C. H. ROBERTSON.

TROLLEY LINE HANGER.

APPLICATION FILED DEC. 26, 1914.

1,133,403. Patented Mar. 30, 1915.

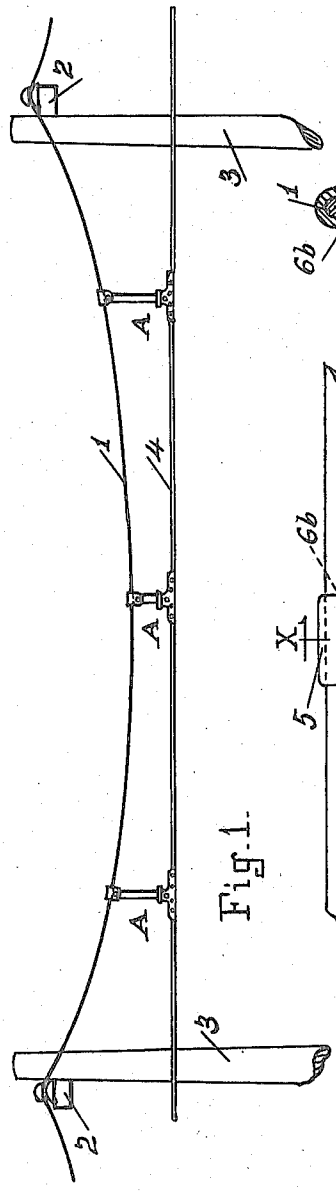


Fig. 1.

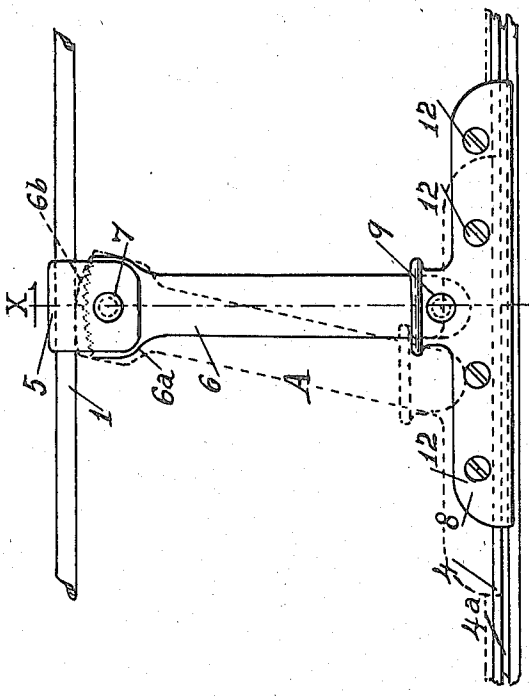


Fig. 2.

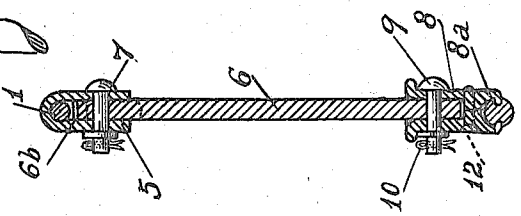


Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES H. ROBERTSON, OF PEORIA, ILLINOIS.

TROLLEY-LINE HANGER.

1,133,403. Specification of Letters Patent. Patented Mar. 30, 1915.

Application filed December 26, 1914. Serial No. 879,192.

To all whom it may concern:

Be it known that I, CHARLES H. ROBERTSON, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented a new and useful Trolley-Line Hanger, of which the following is a specification.

The invention relates primarily to electric trolley lines of the well known catenary construction.

The purpose of the invention is to provide improved connecting devices adapted to connect the trolley wire with and support it on the catenary or messenger wire, said connecting devices being so constructed and arranged that they will normally be movable on the messenger wire responsive to the contraction or expansion of the trolley wire and in case of breakage of the trolley wire will instantly and firmly grip the messenger wire to prevent the sliding of the connecting devices on the messenger wire, thereby preventing any considerable longitudinal movement of the sections of the broken trolley wire relative to the messenger wire, thus averting the grounding and consequent burning of considerable lengths of the trolley wire.

The invention is illustrated in the annexed drawing, to which reference is hereby made and is hereinafter particularly described and finally recited in the claims.

Figure 1 is a diagrammatic view of a section of a trolley line embodying my invention; Fig. 2 is a side elevation of one hanger and connections; and Fig. 3 is a vertical section on the line X X of Fig. 2.

Similar reference characters designate like parts in the different views.

The catenary or messenger wire 1 is supported on mast arms 2, which are rigidly connected with suitably spaced poles or posts 3 in line with each other. Hangers, designated as a whole by the letter A, are connected with the messenger wire 1 as hereinafter described. There will preferably be three hangers between each pair of poles, a relatively short central hanger being at the lowest point of the catenary and midway between the poles, and longer hangers, on each side of the central hanger, as shown. The hangers support the trolley wire 4 in a horizontal position. The hangers are preferably malleable castings and are all alike so a description of one will suffice for all.

A hanger of preferable form comprises a box loop 5 having parallel sides spaced apart to accommodate the messenger wire 1 and the suspension bar 6. A bolt 7 pivotally connects the bar 6 with the box loop 5. The upper part 6^a of the bar 6 is broadened and curved and provided with serrations 6^b as shown. When the suspension bar 6 is in a vertical position the serrations 6^b will be disengaged from the messenger wire 1 and the box loop 5 will be loose on the wire. The lower end of the suspension bar 6 is pivotally connected with the jaws 8 by a bolt 9, kept is placed by a cotter pin 10. The jaws 8 are connected by screws 12 and have internal longitudinal flanges 8^a adapted to engage in longitudinal grooves 4^a in the trolley wire 4. The flanges 8^a serve to support the trolley wire so that the lower part of the wire will present a smooth continuous surface with which the trolley running on the wire will contact.

Prior to my invention trolley lines employing catenary construction have used hangers free at all times to slide on the messenger wire. A serious objection to that construction is that in case of the breaking of the trolley wire the sections thereof, falling away from each other, cause the hangers connected with the sections respectively to slide with accelerating speed in opposite directions on the messenger wire, thus causing looping of the trolley wire between its supports and the accumulation of excessive weight on one or more of the hangers, resulting in the breaking of the hanger or hangers, or the breaking of the messenger wire; and this effect is cumulative, so that a single breaking of the trolley wire will often result in the breaking of a number of hangers, the breaking or dismounting of a number of sections of the messenger wire and the grounding of considerable lengths of the trolley wire, thus disabling the system and enhancing the cost of repair and replacement. A prime purpose of the present invention is to obviate this objection.

The operation of the mechanism is as follows: Immediately upon the breaking of the trolley wire its parted sections will pull on the hangers with which they are respectively connected to cause the right-hand hanger to oscillate to the right and grip the messenger wire to stop further movement of the right hand section and to cause the left hand hanger to oscillate to the left and grip the messenger wire to stop fur-

ther movement of the left-hand section; thus preventing sagging or looping of the trolley wire and the accumulation of excessive weight on any hanger or on any part of the messenger wire.

I do not restrict my claims to the precise construction shown and described since it is obvious that various minor modifications of the construction may be employed within the scope of my invention.

Having fully described my invention, I claim as new:

1. A hanger comprising wire-supporting means adapted to support a trolley wire; a suspension device pivotally connected with said wire-supporting means and having a part effective to grip a messenger wire upon the oscillation of the suspension device; means for supporting said suspension device on a messenger wire; and means pivotally connecting said suspension device with the means supporting it on the messenger wire.

2. In an apparatus of the class described, the combination of a messenger wire; loops mounted on the messenger wire; suspension devices pivotally connected with the loops respectively and each having a member adapted to grip the messenger wire upon the oscillation of said suspension devices; and a trolley wire supported by said suspension devices.

3. In an apparatus of the class described, the combination of a messenger wire; loops normally loose on the messenger wire; suspension devices pivotally connected with the loops respectively and each having a member adapted to grip the messenger wire upon the oscillation of the suspension devices; and a trolley wire connected with said suspension devices.

4. In an apparatus of the class described, the combination of a messenger wire; a trolley wire; hangers normally loose on the messenger wire and connected with the trolley wire and each having a member effective to grip the messenger wire upon the parting of the trolley wire.

In witness whereof I have hereunto signed my name, at Springfield, Illinois, this 19th day of December, 1914.

CHARLES H. ROBERTSON.

Witnesses:
S. ALLYNN TROXELL,
W. C. K. KENDALL.