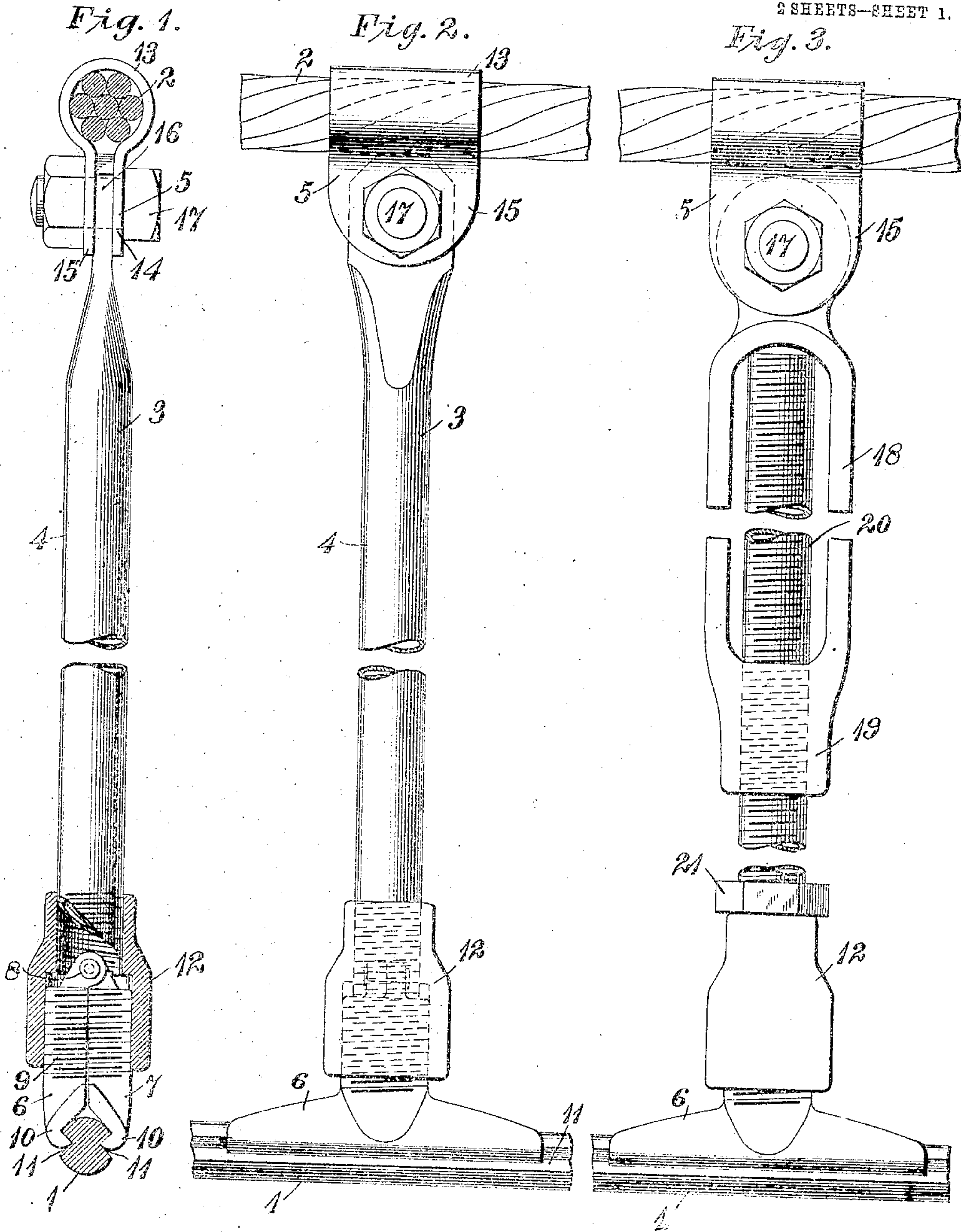


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TROLLEY HANGER.
APPLICATION FILED MAY 1, 1905.

Patented Aug. 17, 1909.
2 SHEETS—SHEET 1.



WITNESSES:
Fred H. Miller
R. J. Dearborn.

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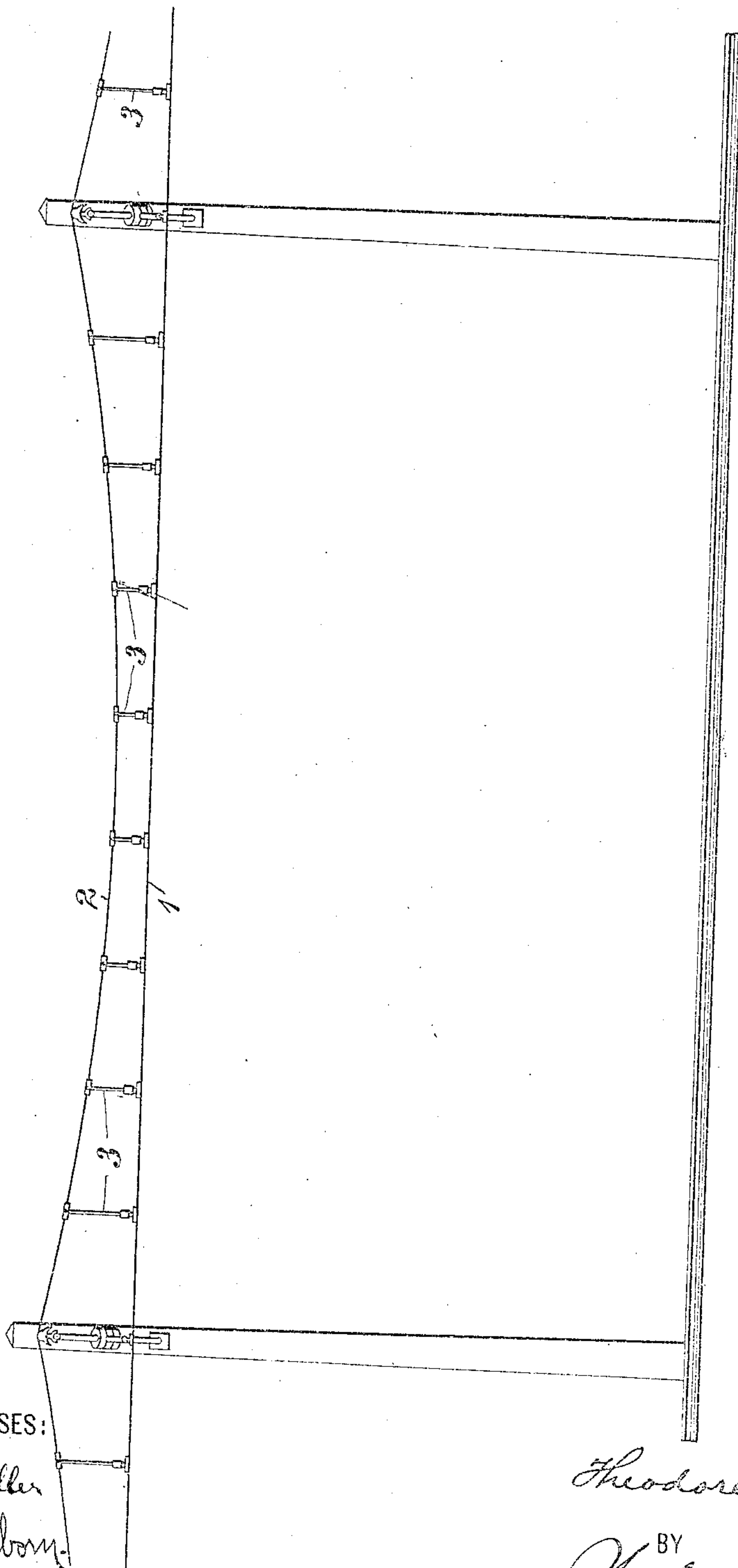
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2 SHEETS—SHEET 2.

Fig. 4.



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

TROLLEY-HANGER.

No. 931,353.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed May 1, 1905. Serial No. 258,322.

To all whom it may concern:

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

My invention relates to means for suspending electric line conductors and has special reference to such means as are adapted for use with a catenary form of trolley line suspension and are commonly known as trolley hangers.

The object of my invention is to provide an extensible hanger that shall be simple and durable in construction and which may be readily and securely clamped to a grooved trolley conductor and pivotally supported from a messenger wire or cable.

Trolley hangers heretofore constructed for use with a catenary form of line suspension generally comprised a rod or bar adapted to be suspended from the messenger wire or cable and expanded into a clamping jaw at its lower end, and a complementary clamping plate that was fastened to the clamping jaw by a plurality of binding screws. This construction not only did not permit of any adjustment in the length of the hanger to suit special conditions, but its installation involved considerable time and labor and the binding screws were liable to work loose by reason of the jar that accompanied the passage of the trolley along the conductor.

In order to obviate the objections and limitations incident to the use of the devices that have heretofore been employed, the hanger of my invention is so constructed and supported that its length may be varied and its angular relation to the messenger cable may be adjusted, and it is also so constructed that it cannot be accidentally detached from the trolley conductor. Furthermore, in case it is undesirable to provide extensible body portions, the relation of the parts is such that a hanger may be readily made of any convenient length by cutting the connecting rod or pipe to the proper length and re-threading it near one end.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of the hanger, the clamping bushing being shown in section to disclose the clamping jaws, Fig. 2 is

a side elevation of what is shown in Fig. 1, and Fig. 3 is a side elevation of a hanger having an extensible body portion. Fig 4 is a diagrammatic side elevation of a section of line construction which embodies my invention.

Referring to Figs. 1, 2 and 4 of the drawings, an electric line or trolley conductor 1 is supported from a messenger cable 2 by hangers 3 of different lengths to insure suspension of the trolley conductor from the messenger cable at a uniform height above the track and each of which comprises a body portion or connecting rod 4, a messenger cable clamp or clip 5 and a plurality of clamping jaws 6 and 7. The clamping jaws 6 and 7 may be either loosely connected together by a hinged joint 8 or they may be merely assembled face to face to constitute a cylindrical body, which is screw-threaded, as indicated at 9. Each clamping jaw has an inwardly projecting hook or claw 10 that engages a corresponding groove 11 in the side of the conductor 1. The jaws are so constructed that, when the hooks engage the grooves in the conductor, the threaded portions are separated slightly at their lower ends and the claws are forced into rigid clamping engagement with the conductor by means of a coupling sleeve 12 that makes a screw-threaded engagement with the rod 4 and the jaws 6 and 7. By omitting the hinge joint between the jaws 6 and 7, the jaws may be more cheaply manufactured and be made alike and therefore interchangeable. After the coupling sleeve 12 has been screwed to clamping position on the jaws, the pipe 4 is screwed into it and forced against the upper ends of the jaws 6 and 7 to make a rigid joint which is further made secure from any possibility of the bushing working away from the jaws by limiting the thread on the rod 4 to the space covered by the coupling sleeve. The clamp or clip 5 comprises a loop 13 that fits over the cable 2 and is provided with two ears 14 and 15. The flattened upper end 16 of the rod 4 is located between the ears 14 and 15 and is fastened thereto by a bolt 17 to form a pivotal connection so that each rod 4 may hang vertically from any point in the curved messenger cable.

The modification of my invention shown in Fig. 3 of the drawing embodies the jaws 6 and 7, the coupling sleeve 12 and the mes-

senger cable clamp hereinbefore described, but in lieu of the rod 4 shown in Figs. 1 and 2, I employ a member 18, the upper end of which is fastened to the clamp 5 in the same manner as the rod 4 and the lower end of which constitutes a nut 19 for a screw-rod 20. The rod 20 is screwed into the coupling sleeve 12 against the upper ends of the jaws 6 and 7 and a lock-nut 21 is then screwed against the upper end of the coupling sleeve. After the above specified connection between the hanger and the trolley conductor is made, the member may be screwed either up or down on the rod 20 to secure the desired length of hanger, and then its upper end may be attached to the clamp 5.

Although I have shown and described a specific arrangement, I desire it to be understood that variations in size and form that do not substantially change the construction or the object obtained shall be within the scope of my invention.

I claim as my invention:

1. A conductor hanger comprising a cable, a cable-engaging clamp, a rigid body member pivotally connected at one end to said clamp so as to be adjustable in a vertical plane containing the cable, and a pair of conductor-clamping members mounted upon the other end of the body member and having jaws disposed parallel to said plane.

2. A conductor-supporting hanger comprising a cable, a cable-engaging clamp, a rigid extensible body member pivotally connected at one end to said clamp so as to be adjustable in a vertical plane containing the cable, and conductor-clamping members mounted upon the other end of said body

member and having jaws disposed parallel to said plane.

3. The combination with an electric conductor, of a supporting hanger therefor comprising an extensible body member having a screw-thread upon its lower end, a pair of clamping jaws having external screw-threads, and an internally threaded sleeve which engages said body member and said jaws.

4. The combination with an electric conductor, of a cable, a cable-engaging clamp, a body member, a pair of clamping jaws disposed parallel to the plane of the cable, an adjustable means for holding said clamping jaws in engagement with said conductor and for connecting them to said body member, and means for so attaching said body member to the cable-engaging clamp that it shall be angularly adjustable only in a vertical plane which is coincident with the axis of the cable.

5. The combination with a messenger wire or cable and means for supporting the same in catenary curves, of a trolley conductor in the same vertical plane as the messenger cable and a series of hangers of different lengths, each of which comprises a messenger-cable clamp, a trolley-conductor clamp and a rod or bar connected to the messenger-cable clamp and angularly adjustable only in the plane thereof.

In testimony whereof, I have hereunto subscribed my name this 26th day of April, 1905.

THEODORE VARNEY.

Witnesses:

JOHN D. PATON,
BIRNEY HINES.