(No Model.)

F. MANSFIELD.

ATTACHMENT FOR SPAN WIRES FOR SUSPENDED ELECTRIC CONDUCTORS.

No. 442,232. Patented Dec. 9, 1890.

Fig. 1.

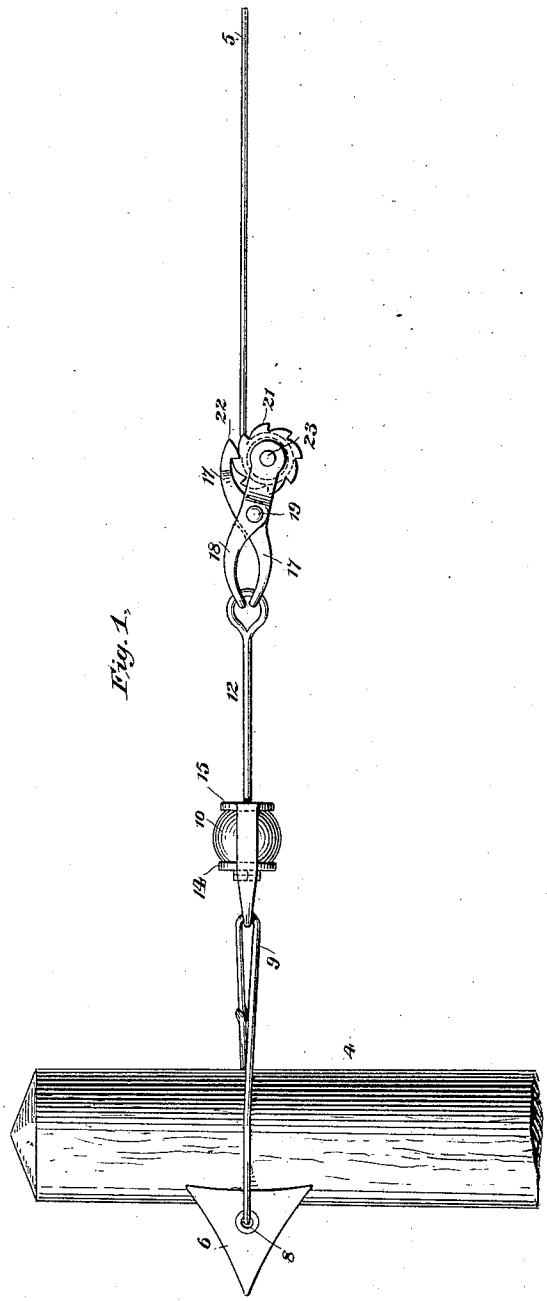
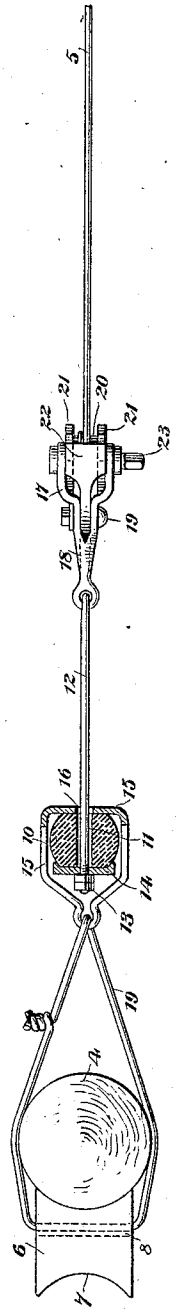


Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK MANSFIELD, OF NEW YORK, N. Y.

ATTACHMENT FOR SPAN-WIRES FOR SUSPENDED ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 442,232, dated December 9, 1890.

Application filed April 26, 1890. Serial No. 349,607. (No model.)

To all whom it may concern:

Be it known that I, FRANK MANSFIELD, a citizen of the United States, residing at New York, county and State of New York, have invented certain new and useful Improvements in Attachments for Span-Wires for Suspended Electric Conductors, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the drawings forming part of this specification.

My invention relates to attachments for span-wires which are used in electric railways for suspending overhead conductors or wires.

The invention has especial reference to means whereby a cross-wire may be readily raised or lowered and tightened, and means whereby the humming or buzzing sound given out by the span-wire-supporting poles may be deadened or destroyed.

In the accompanying drawings, illustrating my invention, Figure 1 is a side view of the apparatus looking in the direction of the length of the suspended conductors, which are not shown. Fig. 2 is a top plan view of the apparatus with the sound-deadening device shown in horizontal section.

In the said drawings like numbers of references indicate corresponding parts throughout.

Referring to the drawings, 4 designates an ordinary pole, which is usually placed at one side of the railway-track for supporting the span-wire 5, by means of which the working-conductors are suspended in proper position.

In order to admit of a ready vertical adjustment of the span-wire 5, I provide what I term a "creeper," which in the present construction consists in a polygonal-shaped block 6, the faces 7 of which are curved so as to conform to the curvature of the pole upon which it is mounted. This block is mounted upon the side of the pole opposite that approached by the span-wire, and the horizontal axis of the block about which it rotates is so connected with the span-wire that as the block is rolled up or down on the pole it may accordingly raise or lower the span-wire. In the present construction the block 6 is provided with an axial perforation 8, through which is passed a straightened portion of a looped wire 9, which is disposed horizontally and surrounds the pole, as clearly indicated in the drawings. This loop 9 may obviously be connected directly to the span-wire 5 or indirectly thereto through the intermediate mechanism hereinafter described. There are many simple ways in which the span-wire may be connected to the axis of the block or creeper so that the vertical adjustment of the creeper on the pole may raise or lower the wire.

In overhead systems of electric railways the poles supporting the cross or span wires give out a humming or buzzing noise, which is in part caused by the vibration of the wires and by the trolleys traveling over the tightly-strung conductors. This humming noise becomes greater as the trolleys become worn, and it is a great desideratum that this noise be prevented. To prevent or deaden this humming of the poles, I employ a sound-deadening device, or what may be called an "anti-hum," which consists, essentially, of a body 10, made of a material that will deaden or prevent the passage of the sound over it, and which is interposed, preferably, in the span-wire connection at a point intermediate the pole and the trolley-wire.

In the construction shown the body 10, which is preferably made of soft rubber, is perforated at 11, through which perforation extends a link 12, which constitutes a part of the cross-wire 5. Upon the end of link 12 is removably mounted by means of the nuts 13 a plate 14, against which one end of the body 10 rests, the other end thereof resting against a bracket 15, which is perforated at one end thereof at 16, in order to receive the link 12, while the other end of the bracket is swiveled or movably connected to the loop 9. By removing nuts 13 and plate 14 the sound-deadening body 10 may easily be removed and replaced by another one in case it should become worn or inefficient.

In order to readily tighten the span-wire, I have provided the device now to be described.

17 and 18 are two members which are crossed on each other and pivoted at 19 at such crossing-point, like a pair of scissors. The corresponding ends of these members are loosely

attached to the end of the link 12 by means of eyes formed in the ends of such members and an eye at the end of the link, as clearly indicated in the drawings. One of these members, preferably the member 18, is provided at one end with a drum 20, which is suitably mounted thereon, so as to rotate, and this drum has at each end thereof a ratchet 21, which is engaged by the pawl 22, formed on the corresponding end of the member 17. The span-wire 5 is wound upon the drum 20, one end of the shaft 23 of which is provided with an angle-head adapted to receive a key by means of which the drum may be turned in order to loosen or tighten the span-wire, the pawl 22 acting to retain the drum in its adjusted position. The tension on the wire 5 tends to move the shaft 23 of the drum and the pivot 19 into the same horizontal plane, and this tendency causes the pawl 22, which is pivoted at 19, to press tightly against its ratchet, so that the greater the tension on the span-wire the more firmly will the pawl be held in engagement with the ratchet. This same action may be obtained without having the member 18 extended beyond the pivot 19—that is to say, all of the member 18 may be dispensed with except the portion constituting the drum-carrier. There are many ways in which this drum and its ratchet and pawl may be made and the same result obtained.

Having thus described my improvements in attachments for span-wires for suspended electric conductors, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a device for raising and lowering span-wires, the combination, with a pole, of a horizontally-arranged polygonal-shaped block mounted upon the outer face of the pole and adapted to be moved up and down thereon by rotation of the block, and a span-wire connected to the block, so as to be vertically adjusted by the movement of the block, substantially as and for the purpose described.

2. In a device for raising and lowering span-wires, the combination, with a pole having the outer face thereof rounded, of a polygonal-shaped block mounted upon the rounded side of the pole and adapted to be rotated on its horizontal axis, so as to be moved up and down on the pole, the faces of the block being curved to conform to the curvature of the pole, and a span-wire connected to the block and holding the same in engagement with the pole, substantially as and for the purpose set forth.

3. In a device for raising and lowering span-wires, the combination, with a pole, of a block mounted upon the outer face of the pole and provided with a horizontal perforation forming the axis of rotation thereof, a horizontal shaft extending through the perforation of the block, and a span-wire connected with the shaft of the block and holding the block in engagement with the pole, substantially as and for the purpose set forth.

4. In a device for raising and lowering span-wires, the combination, with a pole having a polygonal-shaped block 6 mounted upon the outer face of the pole and adapted to be rotated to adjust the block vertically on the pole, and a span-wire 5, connected with the block 6 and holding it in engagement with the pole, whereby the vertical adjustment of the block 6 on the pole may vertically adjust the span-wire, substantially as and for the purpose set forth.

5. In a device for raising and lowering span-wires, the combination, with a pole 4, of a polygonal-shaped block 6, formed with a horizontal perforation 8 and having the faces thereof curved, a loop 9, passed around the pole and through the perforation 8 of the block, and a span-wire connected with the loop 9, substantially as and for the purpose set forth.

6. In a sound-deadening device for span-wires for suspended electric conductors, the combination, with the span-wire, of a sound-deadening body, such as 10, interposed in the span-wire, so as to prevent the sound from traveling thereover, substantially as and for the purpose set forth.

7. In a sound-deadening device for span-wires for suspended electric conductors, the combination, with the span-wire having disconnected overlapping portions, of an elastic sound-deadening body, such as 10, interposed between the overlapping portions, substantially as and for the purpose set forth.

8. In a sound-deadening device for span-wires for suspended electric conductors, the combination, with a pole and a bracket 15, attached thereto, of a span-wire 5, having a portion thereof overlapping the bracket, and a sound-deadening body 10, interposed between said bracket and the overlapping portion of the span-wire, substantially as and for the purpose set forth.

9. In a sound-deadening device for span-wires for suspended electric conductors, the combination, with a pole and a bracket 15, connected therewith and formed with the perforations 16, of a span-wire 5, having a portion thereof extending through the perforations 16 of the bracket and overlapping the same, a plate 14, mounted upon the end of the overlapping portion of the span-wire 5, and a sound-deadening body 10, interposed between the plate 14 and the bracket 15, substantially as and for the purpose set forth.

10. In a device for tightening wire, the combination, with a swinging member provided at its free end with a pawl, of a second member pivoted to the first and provided at its free end with a drum having a ratchet engaged by the said pawl, and a wire wound upon the drum, whereby tension on the wire may hold the pawl in engagement with the ratchet, substantially as and for the purpose set forth.

11. In a device for tightening wire, the combination, with two crossed members pivoted together at the crossing-point and having a

corresponding end of each hinged to a point, the free end of one member being provided with a drum having a ratchet and the free end of the other member being provided with a pawl engaging said ratchet, of a wire attached to said drum, substantially as and for the purpose set forth.

12. In a device for tightening wire, the combination, with a swinging member 17, having a pawl 22, of a second member pivoted at 19 to the member 17 and provided with a drum 20, having a ratchet 21, engaged by the pawl 22, and a wire 5, attached to said drum, substantially as and for the purpose set forth.

13. In a device for tightening wire, the combination, with a swinging member 17, provided with a pawl 22, of a second member pivoted at 19 to the said member 17 and provided with a drum 20, having a shaft 23, formed with an angle-head for receiving a key, a ratchet 21 for the drum, engaged by the pawl 22, and a wire 5, attached to the said drum, substantially as and for the purpose set forth.

14. In a device for tightening wire, the combination, with two swinging members 17 and 18, crossed on each other and pivoted at 19, the member 18 being forked at its free end and provided with a drum 20, having a ratchet 21, and the member 17 being formed at its free end with a pawl 22, engaging said ratchet, and a wire 5, secured to the drum 20, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal, this 22d day of April, 1890, in the presence of the two subscribing witnesses.

F. MANSFIELD. [L. S.]

Witnesses:
PAUL F. C. TUCKER,
WILLIS FOWLER.