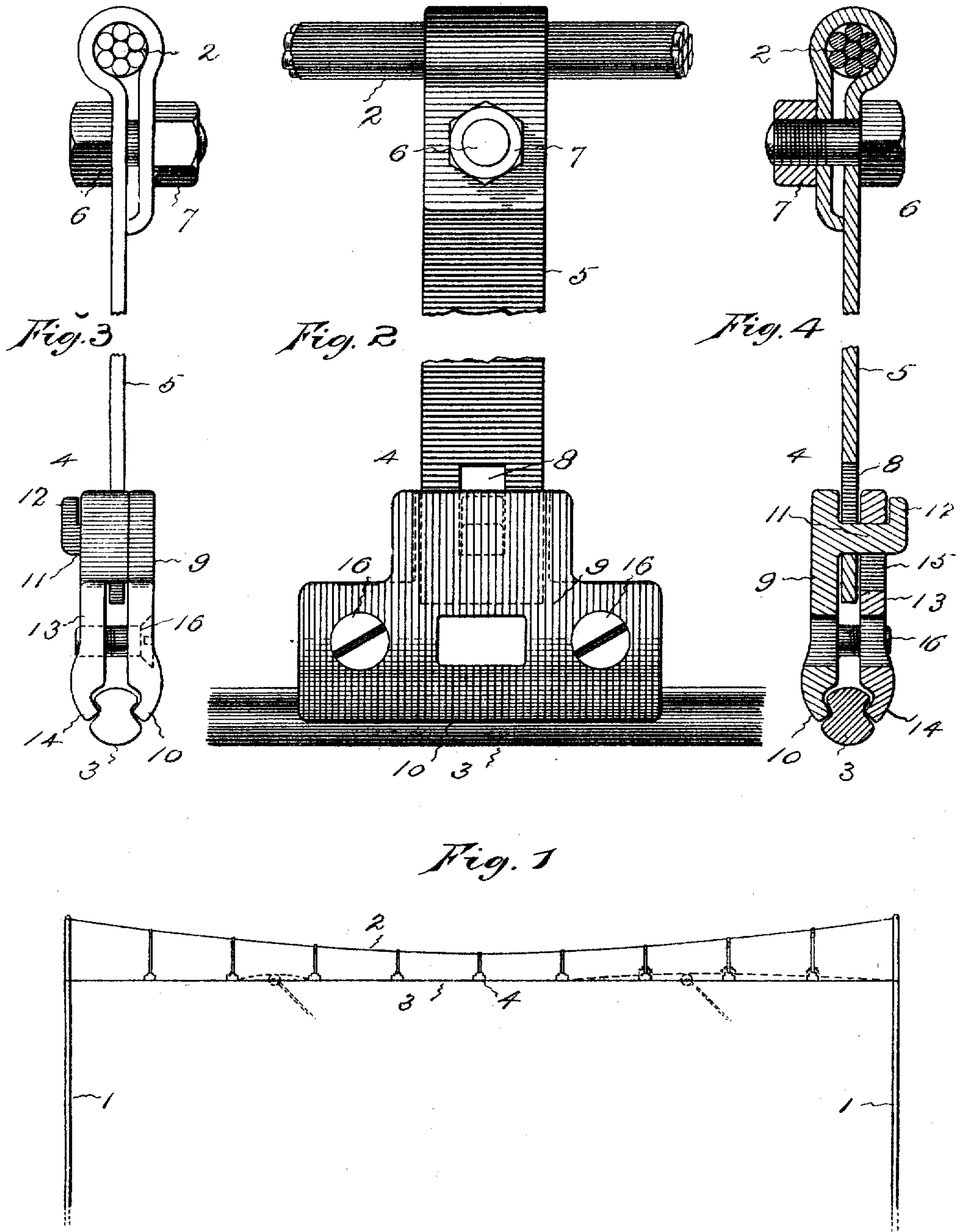


W. H. KEMPTON.
TROLLEY HANGER.
APPLICATION FILED FEB. 18, 1908.

923,851.

Patented June 8, 1909.



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WILLARD H. KEMPTON, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE JOHNS-PRATT COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

TROLLEY-HANGER.

No. 923,851.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed February 18, 1908. Serial No. 416,564.

To all whom it may concern:

Be it known that I, WILLARD H. KEMPTON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Trolley-Hanger, of which the following is a specification.

This invention relates to a hanger which is more particularly designed to support the trolley wire of a catenary line construction for electric railways.

In the ordinary catenary line construction in which the trolley wire is hung from a messenger cable suspended between poles, the upward pressure of the trolley wheel or shoe necessary to make the proper contact with the trolley wire lifts the wire between the hangers. The amount of the upward lift of the wire of course is greatest between the hangers and least adjacent to and at the hangers. This fact causes the trolley wheel or shoe, as it moves along the wire, to travel in waves, that is, it rises and lifts the wire more and more as it passes from a hanger and then lowers and comes down with the wire as it approaches and passes the next hanger, and as a result of this the trolley wheel or shoe tends to jump as it passes the hanger and break contact and cause an arc which burns and weakens the wire. The mechanical friction and rubbing of the trolley wheel or shoe as it passes beneath the hangers of the common rigid type is also greater than it is between the hangers and so produces greater wear at the hangers than between.

The object of this invention is to provide a hanger for a system of this character which will support the trolley wire in such manner that it will yield as the trolley wheel or shoe passes beneath the hanger and thus eliminate the formation of waves in the wire and the consequent tendency of the wheel or shoe to jump when passing the hanger.

Figure 1 of the accompanying drawings is a diagram of a single span of catenary line construction indicating the action of a trolley wheel on a wire supported by ordinary hangers and also by hangers which embody this invention. Fig. 2 shows a side elevation of a hanger which embodies this invention. Fig. 3 shows an edge elevation, and Fig. 4 shows a central vertical section of one of these trolley wire hangers.

The poles or supporting posts 1 may be of any size, height and type, and may be arranged any suitable distance apart. The messenger cable 2 is suspended from brackets, cross-beams or other forms of spans attached to or arranged between the poles or supporting posts that are planted in the usual way along the road. The trolley wire 3 which may be round, grooved, 8-shaped, or any other form of cross section, and any suitable size, is supported by hangers 4 of various lengths, clamped to the messenger cable so as to support the trolley wire horizontally.

These hangers may be provided with a strap rod or other form of support of the required length. In the form illustrated, the hanger has a supporting strap 5 formed of sheet steel. When this form of strap is used the upper end is bent around the messenger cable and fastened by means of a bolt 6 and nut 7. The lower end of the strap shown has a vertical slot 8. The trolley wire clamp which is illustrated has a plate 9 with a gripping jaw 10 at its lower end and a lug 11 with an upturned finger 12 at its upper end. The clamp also has a plate 13 with a gripping jaw 14 at its lower end and a slot 15 near its upper end, which slot is of sufficient size to receive the lug and finger which project from the other plate and which are put through the slot 8 in the supporting strap. In assembling these parts the lug and finger are first thrust through the slot in the strap and then through the slot in the other plate, which is afterward dropped and then when the trolley wire is inserted between the jaws the plates are fastened together by machine screws 16 or some other form of screws or bolts. This construction allows the trolley wire clamp to rise when the wire is lifted as the trolley wheel or shoe passes beneath the hanger, and it also allows a slight oscillation of the hanger in a vertical plane longitudinally with relation to the wire so that the wire instead of being lifted by the upward pressure of the trolley wheel or shoe between the hangers only, is also lifted beneath the hangers, and thus the trolley wheel or shoe always travels practically horizontal and is not made to travel with a wave-like motion, that is, to rise between the hangers and then be forced down at the hangers in such manner as to cause undue wear beneath the hang-

ers, and to jump as it passes the hangers and break contact so as to form an arc and burn the wire.

The invention claimed is:—

- 5 1. A trolley hanger consisting of a slotted supporting strap adapted to be attached to a messenger cable, clamping plates adapted to be attached to a trolley wire, means extending through and holding the lower edges of the plates together, and means projecting from one plate through and extending on the outside of the other plate, and interlocking and holding the upper edges of the plates together, said interlocking means also extending through the slot in the support and holding said plates and the end of said supporting strap together but allowing a limited vertical movement of the plates with relation to the strap.
- 20 2. A trolley hanger consisting of a perforated support adapted to be attached to a messenger cable, clamping plates adapted to be attached to a trolley wire, interlocking means projecting from near the upper edge of one plate through the perforated support and a slot in the other plate and engaging with the outside of the upper edge of said other plate for detachably holding the upper edges of the plates together with the lower end of the support between them, and screws passing through the plates below the interlocking means, and holding the lower edges of the plates together with a trolley wire between them.
- 35 3. A trolley hanger having a slotted support and a trolley clamp formed of plates, one plate having a lug and a finger and the other plate having a slot adapted to receive the lug and finger, said lug extending

through the slot in the lower end of the support and through the opposing plate so the finger lies on the outside of said opposing plate, and means below the interlocking lug and finger for securing the plates together. 40

4. A trolley hanger having a supporting strap with its free end formed to provide means for clamping a messenger cable and its lower end provided with a slot, and a trolley wire clamp formed of plates provided with means for clamping a trolley wire, means interlocking said plates at the upper edges, said interlocking means extending through the slot in the lower end of the strap, and screws below said interlocking means securing said plates together. 45 50 55

5. A trolley hanger having a supporting strap with its upper end doubled upon itself to form a messenger cable clamp, a bolt and nut for securing the upper end of the strap, a trolley wire clamp formed of plates having gripping jaws, screws for securing the plates together, a lug extending from one plate through a slot in the strap and a slot in the other plate, and a finger projecting from the lug for holding the upper edges of the plates together and connected with the strap. 60 65

6. A trolley hanger having clamping plates with clamping means at their lower edges, screws extending from plate to plate near their lower edges, a lug extending from one plate through a slot in the other plate, and a finger projecting from the lug and adapted to engage the back of the adjacent plate. 70

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