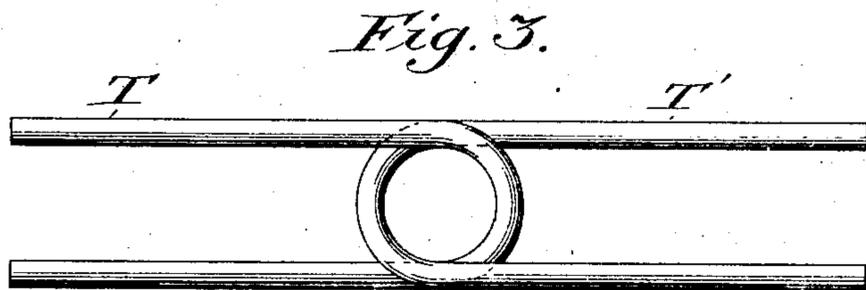
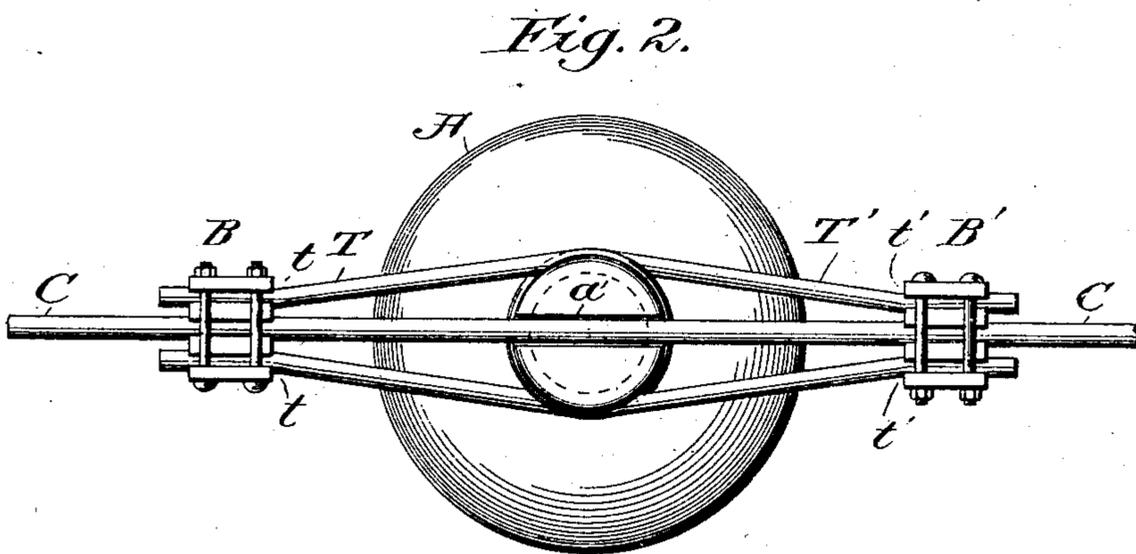
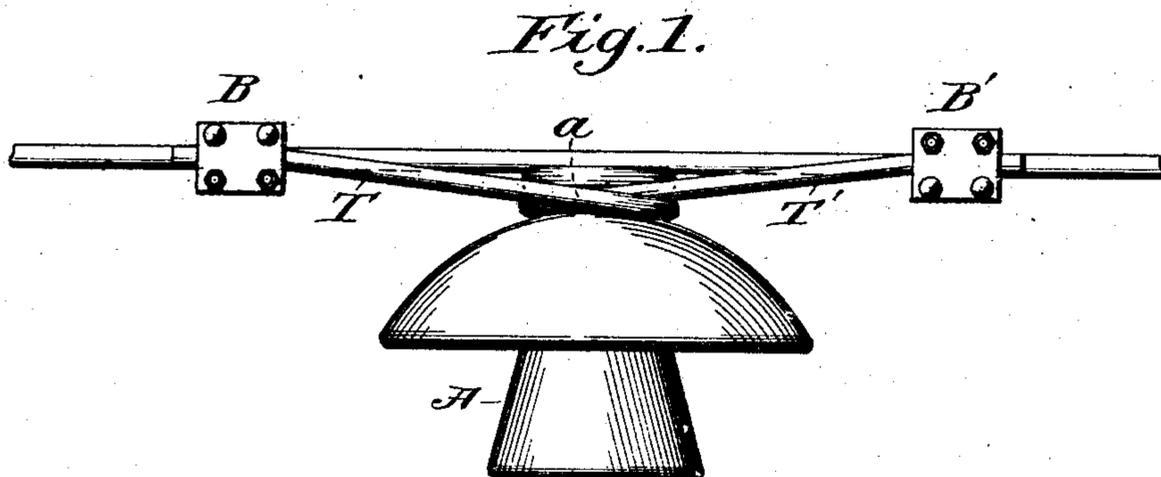


J. D. HILLIARD.  
LINE SUPPORT.  
APPLICATION FILED NOV. 1, 1906.

914,837.

Patented Mar. 9, 1909.



Witnesses:  
*Geo. E. Sargent*  
*E. Edmoustop*

Inventor:  
*John D. Hilliard*  
by *Edward E. Blum*  
Att'y.

# UNITED STATES PATENT OFFICE.

JOHN D. HILLIARD, OF ALBANY, NEW YORK.

## LINE-SUPPORT.

No. 914,837.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed November 1, 1906. Serial No. 341,635.

To all whom it may concern:

Be it known that I, JOHN D. HILLIARD, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented a certain new and useful Improvement in Line-Supports, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to line supports, and especially to the means for attaching the line conductors to the insulators.

The object of my invention is to provide means for this purpose which shall be positive and reliable in service, easy to manufacture, and economical both as to first cost and subsequent maintenance.

Briefly stated, my invention comprises a pair of tie wires for each insulator secured to the line wire on the opposite sides thereof by clamps. These two tie-wires pass around the neck of the insulator from the two sides, being interlaced, that is one looped through the other. Thus, should the insulator break or the line wire break, or both, the tie-wires would still hold, and the line be maintained in the air.

My invention is shown in the accompanying drawings in which—

Figure 1 is a side view of a single insulator, with a portion of the main conductor, a pair of clamps, and the tie-wires appertaining thereto. Fig. 2 is a plan view of the same. Fig. 3 is a view of the interlaced tie-wires removed.

Referring to the drawings, A is an insulator of the type usually employed on high tension transmission lines, having a reduced neck *a* above its petticoat or petticoats, and a groove *a'* in its crown to receive the line conductor C. The conductor is held in the groove by means of the tie-wires, T and T', looped around the neck *a* from opposite sides, and having their ends *t* and *t'* secured to the line conductor by the clamps B and B', respectively.

Fig. 3 shows the tie-wires removed from the other parts, and illustrates particularly the method of interlacing them around the neck of the insulator. After examining this and the preceding two figures it will be sufficiently evident that the breakage of the insulator would not affect the line suspension,

nor would the severance of the line conductor between the clamps.

Having described my invention what I claim and desire to secure by Letters Patent is:

1. A conductor, a support therefor, and means for attaching the conductor to the support comprising a tire-wire engaging the support and a clamp securing the tie-wire to the free ends of the conductor.

2. A conductor, a support therefor, and means for attaching the conductor to the support comprising a pair of tie-wires looped around the support from opposite sides, and a pair of separate clamps for attaching the ends of the tie-wires to the conductor.

3. A conductor, a support therefor, and means for attaching the conductor to the support comprising a pair of tie-wires looped around the support from opposite sides with the two loops interlaced, and separate clamps for attaching the tie-wires to the conductor.

4. A conductor, an insulator, and two U-shaped tie-wires having their loops interlaced around the insulator, and their open ends extending in opposite directions along the conductor, together with means securing said ends to said conductor; whereby the breakage of the insulator and of the conductor will still leave the opposite spans linked together by means of the tie-wires.

5. A conductor, an insulator, a tie wire for connecting the same, and a clamp securing the free ends of the tie wire and the conductor in parallel relation in the same plane.

6. A conductor, an insulator, a tie wire for connecting the same, and a clamp securing the conductor to and intermediate the free ends of the tie wire in parallel relation therewith and in the same plane.

7. An insulator having a body, a head and a reduced neck connecting the same, together with a conductor supported in a groove in the top of said head, a pair of tie wires interlaced around the neck, and clamps securing the free ends of the tie wires to the conductor on opposite sides of the insulator, whereby the conductor is held down on the head of the insulator.

8. A conductor, an insulator supporting the same, a pair of U-shaped tie-wires having their loops interlaced around the insulator and their ends extending in opposite direc-

tions therefrom, together with clamping means securing said ends to the conductor on opposite sides of the insulator.

5 9. An insulator having a body, a head and a reduced neck connecting the same, in combination with a conductor supported in a groove in the top of said head, a pair of oppositely extending tie-wires interlaced around the neck, and means securing the ends of the

tie-wires to the conductor on opposite sides 10 of the insulator whereby the conductor is held down on the head of the insulator.

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

JOHN D. HILLIARD

Witnesses:

E. EDMONSTON, Jr.,

G. E. RUFF

Correction in Letters Patent No. 914,837.

It is hereby certified that in Letters Patent No. 914,837, granted March 9, 1909, upon the application of John D. Hilliard, of Albany, New York, for an improvement in "Line-Supports," an error appears in the printed specification requiring correction, as follows: In line 63, page 1, the words "free ends of the" should be stricken out and inserted after the word "the" in line 62, same page; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 6th day of April, A. D., 1909.

[SEAL.]

C. C. BILLINGS,

*Acting Commissioner of Patents.*