J. T. MORGAN.

TROLLEY CLAMP.

APPLICATION FILED JAN. 17, 1920.

1,360,006. Patented Nov. 23, 1920.

Fig. 1.

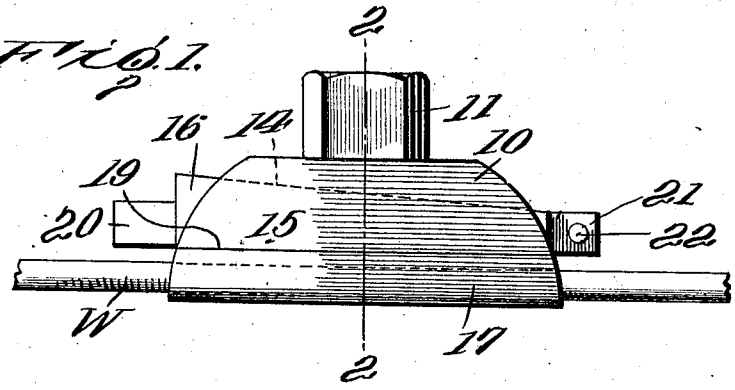


Fig. 2.

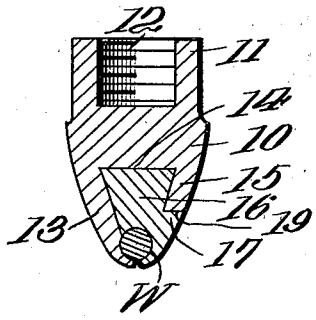


Fig. 3.

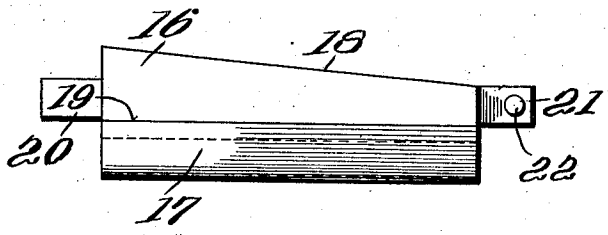


Fig. 4.

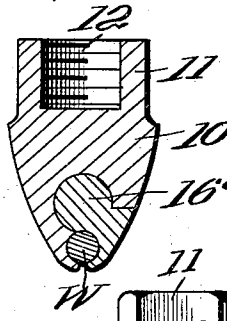


Fig. 5.

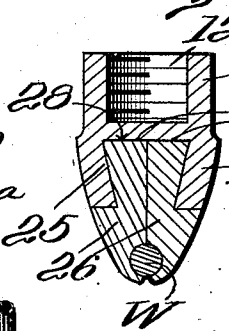


Fig. 6.

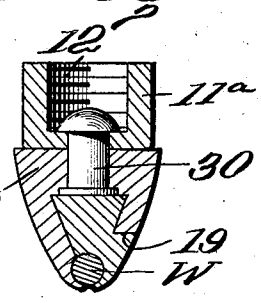
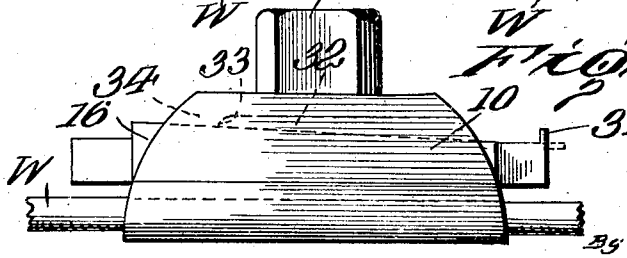


Fig. 7.



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TROLLEY-CLAMP.

1,360,006. Specification of Letters Patent. Patented Nov. 23, 1920.

Application filed January 17, 1920. Serial No. 352,135.

To all whom it may concern:

Be it known that I, JOHN T. MORGAN, a citizen of the United States, residing at Charleston, in the county of Kanawha and State of West Virginia, have invented a new and useful Trolley-Clamp, of which the following is a specification.

This invention is a device of the type employed to support trolley wires and the like.

One of the objects of the invention is to provide a device of the character mentioned having simple means for insuring an efficient gripping of a trolley wire by complemental clamping jaws. A further object is to provide a trolley clamp having jaw members capable of relative longitudinal movement, the relatively movable parts being provided with wedge portions capable of reacting to produce an effective clamping action.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawing:—

Figure 1 is a side elevation illustrating a trolley clamp constructed in accordance with the invention. Fig. 2 is a transverse sectional view on the line 2—2, Fig. 1. Fig. 3 is a detail view of the removable clamp member. Figs. 4 and 5 are sectional views illustrating different modifications. Fig. 6 is a detail sectional view illustrating a modification of the suspension member. Fig. 7 is a side elevation illustrating an additional modification.

Referring to Figs. 1, 2 and 3 of the drawing, 10 designates the main supporting member of a trolley clamp, provided with a suspension member 11, constructed to engage an overhead support. Any suitable engaging means may be employed, but for purposes of illustration a threaded socket 12, is shown. As illustrated in Fig. 2, the supporting member 10 is provided with an integral jaw 13. Said member is also provided with a chamber of dovetail shape in cross section, the upper wall of said chamber being inclined as indicated at 14 in dotted lines Fig. 1. The side walls of the chamber are formed by the jaw 13 and a depending shorter wall 15 having a squared lower edge.

The movable jaw consists of a body 16, provided with a jaw portion, the top surface of said body being inclined as indicated at 18, shaped to coöperate with the wall 14 to obtain a wedging action when the movable jaw is shifted to the right as viewed in Fig. 1. The body 16 is provided with a longitudinal shoulder 19, and its ends are provided with projections 20 and 21. Complete separation of the parts is prevented by a pin 22 in projection 21.

In operation, the member 10 and the inserted movable jaw 16, are positioned over the trolley wire W so that the jaw 13 and jaw portion of member 16 will engage therewith. Force is then applied to the projection 20 to move the clamp member 16 longitudinally (to the right as shown in Fig. 1), the jaw 17 being in engagement with the wire W, the same being guided by the walls of the dovetail chamber and by the lower edge of the wall 15 which engages the shoulder 19 formed on the wedge member. The inclined surfaces 14 and 18 coöperate to produce a wedging action as the clamp member 16 is forced inwardly, thereby firmly and securely retaining said wedge member 16 in place with a tight grip upon the trolley wire. When it is desired to disengage the device from the wire W, pressure is applied to the end 21, and the clamp member is shifted to the left (in the position shown in Fig. 1), until the pin 22 strikes against the body 10. This movement will be sufficient to permit the clamping members to be disengaged from the trolley wire, and yet prevent complete separation of the relatively movable members.

In Fig. 4 is illustrated a slight modification, in which the chamber in the supporting member is of approximately circular cross section, and the clamping member 16^a is made complemental thereto, the chamber and the wedge member being of tapered form to provide the necessary wedging action.

In Fig. 5 is illustrated a second modification, in which the rigid jaw 13 is dispensed with, and the supporting member is provided with a dovetail chamber 25, in which are inserted duplicate clamp members 26, having their upper surfaces 27 inclined to provide a wedging action against the correspondingly inclined surface of the top wall 28 of the chamber.

In Fig. 6 the suspension member 11^a is illustrated as separate from the body 10 and swiveled thereto by means of the bolt 30.

In lieu of employing the pin 22, the projection 21 may be provided with a lug or extension 31, as illustrated in Fig. 7. In this form the main supporting member 10 is cored out, as indicated at 32, to provide a shoulder 33, the under surface of the wall 34 forming said shoulder, being inclined to coöperate with member 16 to produce the desired wedging action. In practice, the member 16 is inserted into the member 10 and the lug 31 turned up from the dotted line position to the full line position of Fig. 7. By this arrangement the member 16 may be moved to the left until the lug 31 comes into contact with the shoulder 32, thus permitting ample movement for the positioning of the jaws over a wire and yet preventing separation of said members.

From what has been said it will be readily understood that one or both of the gripping parts or jaws act as wedges, thereby insuring a maximum gripping action on the wire, and the whole comprises a simple unitary device which may be readily applied to or disengaged from a wire. Being made up of few parts it is not liable to readily get out of order. Another advantage is that by using a piece of wood for a hammer, live trolley wires may be inserted in the clamp.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:—

1. A trolley clamp of the character described comprising a supporting member, and wire-clamping jaws, said jaws having means coöperating with each other for frictionally retaining them in gripping relation.

2. A trolley clamp of the character described comprising a supporting member provided with a wire-clamping jaw, and a second wire-clamping jaw movably engaging the supporting member, said second jaw and said supporting member having complemental coacting portions for frictionally retaining the jaws in gripping relation.

3. A trolley clamp of the character described comprising a supporting member provided with a wire-clamping jaw, and a second wire-clamping jaw movably engaging the supporting member, said supporting member having means coöperating with said second jaw for retaining the latter in gripping relation.

4. A trolley clamp of the character described comprising a supporting member provided with a wire-clamping jaw, and a second wire-clamping jaw movably engaging said supporting member, said second jaw and said supporting member having complemental inclined surfaces positioned to co-act to produce a wedging action.

5. A trolley clamp of the character described comprising a supporting member provided with a chamber having an inclined top wall and a rigid wire clamping jaw, and a slidable wire-clamping jaw having an inclined surface positioned to co-act with the inclined wall of said chamber to produce a wedging action.

6. A trolley clamp of the character described comprising a supporting member provided with a chamber having an inclined top wall and a rigid wire-clamping jaw, and a slidable wire-clamping jaw having an inclined surface positioned to coact with the inclined wall of said chamber to produce a wedging action, said slidable jaw having projections on its ends to receive the force applied in placing the slidable jaw into and out of engaging position.

7. A trolley clamp of the character described comprising a supporting member provided with a rigid jaw and a chamber, one wall of the chamber being formed by said jaw the opposite wall having a squared edge, and a slidable jaw having a shoulder positioned to engage said squared edge, said slidable jaw and said chamber having complemental means for frictionally retaining the jaws in gripping relation.

8. A trolley clamp of the character described comprising a supporting member provided with a rigid jaw and a chamber, one wall of the chamber being formed by said jaw the opposite wall having a squared edge, a slidable jaw having a shoulder positioned to engage said squared edge, said slidable jaw and said chamber having complemental inclined surfaces disposed to establish a wedging engagement.

9. A trolley clamp of the character described comprising a supporting member provided with a rigid jaw and a chamber, one wall of the chamber being formed by said jaw, a slidable jaw located within said chamber, said sildable jaw and said chamber having inclined surfaces positioned to co-act to produce a wedging action, the ends of said slidable jaw being provided with projections, and means for normally preventing complete separation of said slidable jaw and said supporting member.

10. A trolley clamp of the character described comprising a supporting member provided with a wire-clamping jaw, and a second wire-clamping jaw movably engaging said supporting member, said second jaw and said supporting member having complemental inclined surfaces positioned to co-act to produce a wedging action, and means for normally preventing complete separation of said supporting member and the second wire clamping jaw.

11. A trolley clamp of the character de-

scribed comprising a supporting member provided with a wire clamping jaw, and a second wire clamping jaw movably engaging the supporting member, said second jaw and said supporting member having complemental means for frictionally retaining the jaws in gripping relation, said second jaw having a stop positioned to coöperate with the supporting member to limit relative movement of said member and the second jaw in one direction.

In testimony whereof I have hereunto set my hand.

JOHN T. MORGAN.