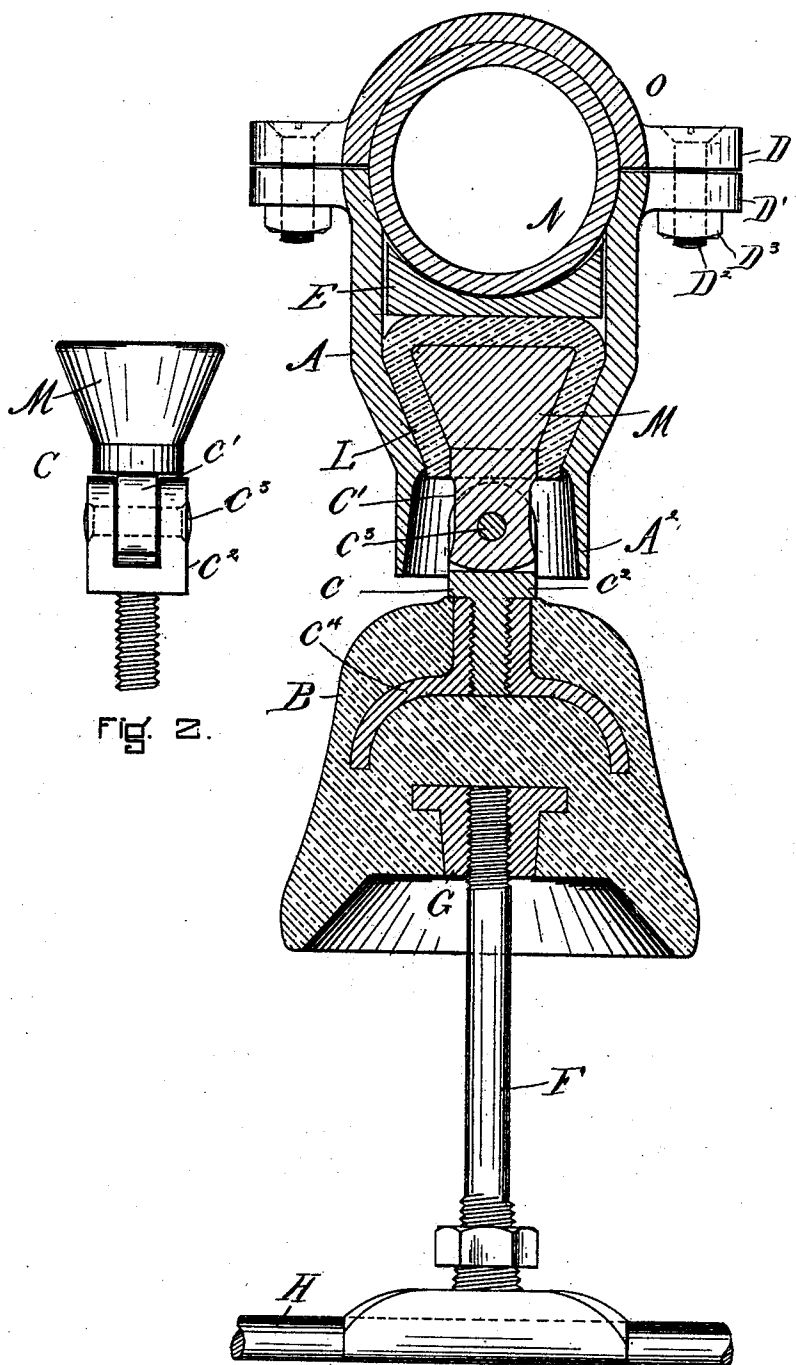


(No Model.)

C. T. LEE.
TROLLEY WIRE HANGER.

No. 467,940.

Patented Feb. 2, 1892.



WITNESSES.

Robert Wallace,
C. E. Hutton

Fig. 1.

INVENTOR.

C. Tennant Lee
by ^{Wm} H. MacLeod
his Atty.

UNITED STATES PATENT OFFICE.

CHARLES TENNANT LEE, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO THE GOULD & WATSON COMPANY, OF SAME PLACE.

TROLLEY-WIRE HANGER.

SPECIFICATION forming part of Letters Patent No. 467,940, dated February 2, 1892.

Application filed March 20, 1891. Serial No. 385,730. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TENNANT LEE, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Trolley-Wire Hangers or Insulators, of which the following is a specification.

The trolley-wire hanger or insulator which I have shown and now shall proceed to describe is one which by its construction is specially fitted for employment with what is known as "bracket-arm construction," the latter having a yard or arm projecting laterally from a post, standard, or other support located at one side of an electric railway or at one side of the street on which such railway is situated; but the invention is not necessarily restricted in application to such employment. In the case of a line-wire sustained by laterally-projecting arms it is difficult to secure complete and permanent insulation of the line-wire. When a hanger or insulator is suspended over the line of a railway by wires stretching from opposite sides of the way, it is easy to effect what is called "double insulation" by introducing insulating-sections into the supporting cross-wires, and thereby in the event of a defect or break in the insulation of the line-wire at the hanger a leakage of the current through the hanger and supports is prevented. Where a hanger is suspended from a yard or horizontal arm fixed at one end only to a standard or post, it is very difficult, however, as will be understood by those practically acquainted with electrical engineering, to insure against leakage resulting from defective insulation or a failure of insulation at the hanger.

My object, therefore, is to provide a compact, simple, and efficient device for supporting properly a line-wire adapted for use in connection with a yard or horizontally-extending arm such as has been mentioned, and which shall provide for effecting a double insulation such as is desirable.

A practical embodiment of my invention is presented in the accompanying drawings.

In the drawings, Figure 1 is a view in vertical section illustrating an embodiment of my invention. Fig. 2 is a view in detail of

the coupling hereinafter referred to and described.

The hanger or insulator illustrated consists of two main portions, one being the supporting portion lettered A, which is provided with means for attaching the hanger to the support, and the other being the wire-sustaining portion B, which carries the wire-holding device F, by which the line-wire H is held. The two portions A B are connected by a coupling C.

The wire-holding device F may be constructed in any known form and connected with the wire H in any suitable manner. I have for convenience shown a form of clamp which is fully shown and described in United States Letters Patent No. 442,446, granted December 9, 1890, and to which reference may be had.

The portion B is or may be the usual bell-shaped body of insulating material, having in the lower part thereof the socket G, into which is screwed the threaded upper end of the stem of the wire-holding clamp F. In the upper part of portion B is the socket C¹, which is separated from the socket G by intervening material of the body B, and is threaded for the reception of the screw-threaded stem of the lower member C² of the coupling C. The coupling C is formed of two members C' C², the meeting ends of which are formed with lugs, as shown most clearly in Fig. 2, and united by a rivet C³, the ends of the said lugs being rounded, as shown, the object of this construction being to permit a movement of the lower portion of the hanger in the direction of the line-wire. The member C' of the coupling preferably is formed with an enlarged or conical head M, as shown, and the interior walls of the body of the upper portion A of the hanger are by preference shaped to correspond approximately to the exterior of the said head. The said head and the adjacent part of the member C' are incased by a coating of insulating material L, which completely isolates the coupling from the portion A.

In the illustrated construction the upper portion A of the hanger is fitted with a clamp, whereby it may be attached conveniently to

the yard or supporting-arm N. (Shown in Fig. 1 in section.) One member of this clamp is formed by the upper part of the portion A itself, this part being hollowed, as shown, to fit the under side of arm N. A movable member or cap-plate O, similarly hollowed to fit the upper side of the arm, is applied, as shown, the body of portion A, as well as the cap-plate O, being formed with corresponding laterally-extending lugs D' D', through which pass bolts D², having thereon nuts D³ for drawing together the parts upon the arm. A filling-block E, suitably concaved on its upper side to fit the under side of arm N, is placed within the body of portion A and rests upon the insulating-covering upon the end of the head M of member C' of the coupling, the under side of this block affording a flat bearing for the upper end of the coupling and obviating tendency to improper tilting or lateral movement. A skirt A² at the lower side of portion A surrounds and incloses the joint of the coupling.

By making the hanger in two separate portions and uniting them by an intermediate coupling I am enabled to provide readily for the employment of insulating material at both ends of the coupling, thus providing for cheaply and practically securing an efficient double insulation of the line-wire.

Heretofore in an insulating-support for electric conductors it has been proposed to secure double insulation by forming the support in two main parts, one of which parts is the bell or insulator proper and has the wire-holding device applied thereto, while the other of such parts is constructed as a sleeve which is formed with an internally-threaded tubular extension, into which the upper part of the bell is screwed, the said sleeve being fitted to the exterior of a block of insulating material that is slipped upon the supporting-wire. In this construction one of the points at which insulation is effected is between the sleeve and the supporting-wire, while the said sleeve and the portion carrying the wire-holding device are directly connected.

In the improved construction which I have shown and described, and mean to cover by my statement of that which I claim as of my invention, I rely for effective double insulation upon having separated from each other the attaching portion of the support and the portion thereof carrying the wire-holding device and having insulating material inter-

posed between the ends of the coupling, which links together the said two portions and the said two portions themselves. The joint in the coupling renders the same flexible, so as to permit of the desired movement of the lower portion of the hanger in the direction of the length of the wire, while at the same time the coupling is practically rigid in a direction at right angles to the wire—that is, crosswise of the wire. The screw-threaded connection between the lower member of the coupling and the lower portion B of the hanger enables the said lower portion to be disconnected readily from the upper portion for any desired or necessary purpose.

What I claim is—

1. A trolley-wire hanger having a portion for attachment to a suitable support, a portion having a wire-holding device, and a coupling between the said two portions and having insulating material interposed between the ends thereof and the said attaching portion and wire-holding device, all substantially as described.

2. A trolley-wire hanger having a portion for attachment to a suitable support, a portion having a wire-holding device, and a coupling between the said two portions, which is insulated at both of the ends thereof and flexible in the direction of the wire, all substantially as described.

3. A trolley-wire hanger having a portion for attachment to a suitable support, a portion having a wire-holding device, and a coupling between the said two portions, which is insulated at both of its ends and is composed of members pivotally connected to each other in a manner to permit movement in the direction of the wire, all substantially as described.

4. A trolley-wire hanger having a portion for attachment to a suitable support, a portion having a wire-holding device, a coupling between the two portions, which is insulated at both of its ends and is composed of members pivotally connected to each other in a manner to permit movement in the direction of the wire, said coupling having a separable connection with one of the said portions to permit of disconnection, all substantially as described.

CHARLES TENNANT LEE.

Witnesses:

WM. A. MACLEOD,
ROBERT WALLACE.