

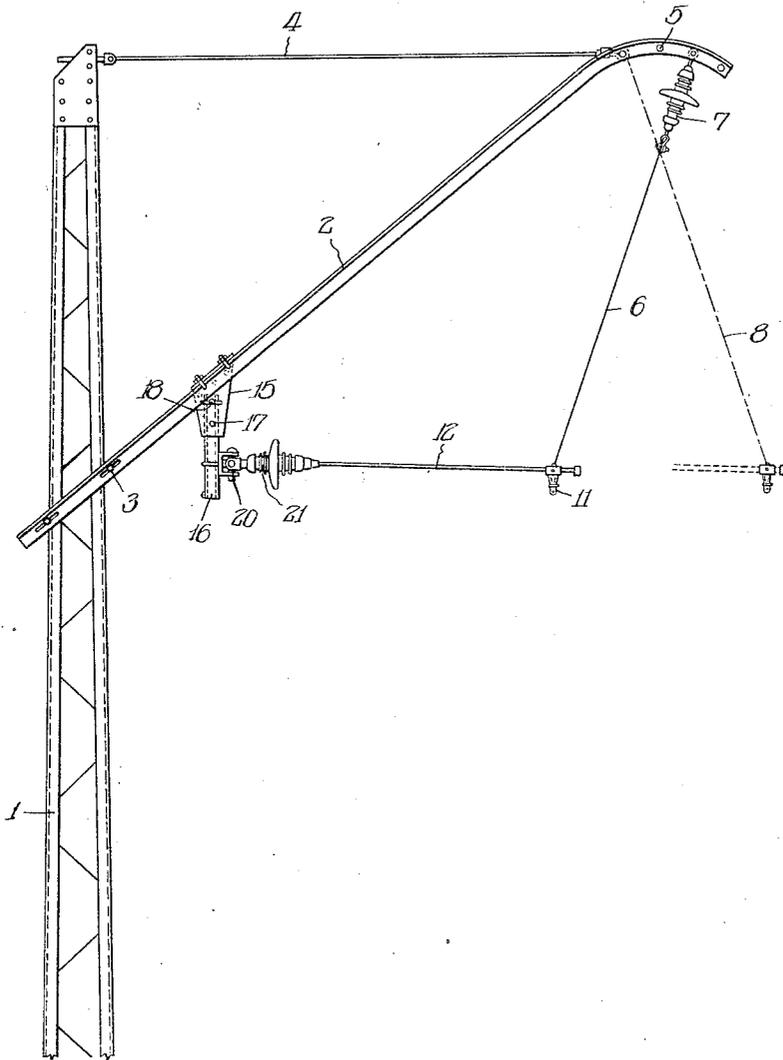
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CATENARY SUSPENSION SYSTEM

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UNITED STATES PATENT OFFICE.

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CATENARY SUSPENSION SYSTEM.

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My invention relates to catenary suspension systems and it has particularly relation to a new improved mounting for the steadying rod for supporting overhead trolley wires, and the like.

The objects and novel features of the invention will be best understood from the drawings, the single figure of which is an elevational view of a trolley-conductor support exemplifying the invention.

In the construction of overhead catenary systems, in particular, in the overhead trolley-wire supporting systems, bar-type insulators are often used for insulating the contact wire from the supporting pole. In order to prevent injury to workmen that are on the pole, it is important that the insulators should be a certain distance from the pole so as to prevent accidental injury by contact with the high-tension members of the trolley support. On the other hand, the bar-type insulators should be arranged as near as possible to the point about which the steadying rod is to be pivoted in order to reduce, as much as possible, the bending stresses in the insulator.

The foregoing requirements presented a source of difficulties for the practical construction of proper trolley wire supporting systems inasmuch as the pivot point has to be arranged at a certain distance from the pole, and its position is required to be, as far as possible, independent from the height and the inclination of the bracket arm on which the pivotal mounting of the steadying rod is supported.

According to the invention the foregoing difficulties are avoided by making the rod support in the form of a carrier longitudinally adjusted on the inclined trolley bracket, the carrier having a downwardly projecting supporting rod having a pivotal movement in the plane of the bracket arm. On said supporting rod is longitudinally adjustable a pivotal mounting member around which the steadying rod may be swung in a direction transverse to the supporting rod.

An arrangement of such character, as applied to an electric railway system in which the electric trolley wire is supported from poles disposed on one side of the track, is shown in the drawing. At a proper point of the height of the poles 1 is secured a bracket arm 2 which is held in inclined upwardly projecting position by means of bolts

3 and a tension rod 4. The upper end of the bracket arm is of arcuate shape and has a plurality of eye holes 5 from which may be suspended a trolley wire hanger 6, the hanger being insulated from the bracket arm by means of a bar-type insulator 7. The bar-type insulator 7 is preferably mounted next adjacent to the arcuate bracket arm portion in order to reduce, as much as possible, the mechanical strain on the insulator and on the bracket arm. The arcuate construction of the upper bracket arm portion is particularly suitable for mounting the hanger so as to cover a wide range of positions of the trolley wire, as shown by the dotted line 8 which indicates another position in which the hanger may be mounted.

In order to support the trolley wire 11, which is held at the end of the hanger 6, at a particular point in space above the track, a substantially rigid steadying rod 12 is mounted on the inclined bracket arm 2, the end of the steadying rod holding the trolley wire support.

A particular feature of my invention, pointed out above, is the detailed arrangement of the steadying rod mounting on the inclined bracket arm 2. This mounting comprises a carrier member 15, which may have the form of a gusset plate, arranged to be adjustably clamped or otherwise secured along the inclined bracket arm 2. Pivotaly mounted on the carrier member 15 is a downwardly projecting supporting rod 16, arranged to be swung around a pivot 17 in the plane of the bracket arm. The position of the supporting rod 16 may be fixed at any particular angle with respect to the bracket arm 2 by means of a lock bolt 18 arranged in a suitable slot in the carrier plate 15. Vertically adjustable on the supporting rod 16 is a universal joint connection 20 which holds the bar insulator 21 for insulatingly supporting the steadying rod 12.

The foregoing adjustable mounting of the universal joint support of the steadying rod makes the position of the pivotal support of the steadying member, both vertically and horizontally practically independent of the position of the bracket arm 2.

I claim as my invention:

I. In an overhead trolley wire suspension system, an inclined upwardly projecting arm, means for supporting a trolley wire

from said arm, a steadying rod for laterally supporting said trolley wire from said arm, and means for adjustably mounting said rod on said arm, said means comprising a carrier member adjustably secured to said arm, a downwardly projecting supporting member mounted on said carrier member for swinging movement in the plane of said projecting arm, and a pivotal mounting for said steadying arm longitudinally adjustable on said downwardly projecting member.

2. In an overhead catenary suspension system, an inclined arm constituting a part of a catenary support, a carrier member longitudinally adjustable on said arm, a steadying rod for laterally supporting said catenary system from said carrier member, and means associated with said carrier member for permitting vertical and lateral adjustment of the point of support of said steadying rod on said carrier member.

3. In an overhead trolley wire suspension

system, an inclined upwardly projecting arm, means for suspending a trolley wire from said arm, a steadying rod for laterally supporting said trolley wire from said arm, the end portion of said steadying member supported on said arm having a bar-type insulator for insulating said rod from said arm, and means for adjustably mounting the insulating end of said steadying rod, said means comprising a carrier member longitudinally adjustable on said arm, a downwardly projecting supporting rod extending from said carrier member having means for adjustably swinging the same in the plane of said arm, and a universal joint connection on the end of said insulator arranged to be longitudinally adjustable on said supporting rod.

In testimony whereof, I have hereunto subscribed my name at Munich, Germany, this 11th day of November, A. D. 1926.

JOHANNES HOLZEL.