention is to provide a tie clamp for insulators adapted for manipulation by the operator from a distance as through the use of a pole or the like whereby he may handle the wire while he is remote from the clamp.

A still further object is to provide a clamp upon which the wire is adapted to be supported in loose condition before the clamp is closed or after the clamp is opened, making it possible to replace one wire with another without disturbing the permanent connections between the clamp and the insulator.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a side elevation of my improved clamp in operative position, the wire being shown in section.

Fig. 2 is a plan view of the same.

Fig. 3 is an enlarged detail view of the end of the clamp similar to the view of Fig. 1 and indicating also by dotted lines the relative position of the parts when the clamp is loosened.

Fig. 4 is a vertical transverse sectional detail of the fixed jaw on the line 4—4 of Fig. 2; and

Fig. 5 is a side elevation of a modified form of the insulator.

Referring now more particularly to the drawings I show a conventional form of insulator 10 having an annular groove 11 formed therein around which the high voltage wire 12 is ordinarily bound as by wrapping a heavy binding wire therearound.

Among the objections, however, that I have observed in practice in the use of a binding wire is that it is not only expensive but also exceedingly troublesome and dangerous to the operator. A binding wire, such as commonly used, after being once used must be discarded and lost and there is nothing carried by the insulator to support the electric wire while the binding device is being manipulated. For this reason it is necessary, under ordinary conditions, for the current to be turned off during the interchange of the fasteners or the repair of the binding devices. By my improvement I provide a means whereby the tie clamp when once attached to the insulator becomes a permanent fixture and the act of applying the wire thereto or removing the wire therefrom may be performed almost instantly. This act furthermore requires no special means to support the wire temporarily and can be accomplished without turning off the current, an item of vast importance especially in connection with electric light wires where the demands of the service are such that the current cannot be cut off without occasioning much inconvenience and complaint on the part of the patrons.

The clamp provided for securing the wire to the side of the insulator comprises a relatively fixed jaw 13 having a two-part band 14 adapted to be secured around and in the groove 11, the clamping being effected and made permanent by a suitable binding device such as a bolt 15. The jaw 13 is provided adjacent to each end with hooks 16 shown in this instance as projecting below the plane of the band 14. The jaw is of considerable length relatively whereby a long gripping effect is produced upon the

wire making it possible and practical for a wire to be so firmly gripped at each clamp as to prevent endwise movement of the wire under any circumstances.

5 The other main part or relatively movable jaw is indicated at 17 and is of a length corresponding to the length of the jaw 13. Along the upper portions the two jaws are provided on their inner or opposing faces
10 with complementary grooves 18 and 19 respectively in which the wire is adapted to be seated and gripped. Adjacent to the ends of the jaws and in alignment with the hooks 16 or above the hooks the jaws are
15 provided with registering transverse holes for a pair of anchor bolts 20 each having at one end an eye 21 and at the other end a nut 22. Between the jaws is a nut 23 which coöperates with the nut 22 to fix
20 the movable jaw 17 at a definite position along the several bolts. In other words the bolts 20, by means of the nuts 22 and 23, are fixed positively to the movable jaw 17. Hence by actuating the bolts in either di-
25 rection through the holes in the fixed jaw 13 the movable jaw will be moved in the same way both toward and from the wire and fixed jaw.

24 indicates a bail each end of which is
30 pivoted at 25 to an eye 21 of an anchor bolt. Each pivoted end of the bail is shown in the form of a fork 26 having points 27 projecting beyond the pivots 25 from the main portion of the bail and serving two pur-
35 poses, first, to bear against the inner side of the jaw 13 when force is applied to the bail to set the clamp, the points in such action passing the dead center and thus preventing accidental loosening of the bail and clamp.
40 Secondly, said points are adapted to project down and coöperate with the hooks 16 so that when the bail is thrown up into idle position the bail in effect becomes a lever of the second class so that while the points
45 27 engage the hooks 16 as fulcrums, the pivots 25 acting through the anchor bolts 20 will cause the positive movement of the movable jaw 17 away from the jaw 13. This is a matter of vast importance in prac-
50 tice in view of the fact that rust or corrosion has a tendency to prevent the ready separation of the two parts of the clamp. In setting the clamp it is only necessary for the bail 24 to be swung down upon or
55 toward the band 14 or until the points 27 pass the dead center. The nuts 22 and 23 are so adjusted along the bolts 20 as to insure that the wire will be firmly clamped at this time. This adjustment of the nuts
60 may be done at any time prior to the introduction of the wire. In the event of the interchange of the current wire 12 the operator by the use of a pole or the like may throw
65 the bail up into vertical position as shown in dotted lines in Fig. 3 which will cause

the positive separation of the two jaws, but it is to be noted in this connection that the wire 12, though loose from the clamp jaws, will not drop but will be suspended in idle position upon the bolts 20 and between the two jaws. If the wire is to be removed it may be done with immunity at the end of a long pole and another may be put in its place in a corresponding manner, being received first upon the bolts in position to be
75 clamped when the bail is swung down forcibly into clamping position.

In some instances it is desirable to clamp the wire 12 across the center or in a notch 28 of the insulator. For this purpose I provide a special clamp having jaws 13' and 17' which act upon the wire in a manner similar to that already described. The two jaws are connected by means of bolts 20 extending transversely through registering holes
85 in the two jaws and fixed in place to the movable jaw 17' by adjustment or lock nuts, 22 and 23 as already set forth. The jaw 13' is provided with a band section 29 adapted to fit into one portion of the groove 11 and
90 the other jaw is provided with a band section 30 coöperating with the other side of the groove 11. The bail 24' coöperates through pivots 25 with the ends of the bolts 20 in the same manner as already described
95 and for the two main purposes, namely, first, to set the clamp when the bail is swung down and secondly, to positively separate the jaws when the bail is swung up and the points 27 coöperate with the hooks 16'
100

I claim:

1. The herein described tie clamp comprising relatively fixed and movable jaws, a pair of bolts fixed rigidly to one of the jaws and extending loosely through the
105 other jaw, said jaws having formed on their opposing inner faces a pair of grooves to receive the member to be clamped, and a swinging bail connected to the free ends of the bolts to cause positive movement of the
110 jaws with respect to each other.

2. The combination with an insulator having an annular groove, of a wire tie clamp embracing the insulator and extending into said groove, said clamp comprising
115 a pair of jaws having complementary grooves to embrace the wire, a lever member, and means connecting said lever member to the jaws whereby when the lever is swung around an axis parallel to the wire
120 to be clamped one of the jaws will be moved positively with respect to the other jaw, said connecting means including a pair of bolts fixed rigidly to one of the jaws and passing loosely through the other jaw, the
125 said lever being connected to both of the bolts.

3. In a tie clamp of the character set forth, the combination of a relatively fixed jaw having projecting hooks and holes ex- 130

tending laterally through the jaw adjacent to the hooks, a relatively movable jaw, a pair of bolts extending through said holes and fixed rigidly to the movable jaw, and a
5 bail pivoted to the ends of said bolts, said bail being provided with points on the opposite side of the pivots from the main portion of the bail, said points serving to bear against the fixed jaw when the bail is swung into clamping position and cooperating with 10 said hooks to force the jaws apart when the bail is swung into idle position.

THEODORE R. MAUSEN.