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M. W. MANZ ET AL.
SUPPORT FOR CONDUCTORS,
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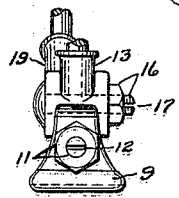
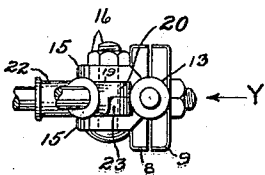
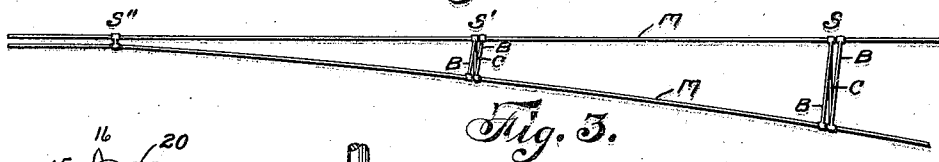
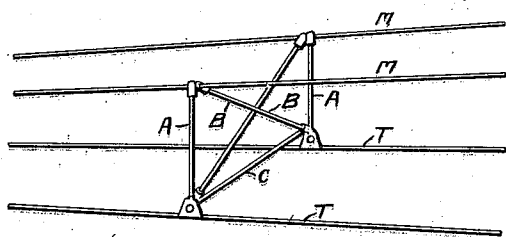
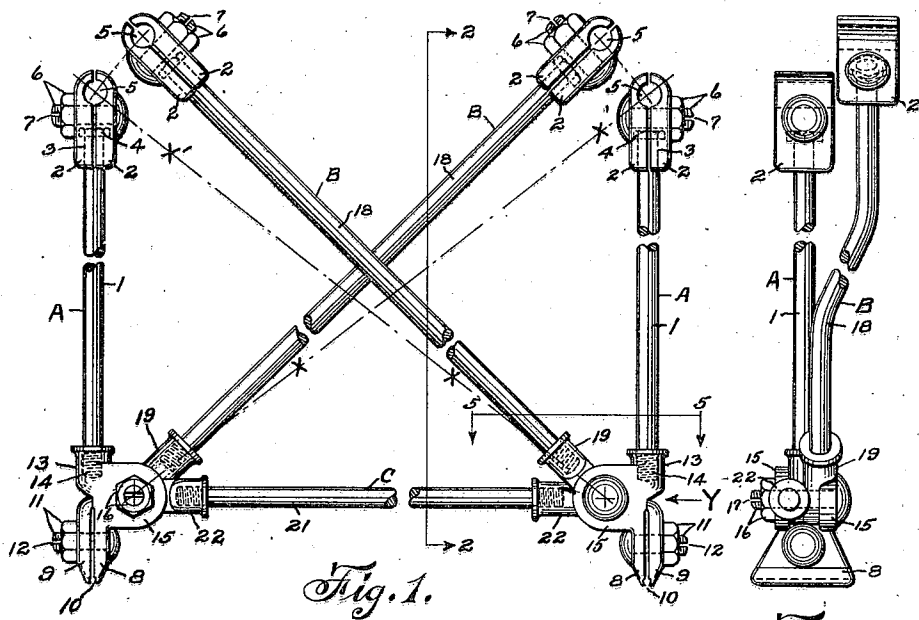


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

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THE OHIO BRASS COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF NEW
JERSEY.

SUPPORT FOR CONDUCTORS.

Application filed March 21, 1922. Serial No. 545,555.

To all whom it may concern:

Be it known that we, MERRILL W. MANZ and SAMUEL S. MATTHES, citizens of the United States of America, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in a Support for Conductors, of which the following is a specification.

Our invention relates to a support for conductors and relates more particularly to the supporting of trolley wires from catenary or messenger cables.

Our invention has for its object the supporting of trolley wires from messenger cables and maintaining the trolley wires and messenger wires in a predetermined spaced relation and resides in the construction, combination and relation of the various parts more fully set forth and described herein.

In the drawings accompanying the specification—

Fig. 1 is a view in elevation looking in a longitudinal direction with respect to the trolley wires.

Fig. 2 shows a side view in elevation of Fig. 1.

Fig. 3 is a schematic view looking down upon a pair of catenary cables below which are the trolley wires supported by three of my devices indicated at S, S' and S".

Fig. 4 is a schematic drawing showing more clearly the method in which the device S of Fig. 3 is used.

Fig. 5 is a top view of the trolley clamping member taken on the line 5—5 of Fig. 1.

Fig. 6 is an end view of Fig. 5 looking in the direction indicated by the arrow Y or of the clamping element in Fig. 1 looking in the direction Y.

While our device is particularly adapted to the supporting of the trolley conductors from catenary cables at a point where one trolley wire diverges from another as shown in Fig. 3, still it is not confined to such a limited purpose, but can be made use of in various constructions in combinations of overhead catenary cables and trolley conductors, as for instance, it may be desired to support two parallel trolley wires for many miles suspended from their individual catenary cables and maintained a predetermined distance apart.

In our preferred construction we employ the vertical elements A—A which suspend

the trolley conductor directly from the messenger cable, the diagonally disposed elements B—B for maintaining one of the trolley conductors in a fixed relation to the messenger cable of the opposite conductor and the element C for maintaining the trolley conductors in a definitely spaced relation.

The elements A—A each comprise the supporting rod 1 to the upper end of which is secured a two part clamp comprising the clamping members 2—2 provided with socket means 3 to engage the enlarged head 4 of the member 1 and also provided with a recess 5 to receive and grip a catenary cable. The clamping members 2—2 are held in a clamped position upon the messenger cable and the rod 1 by means of the clamping bolt and nut 6. The projecting end of the bolt adjacent the nut is split at 7 so that the end of the bolt can be easily spread to lock the nut against loosening. To the lower end of the supporting member 1 is secured a two part clamp comprising the members 8 and 9 provided with means 10 at their lower adjacent edges to receive and grip a trolley conductor. The clamping members are held together by means of the bolt and nut 11 having a slot 12 in one end of the bolt for locking the nut in place as already described. The member 8 at its upper end is provided with a socket 13 having, as shown, a threaded recess 14 to receive the threaded end of the supporting rod 1. The clamping member 8 is also provided with a pair of spaced transversely projecting lugs 15 having a recess to receive a clamping bolt and nut 16 likewise provided with a slot 17 whereby the bolt and nut are locked together.

The diagonal bracing and supporting elements B—B each comprise the member 18 to the upper end of which is attached clamping means as shown secured to the upper end of the supporting rod 1 and constructed in like manner as shown and indicated by the numerals. The members B—B are offset as shown in Fig. 2 in order to allow the clamping members thereon to rest alongside the clamping members on the supporting rods 1—1 and to grip the messenger cable. To the lower end of each rod 18—18 is secured a socket member 19 having one end internally threaded to receive the threaded end of the rod 18 and the lower end of the socket 19 is provided with a lug 20 adapted

to be positioned between the lugs 15—15 and held in pivotal position by means of the bolt and nut 16.

Under normally installed conditions the axes of the elements B—B coincide with the dotted lines X—X', but in order to show the details of construction the elements B—B are shown as moved out of normal position about their pivotal point 16.

The element C comprises the spreader member 21 to each end of which is secured a socket member 22 provided at one end with a threaded recess to receive the threaded end of the rod 21, and also provided with a lug 23 to be positioned between the lugs 15—15 and held in pivotal position by the bolt and nut 16.

In installing our invention the clamping members at the upper end of the elements A are secured to the messenger cables M—M respectively and the clamping members at the upper ends of the elements B—B are secured to the cables M—M respectively along side of the clamps on the members A—A. The trolley conductors T—T are then secured between the jaws 8 and 9. This construction gives a rigid, simple and self-contained device for supporting the trolley wires from their individual catenary cables in a maintained spaced relation. Combinations of a similar nature have been made where the various members A, B and C do not form a catenary device, but in our arrangement we have so constructed the lower clamping member 8 as to be able to secure thereto one end of each of the rods 1, 18 and 21 and in adjustable relation thereto. This gives us a very simple arrangement which has many obvious advantages over a similar arrangement where the various parts are not united in a unitary construction.

There are obviously many variations which can be made in the construction and arrangement of the invention herein disclosed and shown which will suggest themselves to those skilled in the art and, therefore, we do not wish to be limited other than by our claims.

We claim:—

1. A transmission system comprising a pair of messenger cables, a pair of conductors positioned below the messenger cables and means to suspend the conductors from the cables and maintain the conductors and cables in a predetermined relation; the suspension means comprising a means to grip each conductor, and held in spaced relation by a member pivotally secured thereto, each gripping means having a means to suspend it from the messenger cables and a diagonally projecting bracing member from each gripping means and engaging one of the messenger cables.

2. A transmission system comprising a pair of messenger cables, a pair of conduc-

tors positioned below the messenger cables and means to suspend the conductors from the cables and maintain the conductors and cables in a predetermined relation; the suspension means comprising a means to grip each conductor, and held in spaced relation by a member secured thereto, each gripping means having a means to suspend it from the messenger cables and a projecting bracing member from each gripping means and engaging one of the messenger cables.

3. A transmission system comprising a plurality of messenger cables, a plurality of conductors positioned in a plane below the messenger cables and means to suspend the conductors from the cables; the suspension means comprising gripping means to be attached to each conductor, each gripping means provided with means to suspend it from one of the messenger cables and having means for the attachment of a pair of members one to connect with the oppositely disposed gripping means to maintain separation and the other for attachment to one of the messenger cables for suspending and bracing the combination.

4. A transmission system comprising a plurality of messenger cables, a plurality of conductors and means to suspend the conductors from the messenger cables; the suspension means comprising gripping means to be attached to each conductor, detachable means connecting oppositely disposed gripping means to maintain spaced relation, detachable means for securing each gripping means to one of the messenger cables and each gripping means provided with detachable means for connecting it to the other messenger cable.

5. A transmission system comprising a plurality of messenger cables, a plurality of conductors and means to suspend the conductors from the cables; the suspension means comprising a gripping means to be attached to each conductor and means to maintain the conductors in spaced relation and means secured to each gripping means to secure the gripping means to each of the messenger cables.

6. A transmission system comprising a plurality of messenger cables, a plurality of conductors and means to suspend the conductors from the messenger cables; the suspension means comprising a gripping member secured to each conductor and suspending and bracing means secured to each gripping member and to each messenger cable.

7. A transmission system comprising a plurality of messenger cables, a plurality of conductors and means to suspend the conductors from the messenger cables; the suspension means comprising a gripping member attached to each conductor, each gripping member provided with means rigidly secured thereto for securing the gripping

member to one of the messenger cables and means pivotally secured thereto for securing the gripping member to the other conductor.

8. A suspension device for electric conductors comprising a two part clamping member having means to engage and grip the conductor, means to secure the clamping member to a pair of overhead supports comprising a pair of projecting members, one of the projecting members having one end rigidly secured to one part of the clamping member and having means at the other end to engage and grip one of the overhead supports and the other projecting member pivotally secured to the same part of the clamping member and having means at the other end to engage and grip the other overhead support and means to secure the last named projecting member to the clamping member.

9. A suspension device for electric conductors comprising a clamping member having means to engage and grip the conductor, means to secure the clamping member to a pair of overhead supports comprising a pair of projecting members, one of the projecting members having one end rigidly secured to the clamping member and having means at the other end to engage and grip one of the overhead supports and the other projecting member pivotally secured to the clamping member and having means at the other end to engage and grip the other overhead support and means to pivotally secure the last named projecting member to the clamping member.

10. A suspension device for electric conductors comprising a member having means to engage and grip the conductor, means to secure the clamping member to a pair of adjacent overhead supports and means to maintain spaced relation with an adjacently supported conductor.

11. A suspension device for electric conductors comprising a member having means to engage and grip the conductor, means to secure the clamping member to a pair of adjacent overhead supports and means to maintain spaced relation with a conductor supported from the same overhead supports.

12. A suspension device for an electric conductor comprising a member having means of attachment to the conductor, means to suspend the member from an overhead support, means to engage another overhead support to brace the member and means to maintain the member in spaced relation to an adjacent conductor.

13. A suspension device for electric conductors comprising a member arranged to be attached to a conductor, means to engage an overhead support and maintain the member in spaced relation thereto, means to engage another overhead support and maintain the member in spaced relation thereto and means to engage an adjacent conductor

and maintain the member in spaced relation thereto.

14. A suspension device for electric conductors comprising a member arranged to be attached to a conductor, means to engage an overhead support and maintain the member in spaced relation thereto, means to engage another overhead support and maintain the member in spaced relation thereto and means to engage an adjacent conductor and maintain the member in spaced relation thereto, all of the spacing means having an attachment to the member.

15. A clamping device for supporting a conductor relative to a pair of overhead supports and to another conductor comprising a member arranged to engage the first named conductor, means attached to the member and having means to engage one of the overhead supports, means attached to the member and provided with means to engage the second mentioned conductor, and means to engage the other overhead support and having an adjustable attachment to the member for varying its angular relation relative to the other two means.

16. A clamping device for supporting a conductor relative to a pair of overhead supports and to another conductor comprising a member arranged to engage the first mentioned conductor, means attached to the member for securing the member to one of the overhead supports, means attached to the member to secure the member to the other overhead support and means attached to the member to secure the member in spaced relation to the second mentioned conductor, the attachment of each of the last two mentioned means to the member permitting angular adjustment between each of the means and the first mentioned means.

17. A clamping device for supporting a conductor relative to a pair of overhead supports and to another conductor comprising a member arranged to engage the first named conductor, means attached to the member and having means to engage one of the overhead supports, means attached to the member for attachment to the other overhead support and means attached to the member to engage the second mentioned conductor, the attachment of the last means to the member permitting the member to vary its angular relation relative to the other two members.

18. The combination with a pair of messenger cables of means for supporting therefrom a pair of conductors, said means comprising a two part clamping member secured to each conductor, a suspension member attached to each clamping member, a two part clamp secured to each suspension member to engage one of the messenger cables, means for securing the two part clamp to the suspension member and to the messenger cable,

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a member attached to each of the conductor clamping members and having means for attachment to the other messenger cable adjacent the two part clamp thereon and a
5 common spacing member secured to the two part clamping members to maintain the conducting members a predetermined distance apart.

19. A trolley conductor support compris-

ing a two part clamp to engage the conductor and means on one of the parts whereby three attachments can be made thereto for suspending the support and bracing against freedom of movement.

In testimony whereof we affix our signatures.

MERRILL W. MANZ.
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