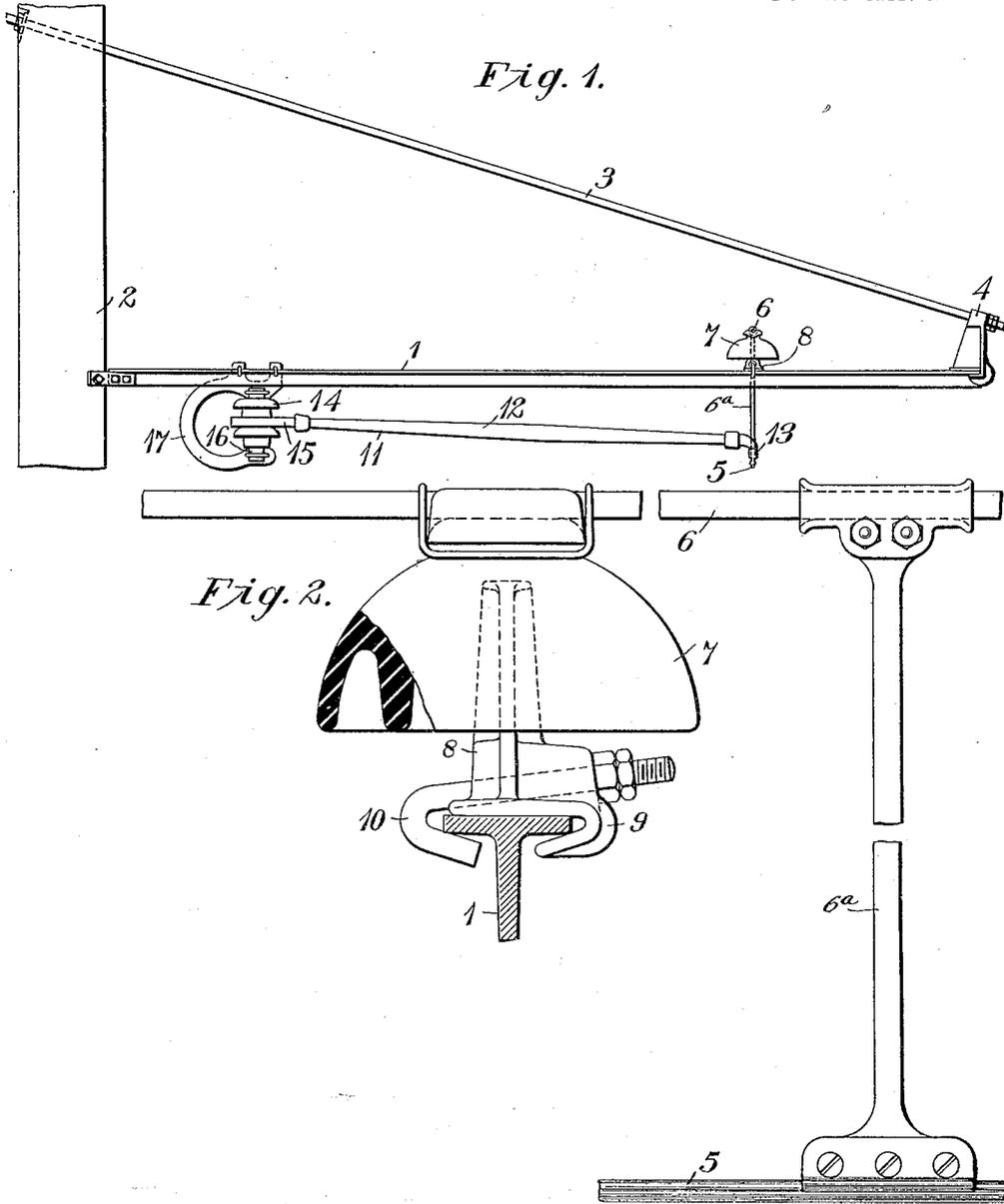


T. VARNEY.
OVERHEAD ELECTRIC LINE CONSTRUCTION.
APPLICATION FILED APR. 5, 1907.

1,138,701.

Patented May 11, 1915.
2 SHEETS—SHEET 1.



WITNESSES:
Fred H. Miller
R. J. Carlson

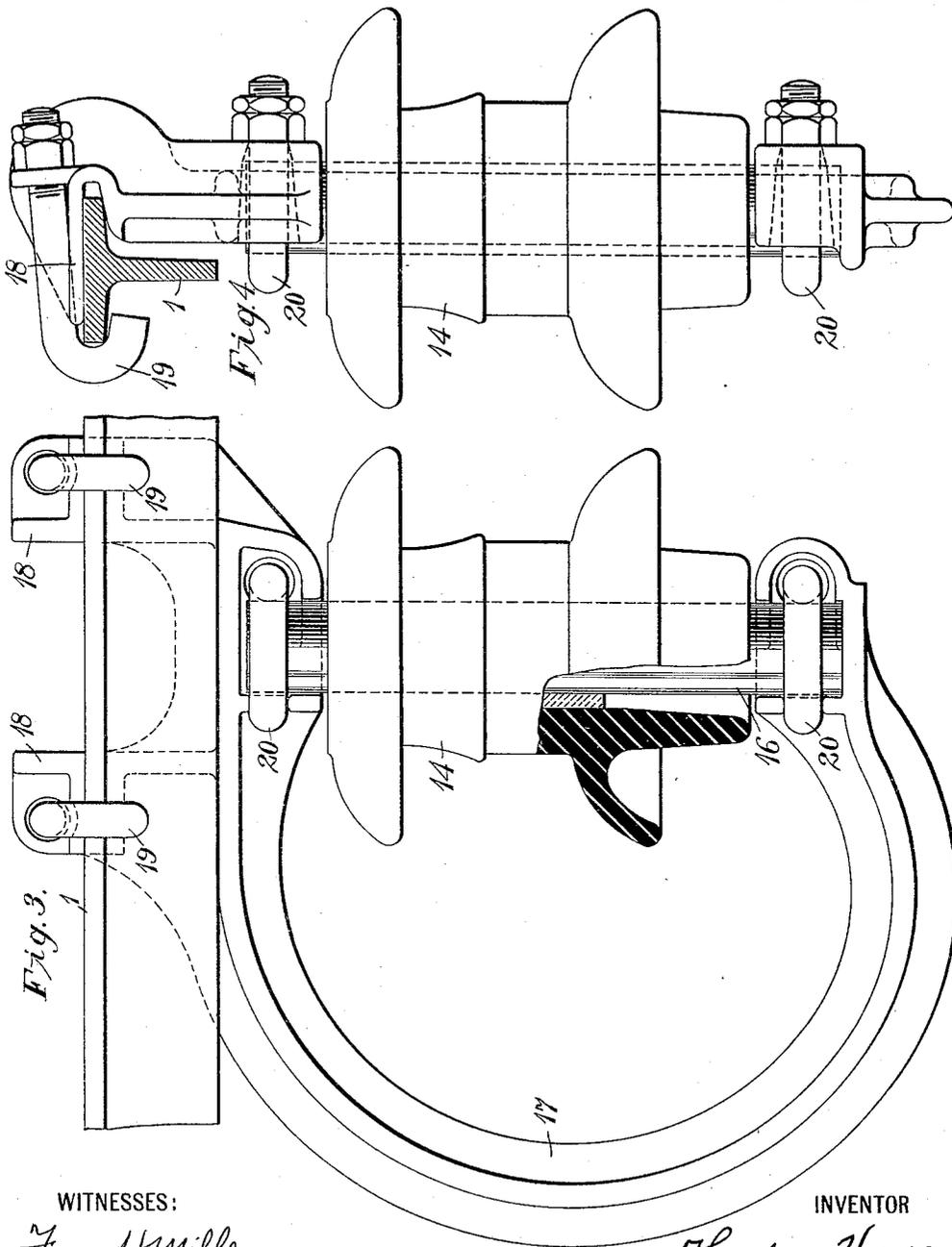
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UNITED STATES PATENT OFFICE.

THEODORE VARNEY, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

OVERHEAD ELECTRIC-LINE CONSTRUCTION.

1,138,701.

Specification of Letters Patent.

Patented May 11, 1915.

Application filed April 5, 1907. Serial No. 366,501.

To all whom it may concern:

Be it known that I, THEODORE VARNEY, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Overhead Electric-Line Construction, of which the following is a specification.

My invention relates to apparatus for bracing and insulating over-head line conductors and it has for its object to provide simple and effective means for supporting electric conductors, particularly against lateral movement, that shall be adapted for use with the relatively high as well as low-voltage conductors. My supporting device is particularly useful in connection with a catenary form of electric railway trolley line structure comprising one or more messenger wires or cables from which the trolley conductor is suspended.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of a trolley pole and cross arm provided with a bracing device constructed in accordance therewith. Figs. 2, 3, and 4 are detail views of the structure shown in Fig. 1.

Referring to the drawings, a substantially horizontal arm 1 is attached, at its inner end, to a pole 2 and is supported by means of a tie-rod 3 which connects an end bracket 4 mounted on the arm 1 to the pole 2. A trolley conductor 5 is suspended from a messenger cable 6 by means of hangers 6^a and the messenger cable is supported by an insulator 7 that is adjustably mounted on the arm 1. The insulator 7 may be of a well known petticoat type and is mounted on a bracket or casting 8 which is adjustably clamped to the arm 1 by means of a hook projection 9 and a bolt 10, the inner end of which is bent into the form of a hook so that it acts in conjunction with the projection 9. In order to prevent lateral movement of the trolley conductor 5, a brace 11 is provided which comprises an arm or rod 12, the outer end of which is secured to the trolley conductor by any convenient means, such as a clamp 13, and the inner end of which is secured to a sleeve insulator 14 by means of a two-part collar clamp 15.

The insulator 14 is mounted upon a rod or tube 16 in a well known manner and the ends of this tube are supported by a clevis

or horse shoe bracket 17 that is adjustably mounted on the arm 1. The arrangement of parts is such that the center line of the tube 16 is substantially vertical and the insulator 14 is supported entirely below the arm 1. In this way, longitudinal movement of the trolley conductor 5 is permitted, since the insulator 14 and its tube, may be rotatably adjusted. The horse shoe bracket 17 is provided with a pair of hook projections 18 which are held in engagement with the arm 1 by means of bolt hooks 19. Loop bolts 20 may be advantageously employed for securing the tube 16 to the arms of the horse shoe bracket 17, after a suitable adjustment has been effected.

The arm 1, as illustrated in the drawings, is of T-shape in cross section, which is well adapted for use in bracket construction by reason of its high rigidity relative to its weight per unit of length.

Supporting arms of different cross section may be employed, however, if desired and the bracing device of my present invention may be readily adapted for use with various forms of bracket arms and also with such bridge structures as are often employed for supporting trolley conductors for multi-track railway systems.

I claim as my invention:

1. A steadying device for electric line conductors comprising a substantially horizontal arm, a horse shoe bracket adjustably mounted thereon, an insulator supported by the horse shoe bracket, and an arm or rod interposed between the insulator and the line conductor.

2. A steadying device for electric line conductors comprising a substantially horizontal arm, a bracket adjustably suspended from said arm, a tubular insulator rotatably supported upon the bracket with its axis substantially vertical, and an arm or rod having one end secured to the insulator and its other end connected to the line conductor.

3. A steadying device for electric line conductors comprising a horizontal arm, a horse shoe bracket adjustably mounted thereon, a rod or tube vertically supported by the bracket, an insulator mounted upon the rod or tube, and an arm interposed between the insulator and the line conductor.

4. In an overhead structure for electric railways, the combination with a substan-

tially horizontal arm, a messenger cable supported by, and insulated from, the arm, and a trolley conductor suspended from the cable, of means for bracing the trolley conductor against lateral movement comprising
5 a horse shoe bracket adjustably mounted on the arm, a rod or tube vertically supported by the bracket, an insulator mounted upon the rod or tube, and an arm interposed

between the insulator and the trolley conductor. 10

In testimony whereof, I have hereunto subscribed my name.

THEODORE VARNEY.

Witnesses:

WESLEY G. CARR,
BIRNEY HINES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."