No. 791,082. PATENTED MAY 30, 1905.

H. P. DAVIS & T. VARNEY.

TROLLEY WIRE HANGER.

APPLICATION FILED OCT. 19, 1904.

Fig. 2.

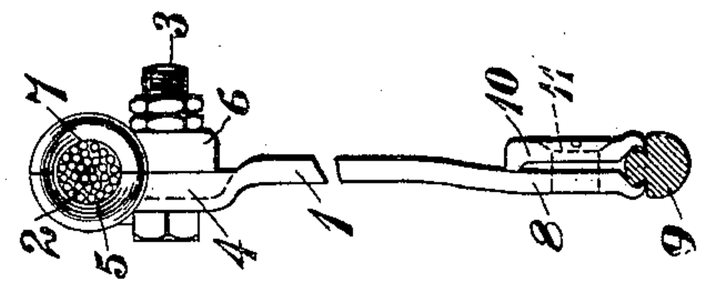
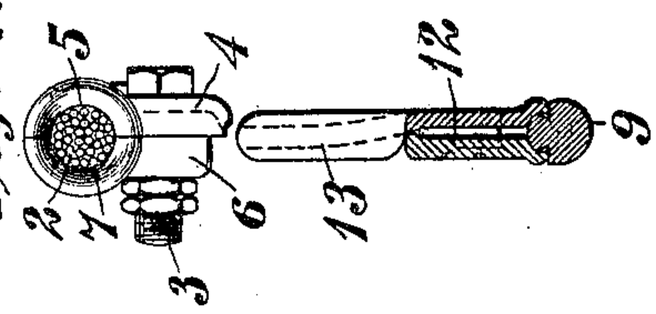


Fig. 4.



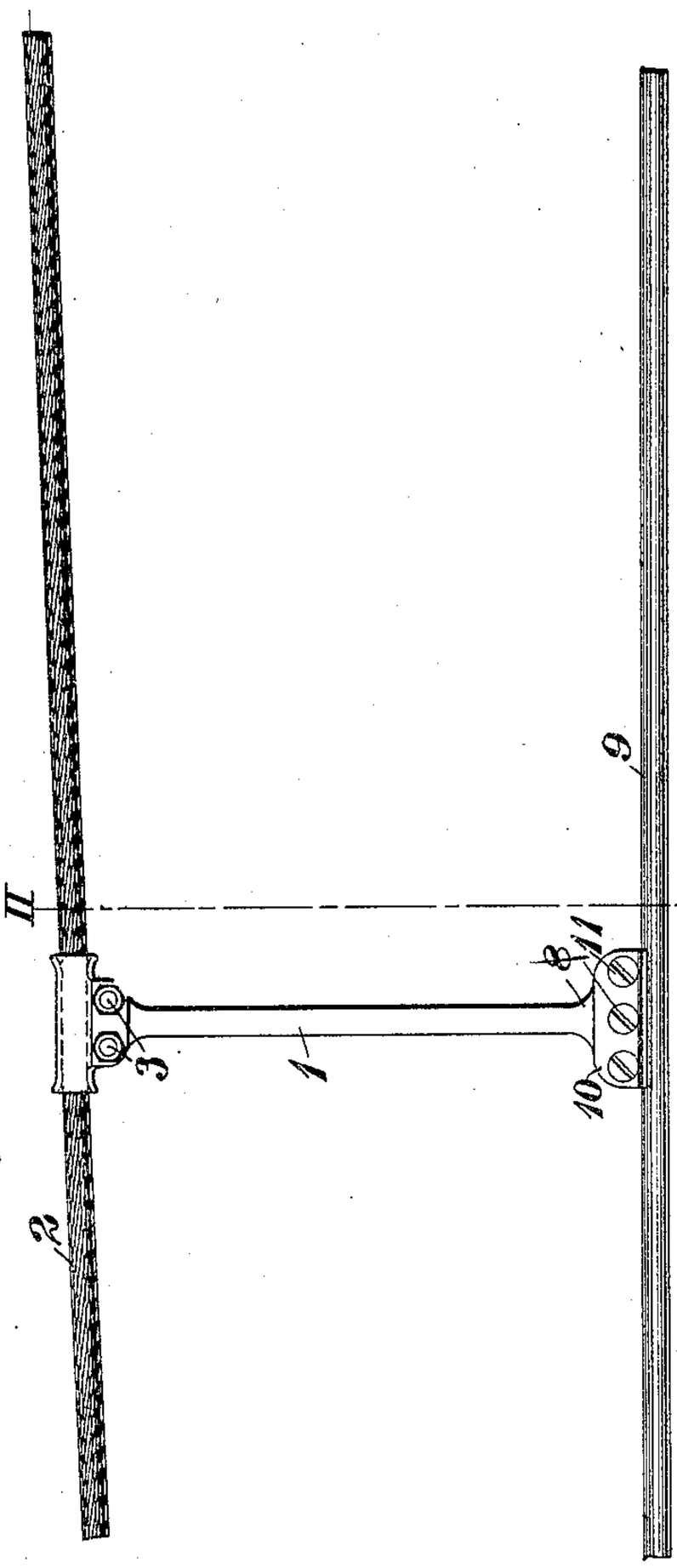


Fig. 1.

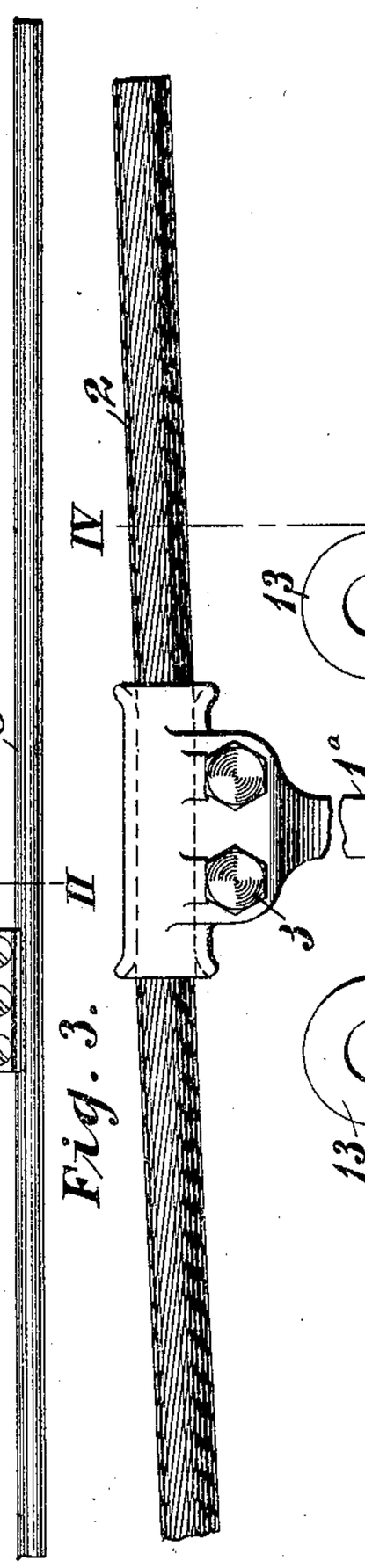
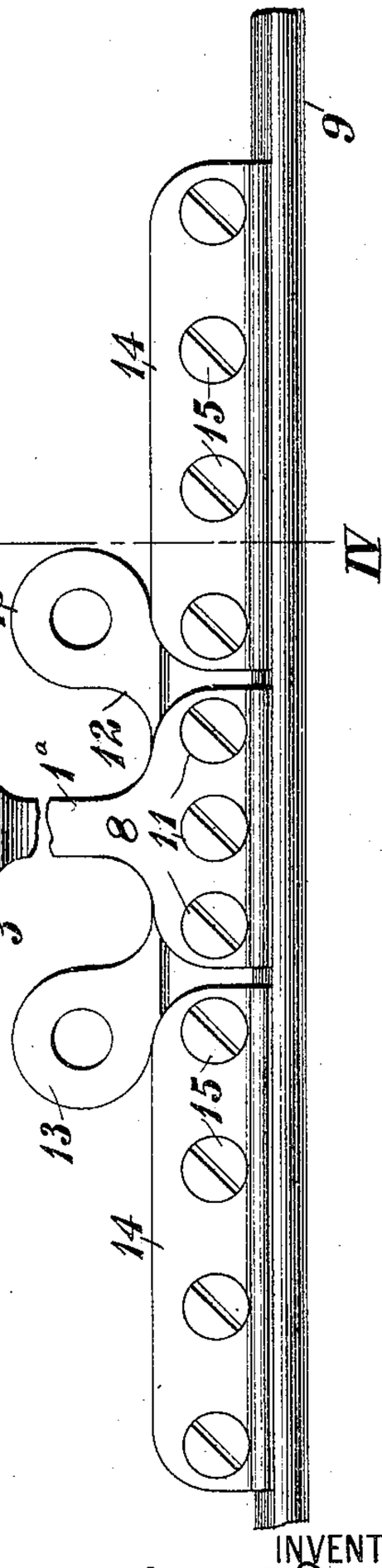


Fig. 3.



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No. 791,082. Patented May 30, 1905.

UNITED STATES PATENT OFFICE.

HARRY P. DAVIS AND THEODORE VARNEY, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

TROLLEY-WIRE HANGER.

SPECIFICATION forming part of Letters Patent No. 791,082, dated May 30, 1905.

Application filed October 19, 1904. Serial No. 229,179.

To all whom it may concern:

Be it known that we, HARRY P. DAVIS and THEODORE VARNEY, citizens of the United States, and residents of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Trolley-Wire Hangers, of which the following is a specification.

Our invention relates to electric railways, and particularly to means for suspending the trolley-wires which are utilized for conducting the current along such railways.

The object of our invention is to provide a simple, easily-applied, and durable means for suspending a trolley-conductor from a messenger wire or cable.

In the accompanying drawings, Figure 1 is a side elevation of a messenger-cable and trolley-conductor and one form of hanger. Fig. 2 is a sectional view on line II II of Fig. 1. Fig. 3 is a view corresponding to Fig. 1, but showing a modified form of hanger; and Fig. 4 is a sectional view on line IV IV of Fig. 3.

It is essential for satisfactory operation of electrically-propelled vehicles at high speeds that the trolley-conductor shall be securely supported at an approximately uniform elevation above the tracks and in such manner that it may be substantially free from lateral vibration and displacement. A desirable means for properly supporting the trolley-conductor under such conditions of service embodies a messenger wire or cable which hangs between poles arranged at suitable intervals along the road in catenary curves and from which the trolley-conductor is suspended at an approximately uniform elevation above the track by means of suitable hangers which differ in length in accordance with the points along the catenary curve of the messenger-cable at which they are located.

Our present invention relates to this type of trolley-conductor suspension, and has special reference to the hanger which is attached at one end to the messenger-cable and at its other end to the trolley-wire.

The hanger 1 (shown in Figs. 1 and 2) is suspended from a messenger-cable 2, to which it is securely clamped by means of bolts 3, the upper portion of the hanger being provided with an integral expanded portion 4, having a semicylindrical recess 5, and with a complementary detachable portion 6, having a similar cylindrical recess 7, these two recesses 5 and 7 being of such radius of curvature that when brought together they will form a cylinder which receives the messenger-cable 2. The lower end of the hanger 1 is expanded laterally to form a head 8, the extreme lower edge of which is of claw or hook form, as is clearly indicated in Fig. 2, to engage a groove in one side of the trolley-conductor 9. A complementary detachable head 10, having a similar claw or hook shaped lower edge to engage a groove in the opposite side of the trolley-conductor, is fastened to the head 8 by means of screws 11.

The hangers 1, as hereinbefore indicated, may be of different lengths to suit the curve of the messenger-cable and may be located at such suitable intervals apart as may be necessary or desirable in order to produce a satisfactory suspension.

The several parts of the hangers 1 may be punched from sheet metal or they may be malleable castings. Since the hangers are rigid and are securely clamped at their respective ends to the messenger-cable and to the trolley-conductor, no independent vibration of the messenger-cable and trolley-conductor can take place. Consequently, since the entire span must vibrate as a unit if at all, the structure is comparatively rigid.

It is often found desirable to employ strain wires or cables, which are fastened to the messenger wire or cable by suitable clamps and extend therefrom at suitable angles to poles located alongside the track. The strain-wire clamps are also connected to the trolley-conductor, and when these connections are to be made a clamp like that shown in Figs. 3 and 4 may be employed. In these figures the messenger-cable 2 and the trolley-conductor

9 are or may be the same in construction and arrangement as the corresponding parts shown in Figs. 1 and 2. In this modification the hanger 1ª has parts 3, 4, 5, 6, 7, and 8, substantially like the corresponding parts in Fig. 1, except that in the form shown in Figs. 3 and 4 the main head 4, the complementary head 6, and the bolts 3 are reversed. In lieu of the complementary head 10 for coöperation with the head 8 to clamp the trolley-conductor we provide a long clamping-plate 12, which has at any desired distance from the body portion of the hanger and at each side thereof an ear 13, the connection between the strain-clamp (not shown, but above referred to) being made to the one or the other of these ears 13. In order to coöperate with the clamping-plate 12, we provide at each end of the head 8 a complementary clamping-plate 14 and fasten the same to the plate 12 by means of screws 15.

The form, dimensions, and relative location of parts may be varied within considerable limits without departing from our invention.

We claim as our invention—

1. A hanger for grooved trolley-conductors comprising a rigid bar having a socket-clamp at one end and a claw or hook clamp at its other end.

2. The combination with a grooved trolley-conductor and a messenger wire or cable, of a hanger comprising a rod or bar having a socket-clamp at one end for gripping the messenger wire or cable and a claw or hook clamp at the other end for engaging the grooves in the trolley-conductor.

3. A supporting structure for a trolley-wire comprising a messenger wire or cable and a rigid bar provided with a two-part socket-clamp at one end to grip the messenger wire or cable and with a two-part hook-clamp at its other end to grip the trolley-wire.

4. A hanger for grooved trolley-conductors comprising a rigid bar having a two-part socket-clamp at one end and a two-part hook-clamp at its other end.

5. The combination with a grooved trolley-conductor and a messenger wire or cable, of a hanger comprising a rod or bar having a two-part socket-clamp at one end for gripping the messenger wire or cable and a two-part hook-clamp at the other end for engaging the grooves in the trolley-conductor.

6. A hanger for trolley-conductors comprising a bar having expanded ends, one of which is provided with a semicylindrical recess and the other of which has a claw edge, supplemental pieces having claw edges, a plate or bar having ears and a claw edge and means for clamping said members together and to the trolley-conductor.

7. A hanger for trolley-conductors comprising a bar having laterally-expanded ends, one of which has a semicylindrical recess and the other a claw edge, complementary parts for the respective ends and means for clamping said ends and the complementary parts together.

8. A hanger for trolley-conductors comprising a bar having laterally-expanded ends, complementary parts and means for clamping them to the ends.

In testimony whereof we have hereunto subscribed our names this 8th day of October, 1904.

HARRY P. DAVIS.
THEODORE VARNEY.

Witnesses:
CAROLINE SMYERS,
CARL P. NACHOD,
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