

(No Model.)

2 Sheets—Sheet 1.

W. COOPER.  
TROLLEY WIRE HANGER.

No. 566,376.

Patented Aug. 25, 1896.

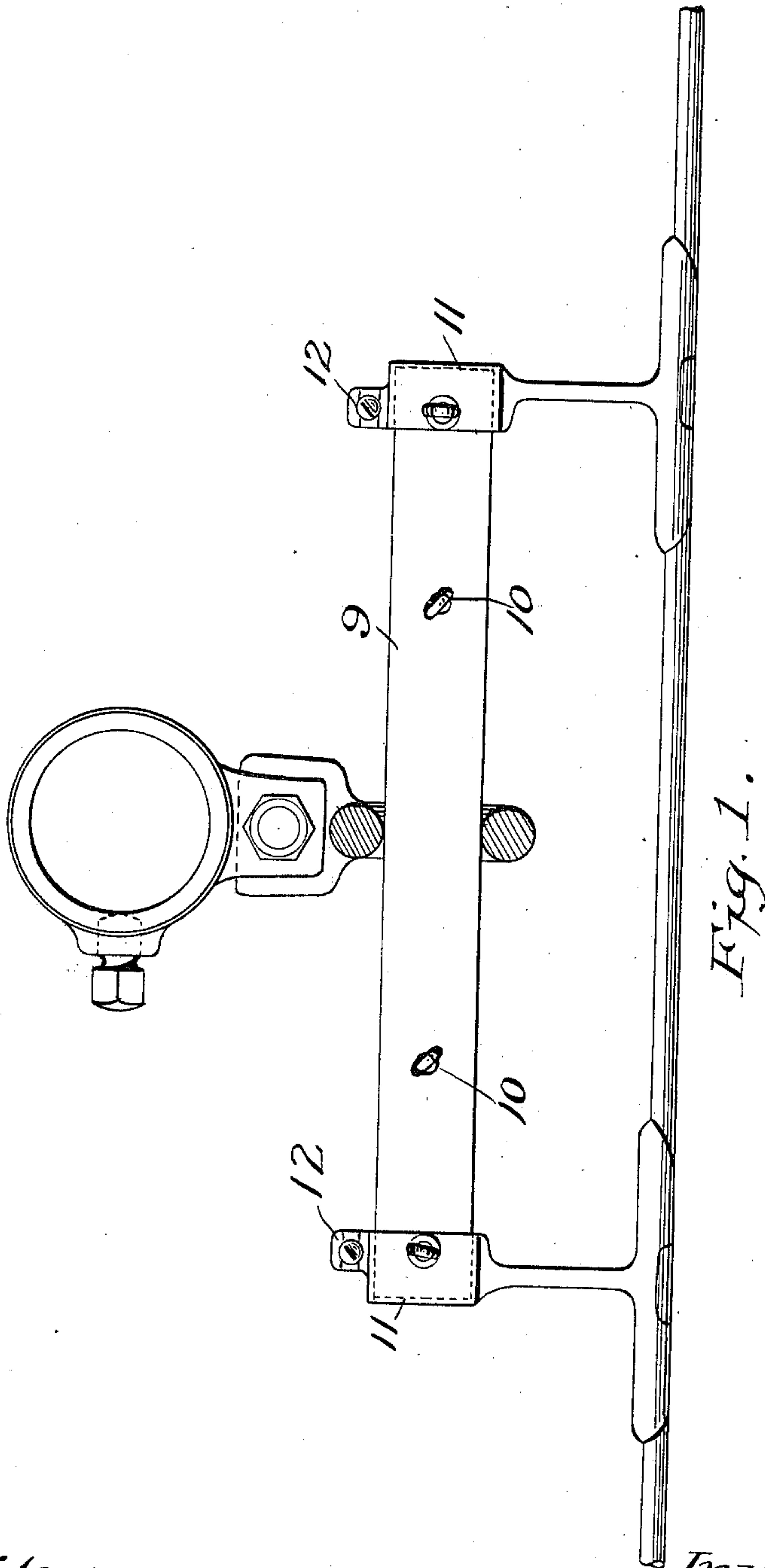


Fig. 1.

Witnesses:

C. E. Van Doren.  
Frederick S. Lyon

Inventor:

William Cooper  
Paul Hawley  
his attys

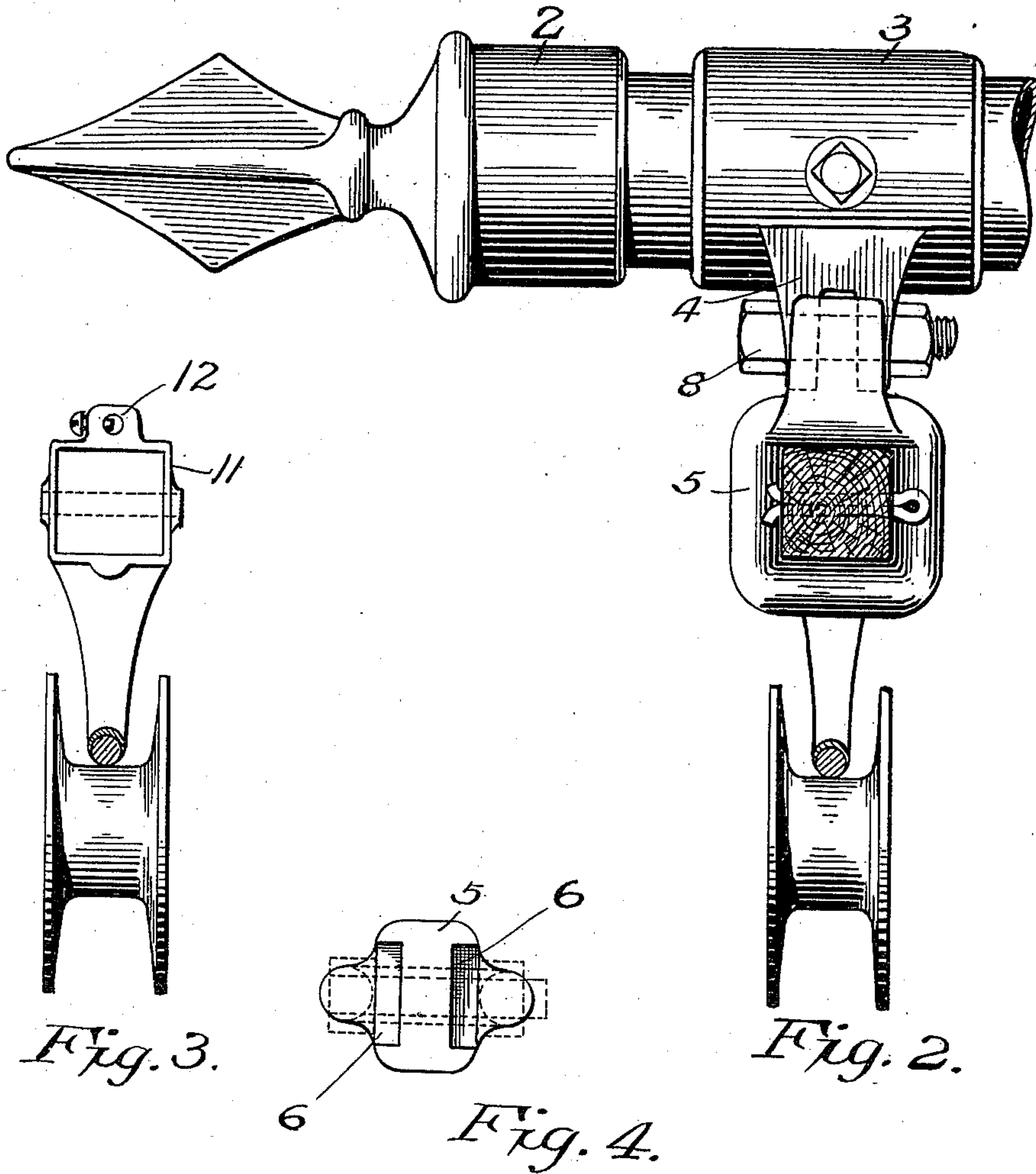
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Frederick A. Lyon

Inventor:

William Cooper  
by Paul H. Hawley  
his atty.



# UNITED STATES PATENT OFFICE.

WILLIAM COOPER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE  
GENERAL ELECTRIC COMPANY, OF NEW YORK.

## TROLLEY-WIRE HANGER.

SPECIFICATION forming part of Letters Patent No. 566,376, dated August 25, 1896.

Application filed September 23, 1895. Serial No. 563,286. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM COOPER, of Schenectady, county of Schenectady, State of New York, have invented certain new and  
5 useful Improvements in Trolley-Wire Hangers, of which the following is a specification.

My invention relates to an improved trolley-wire hanger; and the object which I have  
10 in view is to provide an inexpensive and durable device that will adjust itself to a substantially horizontal position and not be pulled out of place or broken when the trolley-wire is drawn in either direction. The  
15 trolley-hangers used heretofore are secured directly to the cross-arm and arranged to swing on a pivot and are frequently drawn out of position and broken by the expansion and contraction of the trolley-wire or when  
20 the wire is drawn in either direction when being spliced or mended.

My invention consists generally in a wooden bar arranged above and substantially parallel with the trolley-wire and supporting the  
25 trolley-hanger proper and arranged to slide back and forth in a collar that is rigidly secured to a cross-arm above.

My invention consists, further, in the construction and combinations as hereinafter described, and particularly pointed out in the  
30 claims.

In the accompanying drawings, Figure 1 is a side elevation of a trolley-wire and hanger embodying my invention, the fixed collar upon which the bar is arranged to slide being  
35 shown in vertical section. Fig. 2 is a front elevation of the hanger and the supporting-arm, the sliding wooden bar and the trolley-wire being shown in section. Fig. 3 is a front elevation of the trolley-wheel and  
40 the hanger proper, the trolley-wire being shown in section. Fig. 4 is a plan view of the top of the collar, showing the slots for receiving the forked ends of the lug that extend downward from the sleeve on the cross-  
45 arm, the bolt passing through them being indicated by dotted lines.

In the drawings, 2 represents a section of the outer end of a cross-arm supporting a  
50 trolley-wire.

3 is a sleeve adjustably arranged on said arm and secured thereto by a set-screw. The

sleeve 3 is provided with a downwardly-extending lug 4, having a split or forked end. A collar 5, having an upward extension or  
lug, is provided, and the upward extension 55 is provided with slots 6, which are adapted to receive the forked ends of the downward extension 4 of the sleeve 3. A suitable hole is provided through the lugs so joined together, and the bolt 8 is inserted in the hole, 60  
thereby rigidly securing the collar 5 to the sleeve 3. The collar 5 is provided with the rectangular opening in which the wooden bar 9 is adapted to slide. The edges of the collar around the rectangular opening are beveled, as shown in Fig. 1, so that the bar will  
65 slide back and forth easily in the opening without binding. The wooden bar 9 is provided with holes 10 for receiving cotter-pins, which regulate the travel of the bar in the 70  
collar, and the opposite ends of the bar 9 are secured in caps 11, each having a downward extension to which the trolley-wire is secured and which constitutes the trolley-hanger  
75 proper. Caps 11 are each provided with the lugs 12, and each lug is provided with an opening and a set-screw for receiving and securing the ends of feed-wires. The cotter-  
80 pins, being inserted in the holes 10, prevent the bar from sliding far enough to bring the collar in contact with the caps on either end of the bar. When the trolley-wire is drawn  
in either direction, the bar will slide in the block and adjust itself at all times to a substantially horizontal position. 85

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a trolley-wire hanger, the combination of an insulating-bar, metal pieces secured to the bar to which the trolley-wire is  
90 secured, and a support for the hanger permitting it to slide to and fro, but preventing it from twisting out of line.

2. In a trolley-wire hanger, the combination of a square or rectangular insulating-bar, 95  
metal caps secured to the bar to which the trolley-wire is secured, and a support for the bar provided with a square or rectangular opening in which the bar is free to slide, but  
100 is held against any rotating tendency.

3. In a trolley-wire hanger, the combina-



- tion of an insulating-support having a square or rectangular section, means for supporting the trolley-wire, a support for the bar permitting it to move to and fro, but holding it against any rotating tendency, and stops for limiting the movement of the bar.
4. In a trolley-wire hanger, the combination of an insulating-bar having other than a cylindrical contour, and a support for the bar having a surface conforming to the contour of the bar and provided with curved or beveled inner edges.
5. In a trolley-wire hanger, the combination with the collar, of a wooden bar slidably arranged and supported therein, holes being provided in said bar, pins adapted to fit into said holes and limit the travel of said bar, and means connecting said bar with the trolley-wire, substantially as described.
6. In a trolley-wire hanger, the combination, with a block or collar, provided with a shoulder or extension and slots in said shoulder, of a sleeve adjustably arranged on a cross-arm and having lugs adapted to fit into said slots means for rigidly securing said lugs in said slots, a bar arranged to slide in said collar, and means connecting the ends of said bar and a trolley-wire, substantially as described.
7. In a trolley-wire hanger, the combination of an insulating-bar having a square or rectangular cross-section, a support for the same permitting a universal movement, but restricting any rotating tendency, caps for the ends of the bar forming supports for the trolley-wire, and lugs on the caps to which the feed-wires are secured.
8. In a trolley-wire hanger, the combina-

tion of an insulating-bar having a square or rectangular section, and a support for the bar permitting a free movement of the bar except in a rotary direction.

9. In a trolley-wire hanger, the combination of an insulating-bar having a square or rectangular section, a support for the bar provided with curved or beveled inner edges, permitting a free movement of the bar up and down or right and left, but restricting any tendency of the bar to rotate.

10. In a trolley-wire hanger, the combination of a square or rectangular insulating-bar, a support for the bar rigidly secured to the span-wire or bracket, the support for the bar being provided with an opening in which the bar is free to move in all directions, but is held against rotation.

11. In a trolley-wire hanger, the combination of a square or rectangular insulating-bar, ears provided with caps and secured to the bar and the trolley-wire, a support for the bar provided with lugs for securing it to a pole-clamp, and means for permitting a limited movement of the bar independent of the support.

12. In a trolley-wire hanger, the combination of an insulating-bar to which the trolley is secured by any suitable means, with a support for the bar permitting a universal movement about the support as a center, but preventing any rotating tendency of the bar.

In testimony whereof I have hereunto set my hand this 23d day of June, A. D. 1894.

WILLIAM COOPER.

In presence of—

W. P. GANNEY,

HANFRED ROBISON.