

UNITED STATES PATENT OFFICE.

THEODORE FLETCHER, OF ST. LOUIS, MISSOURI.

TROLLEY-HANGER.

SPECIFICATION forming part of Letters Patent No. 587,805, dated August 10, 1897.

Application filed October 10, 1896. Serial No. 608,434. (No model.)

To all whom it may concern:

Be it known that I, THEODORE FLETCHER, of St. Louis, in the State of Missouri, have invented a new and Improved Trolley-Hanger, of which the following is a full, clear, and exact description.

My invention relates to a new and improved form of trolley-hanger; and it consists in certain improvements in the means for the suspension of the wire, whereby the bending and consequent breakage of the wire is prevented.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation of the device, the suspension-block being shown in section. Fig. 2 is a top plan view of the same partly in section. Fig. 3 is an elevation, partly in section, of one of the shoes or ears which are attached to the trolley-wire. Fig. 4 is a cross-section of the same on the line 4 4 of Fig. 3. Fig. 5 is a partly sectional elevation of a suspending bracket, showing a different manner of attaching the hanger-wire thereto. Fig. 6 is a side elevation of the same, and Fig. 7 is a similar view of a bracket having a plain eye for carrying the hanger-wire.

In using ordinary hangers for trolley-wires the wire is apt to be bent at the ends of the hanger, which bend, although slight in itself, if sufficiently repeated will eventually cause the copper of the wire to crystallize and the wire will finally break, this being due to the sudden change from the flexible wire to the stiff hanger. The object of my invention is to provide a means for supporting the wire which will do away with the constant bending of the wire at these points and also to provide means which will permit a slight longitudinal movement of the trolley-wire.

The hanger constructed in accordance with my invention is suspended from an insulated block B, which has embedded within it the shank C of a supporting device which carries a pulley D, or may, if desired, simply have a rivet passed therethrough in the manner illustrated in Figs. 5 and 6. The insulated block B has a groove or neck about its middle, which is considerably smaller in diameter than the remainder of the block. This neck C' is surrounded by two semicircular collars E, which

are intended to take up the wear due to the contact of the suspending wires and thus prevent the wear of the insulating-block. The suspending wires are fastened about these collars in any suitable manner. One form of suspension is shown in Fig. 2, in which a short wire is passed on one side of one of the collars and the suspending wire upon the other side of the other collar, the ends of the short wire being bent about the suspending wire.

Two ears F are attached to the trolley-wire A at a short distance each side of the suspension-point and are soldered or otherwise secured to the wire, and have upon their upper surface an eye F², which is conical in shape and has the smaller end disposed inward. The eye F² is placed near one end of the ear, that end which is placed toward the supporting device above described.

A wire G is passed through the small end of the ear and is then bent back upon itself and entered in the large end F' of the ear. This will prevent the end of the wire from being pulled through the small end of the ear and furnishes a quick and reliable means of fastening the wire to the ear. The wire G is made of such a length that when fastened to the two ears F there will be but little slack—that is, the wire lies nearly parallel with the trolley-wire. This wire G is passed over the pulley D or other device by which the hanger is suspended. This method of hanging a trolley-wire permits the wire to bend between the two ears, and, in fact, makes it flexible in all directions.

The ears F are comparatively short, and in consequence of this there will be no tendency of the wire to bend or buckle at the end of the ears, and the trolley-wire is also permitted to have a little longitudinal motion, if necessary. This, however, is an unimportant matter, and the suspending wire may, if desired, be made of two separate wires G', each extending from an ear F to the suspending device C', as shown in Figs. 5 and 6. This will not permit any longitudinal movement of the trolley-wire, but will make it perfectly flexible.

Instead of using a pulley D, as shown in Fig. 1, an eye similar to the eye H, as shown in Fig. 7, may be substituted, the wire or wires G or G' passing through the same.

Figs. 5 and 6 also show a rivet or pin I, passing through two lugs I' upon the suspending-bracket C'. This form of suspension will not be expensive, and will render the trolley-wire as flexible at the point of support as at any other point. It will do away with the constant bending and buckling strain at this point, and thus prevent the breakage of the wire.

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

1. The combination of a conductor or trolley-wire, a flexible strand or wire, means for 15 connecting it to the trolley-wire at each end and a suspending device, the flexible strand having a loose connection with said suspending device whereby the strand may move freely upon the suspending device at the point 20 of connection in response to the vibrations of the trolley-wire, substantially as described.

2. A hanger for trolley-wires, consisting of ears soldered or otherwise attached a short distance apart to the trolley-wire, and having 25 sockets or wire-attaching devices at the inner ends thereof, and a flexible wire attached to said eyes, said wire being slightly longer than the length of the trolley-wire between said ears, substantially as described.

30 3. The combination of a conductor or trolley-wire, ears attached to the conductor a short distance apart, a strand or wire connecting these ears, and a flexible suspending device, the strand having a loose connection 35 with the suspending device whereby the said flexible strand or wire may move freely upon the suspending device at the point of connec-

tion in response to the vibrations of the trolley-wire, substantially as described.

4. A hanger for trolley-wires, consisting of 40 two ears attached to the trolley-wire and placed a short distance apart, a socket on the inner end of each ear adapted for attachment of a wire, a flexible wire having its ends fixed to said sockets and having a slight slack, and 45 a pulley supporting said wire and carried by the suspension device, substantially as described.

5. A hanger for trolley-wires, comprising an ear adapted to be secured to the wire by sol- 50 dering or otherwise, said ear having a conical eye or socket, the smaller end of the socket extending toward the suspending-point, and a suspending wire having its end passed into the smaller end of the socket and then doubled 55 upon itself and entered in the large end of said socket, substantially as described.

6. A suspension device for trolley-wires, consisting of an insulating body having embedded therein a shank carrying a wire-sup- 60 porting device, said body having a recessed neck, and protecting half-collars surrounding said neck and adapted to receive the suspension-wires, substantially as described.

7. A hanger for trolley-wires, comprising a 65 longitudinal flexible strand, ears or brackets carried by said strand at its ends and adapted to be secured to a trolley-wire, and means for suspending the hanger by the flexible strand, substantially as described.

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Witnesses:

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