

(No Model.)

T. J. McTIGHE.
TROLLEY WIRE HANGER.

No. 471,491.

Patented Mar. 22, 1892.

Fig. 1.

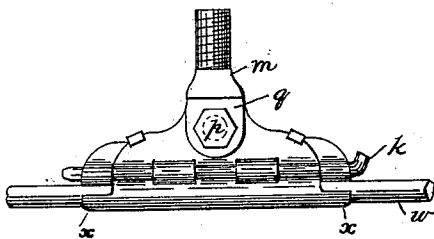


Fig. 2.

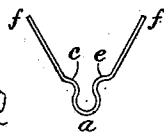


Fig. 3.

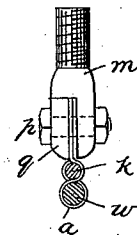


Fig. 4.

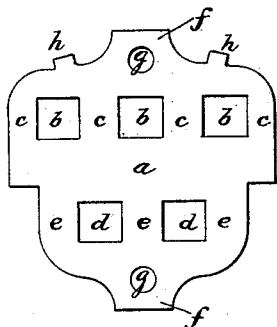


Fig. 5.

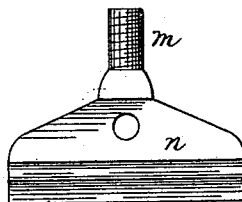
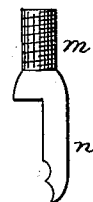


Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMAS J. MCTIGHE, OF NEW YORK, N. Y.

TROLLEY-WIRE HANGER.

SPECIFICATION forming part of Letters Patent No. 471,491, dated March 22, 1892.

Application filed July 11, 1891. Serial No. 399,216. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. MCTIGHE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Trolley-Wire Hangers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to suspension devices for the trolley-wire of electric-railway systems, such devices being known as "trolley-wire hangers."

The object of the invention is to construct that part of the hanger which holds the trolley-wire as cheaply as possible while giving to it the requisite strength and facility for attachment.

My invention consists in the construction of the hanger and the blank therefor, substantially as hereinafter fully described and claimed.

In the drawings which form part of this specification, Figure 1 is a side elevation of my improved hanger in position on the trolley-wire and ready for attachment to any desired style of insulator. Fig. 2 is an end view of the sheet-metal clip which characterizes my invention, ready to be closed upon the trolley-wire. Fig. 3 is an end view of the complete device shown in Fig. 1. Fig. 4 is a plan of the sheet-metal blank which, after suitable creasing or bending, forms the clip. Figs. 5 and 6 are respectively a side and end elevation of the hanger-bolt modified for use on curve work.

In carrying my invention into effect I proceed as follows: I first form by punching or otherwise a blank of sheet metal of the general character shown at Fig. 4. Referring to this figure, the blank along its center *a* is continuous and of the width sufficient to fold substantially around the largest size of trolley-wire used. Outside this width the metal is removed by punching or otherwise, so as to leave on one side the openings *b* and tongues *c* and on the other side the openings *d* and tongues *e*. Beyond these openings the blank converges to form the ears *f*, which are made with the corresponding bolt-holes *g*. I prefer

to make the tongues on each side slightly narrower than the openings on the opposite side, so that when bringing the clip to clamping position the parts will not bind. It will be observed that the two rows of openings *b* and *d* alternate, so that a tongue *c* or *e* is opposite an opening *b* or *d*. In some cases also I make the blank with the lugs *h*.

For conveniently attaching the clip I give it a shaping to the form shown at Fig. 2, in which the body *a* is bent to spring easily onto the trolley-wire, and the tongues *c* and *e* are bent toward each other to an extent approximating a half-circle. After springing the clip onto the trolley-wire *w* the whole is compressed together till the tongues *c* and *e* interlace by the curved tongues on each side passing through the corresponding openings on the opposite side, thus leaving a keyway for the insertion of the locking-key *k*, usually a piece of stout wire; but before inserting the key I prefer to draw the ears *f* together and fit them to the hanger-bolt *m* by passing the bolt *p* through the former and its clamp *q*. The latter can then be permanently tightened, attached to its insulator, and hung on its span-wire or bracket-arm. Thus all preliminary work of hanging the trolley-wire and straining it to final position can be done, while giving it a perfectly reliable support in the interim. The final tightening is done by driving home the key *k*, whose thickness will be determined by the size of the trolley-wire. The driving of this key causes the part *a* of the clip to fold tightly around and take a powerful frictional grip on the trolley-wire sufficient to absolutely prevent subsequent slipping. If the lugs *h* are used, they are folded down, as shown in Fig. 1.

For curve work, when a hanger requires great stiffness to permit the use of the goose-neck form of carrier, I form the hanger-bolt *m* with the broad heavy guard *n*, which extends down and braces the clip on the inside of the curve formed by the trolley-wire at a curve or turn-out in the railway-line. This guard *n* I prefer to make heavy enough to remain rigid and vertical when the wire is hauled into curved line.

Besides the advantages of cheapness and facility of application already set forth, my hanger has the additional advantage that in

the event of the necessity arising for taking up slack in the trolley-wire by removing the key *k* temporarily the wire is free to be tightened up to the desired extent, and then the keys may be replaced, and during this time there is no possibility of the trolley-wire falling to the ground. Again, if after considerable use the clip should relax its frictional grip on the trolley-wire, the key may be removed and replaced by a thicker one, thus again drawing the clip tight.

For straight-line work a moderate degree of tightness is sufficient. For curve work, where the pull-off or strain wires which form the curve are on lines not corresponding to a radius of the curve, an extra strong grip can be taken by suitable change in the size of the key *k*. By slightly grinding the under edges of the clip, as shown at *x*, the trolley will ride past the clips without trouble or sparking.

I claim as my invention—

1. A clip for trolley-wire hangers, comprising a metal plate adapted to be folded up around the wire and having at its meeting portions one or more registering tongues and slots forming a keyway, in combination with a suitable key.

2. The described sheet-metal blank for trolley-wire hangers, having the solid center *a*,

slots *b* and *d*, tongues *c* and *e* in alternating positions, and perforated ears *f*.

3. The trolley-wire hanger comprising a sheet-metal clip adapted to be folded up from beneath around the trolley-wire and having at its meeting portions one or more registering tongues and slots forming a keyway, and registering bolt-holes, in combination with a suitable hanger-bolt having means of clamping the two folded ends, and a suitable key to enter the keyway and tighten the clip on the wire.

4. The trolley-wire hanger comprising a sheet-metal clip adapted to be folded up from beneath around the trolley-wire and having at its meeting portions one or more registering tongues and slots forming a keyway and registering bolt-holes, in combination with a locking-key and a hanger-bolt provided with a broad downward extension or guard, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS J. McTIGHE.

Witnesses:

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