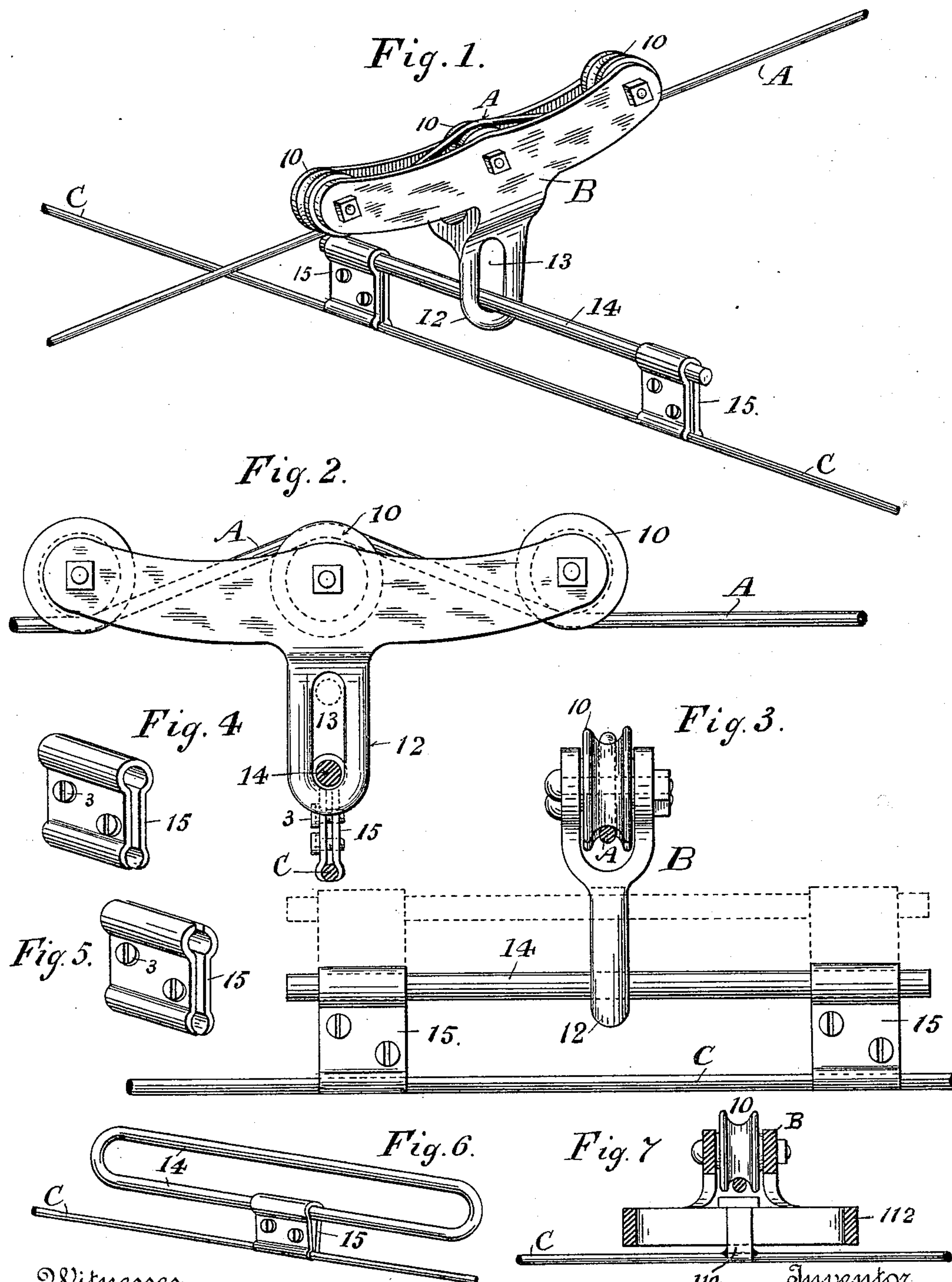


(No Model.)

N. WEEKS, Jr.  
TROLLEY WIRE SUPPORT.

No. 460,735.

Patented Oct. 6, 1891.



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# UNITED STATES PATENT OFFICE.

NELSON WEEKS, JR., OF LONG ISLAND CITY, NEW YORK.

## TROLLEY-WIRE SUPPORT.

SPECIFICATION forming part of Letters Patent No. 460,735, dated October 6, 1891.

Application filed April 1, 1891. Serial No. 387,299. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON WEEKS, Jr., a citizen of the United States, residing in Long Island City, county of Queens, and State of New York, have invented certain new and useful Improvements in Trolley-Wire Supports, fully set forth in the following description and represented in the accompanying drawings.

10 This invention relates, generally, to a support for line-wires, and more particularly to a suspended hanger for an electric line conductor—as, for instance, an overhead conductor employed in electric railways—in  
15 which the current is taken from the overhead wire to the motor on the car by a trolley carried by the car and bearing against said conductor.

The object of the present invention is to  
20 provide a support for the overhead conductor that may be readily placed in position and changed in such position during the stretching of the conductor without the necessity of removing or unfastening any portion of the  
25 connected parts or of the suspended support, and which support provides means permitting the free longitudinal movement of the line conductor with respect thereto, and will also permit said line conductor to move verti-  
30 cally in said support and yet be firmly supported thereby against sagging or becoming detached and allowing equal tension throughout the length of the line conductor without lateral pull upon the span-wire or the sus-  
35 pending device.

To this end the invention consists of the novel structure, combination, and arrangement of parts fully hereinafter set forth.

In the accompanying drawings, which illustrate a practical embodiment of the invention,  
40 Figure 1 is a perspective view of the improved support with the mode of connection with the line conductor. Fig. 2 is a side elevation thereof, partly in section. Fig. 3 is  
45 an end view. Fig. 4 is a perspective view of one of the clips for securing the line conductor, and Fig. 5 a similar view of a modified form thereof. Figs. 6 and 7 are modified  
50 forms of the connection supporting the line conductor.

In the suspending of the overhead line conductor it will be supposed that two uprights

or poles will be erected upon opposite sides of the railway, as is common, from which will be stretched a span-wire A, connecting the  
55 two posts or uprights and stretched taut therebetween. On this cross span-wire will be threaded the improved suspending device B, and from the suspending device will be suspended the line conductor C, that ex-  
60 tends longitudinally along the railway.

The improved suspending device consists of a frame having two or more bearings 10, which are shown in the form of small grooved  
65 rollers, preferably formed of porcelain, for insulating purposes, in the grooves of which the span-wire is led in such manner that one or more kinks or bends will be formed in said  
70 wire, which serve to support the suspending device and at the same time secure it in the position to which it is set and prevent acci-  
75 dental lateral displacement with respect to its position over the railway. This means of suspending the suspending device also per-  
80 mits it to be moved bodily along said span-wire to adjust it to obtain its correct position, and this is readily accomplished by simply  
85 sliding the device along the span-wire without the necessity of loosening any securing means which after the adjustment of the sup-  
90 porting device would require to be resecured.

The supporting-device frame provides bearings for a slidable connection with the line conductor, in this instance provided by a de-  
85 pending loop 12, having a vertically-elongated eye 13, to receive a longitudinally-arranged clip-bar 14, which is thus suspended by the loop and yet permitted to rise to some extent  
90 freely with respect thereto. From this clip-bar 14 is suspended the line conductor C by means of one or more clips 15. These clips  
95 are formed, preferably, of sheet metal bent to embrace the clip-bar 14, and providing a pair of jaws to embrace and clamp the line conductor. As shown in Fig. 4, it is formed of a  
100 single piece of metal; but obviously might be formed of two pieces, as shown in Fig. 5, the said clip being securely clamped in place upon the clip-bar and at the same time firmly se-  
105 curing the line conductor by means of screws or other fastening devices 3, as will be readily understood. The clips are preferably ar-  
110 ranged at either end of the clip-bar 14 and support the line conductor some distance be-



low it, so as to permit the longitudinal movement of the bar through the eye of the loop 12, as well as to permit the line conductor and clip-bar to move bodily vertically, as may occur by the upward pressure of the passing trolley, which bar and line conductor, after its passing, will return to their normal position supported by the loop.

Instead of the single straight bar 14, it may be in the form of a looped rod, as shown in Fig. 6, suspended by the loop of the suspending device and bearing a single clip 15 for securing the line conductor.

The particular mode of adjustably supporting the line conductor may be varied from that heretofore described. Thus in Fig. 7 the suspending-device frame has a horizontal slot or loop 112, in which is suspended a rod 114 by its head, the rod being directly connected to the line conductor, thus dispensing with the clips employed in the other form. In this modified construction the rod and line conductor may move bodily upward as before, and they may both move longitudinally in the direction of the loop.

With this understanding of the construction and arrangement of the improved supporting means it will be readily seen that it provides a simple and effective suspending device capable of being adjusted laterally to its proper place on the span-wire and permitting the free movement of the line conductor with respect to it, both vertically and longitudinally; and it also supports the line conductor, so that the trolley may pass the clips without jumping and thus breaking the circuit and causing sparking, and it also provides a means by which said line conductor can be readily stretched or removed at will without disturbing the suspending device.

Instead of making the bearings of the frame for the span-wire of insulating material, the rod 14 might be formed of that material or the eye of the loop be lined with such material, or any mode of insulating the line conductor from the span-wire may be employed.

It will be understood that I do not confine myself strictly to a suspending device having grooved or other rolls for the reception of the span-wire, as the loop 13 and bar 14 may be advantageously employed in devices which have other means of attachment to the span-wire or posts.

What is claimed is—

1. The combination, with a line conductor, of a clip for clamping said conductor to leave an uninterrupted contact-surface, and a suspending device having bearings for the clip, adapted to permit the free bodily movement of the conductor and its clip, substantially as described.

2. The combination of the span-wire and a suspending device longitudinally movable thereon and having bearings for the line conductor, permitting the free bodily longitudinal movement of said conductor independent of the movement on the span-wire, substantially as described.

3. The herein-described suspending device for adjustably supporting a line conductor, having bearings for a bar or frame connected to the line conductor and supporting said bar and line conductor, so that they may be moved independent of the suspending device.

4. The herein-described suspending device, having bearings adapted to engage and deflect or bend the span-wire, and also with bearings for adjustably supporting a line conductor, and adapted to permit the free movement of said conductor with respect to the suspending device.

5. The combination of a suspending device having means of attachment to the span-wire, and slidable connections for supporting the line conductor, adapted to move independently of the span-wire connections, substantially as described.

6. The combination, with a supporting device having a loop, of a longitudinally-arranged clip-bar suspended by the loop and bearing a clip or clips for connection with the line conductor, substantially as described.

7. The combination, with a suspending device bearing a loop, of a clip-bar longitudinally and vertically movable through said loop and sustaining at its opposite ends clips for securing the line conductor, substantially as described.

In testimony whereof I have set my hand, this 25th day of March, 1891, in the presence of two witnesses.

NELSON WEEKS, JR.

Witnesses:

N. MARLOW,  
GEO. H. GRAHAM.