(No Model.)

P. B. DELANY.

ELECTRICAL CONDUCTOR.

No. 290,753. Patented Dec. 25, 1883.

Fig. 1.

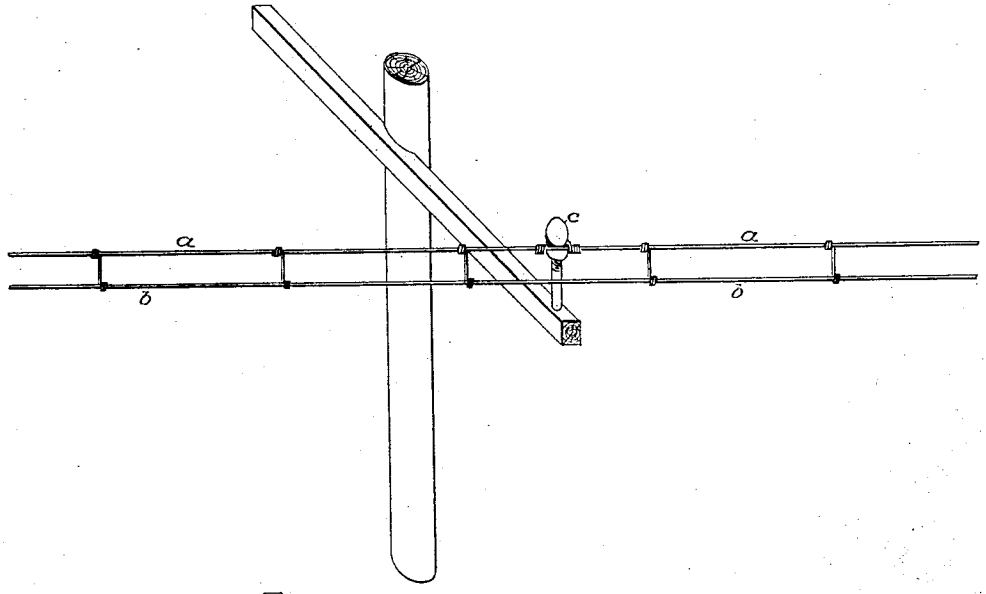


Fig. 2.

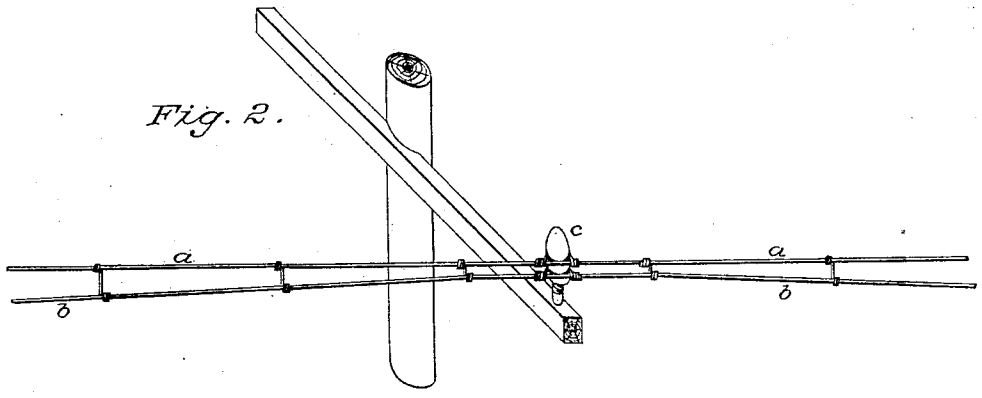
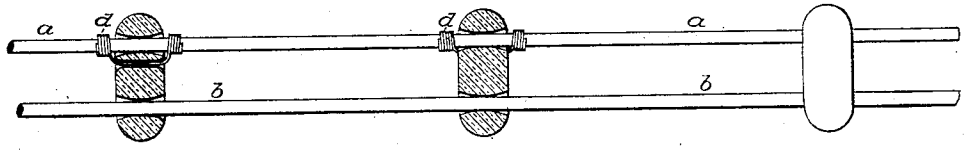


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ELECTRICAL CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 290,753, dated December 25, 1883.

Application filed September 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, PATRICK B. DELANY, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Electrical Conductors, of which the following is a specification.

The object of my invention is to associate in a practical and advantageous manner two electrical conductors—one of high tensile strength, to bear the necessary strain to which such conductors are subjected, and the other of relatively low resistance, to give a conductor of large capacity.

I am aware that heretofore various methods for this purpose have been employed. For instance, it has been proposed to electroplate a coating of copper upon an iron or steel conductor, to surround a central strain-conductor with copper wires either braided or wound spirally around it, to wind a ribbon of copper spirally around a central strain-wire, to inclose a steel and copper wire in a body of insulating material so as to form a continuous rope, and to accomplish the same result in other ways. All these plans are well known to those skilled in the art, and are disclaimed herein.

My invention consists in the use of an electric conductor of high tensile strength—such as iron, steel, or phosphor-bronze—from which another conductor of low resistance—such as copper—is suspended.

My invention contemplates the suspension of the conductor of low resistance by means of perforated buttons through which the two conductors are threaded, wires or fingers extending from the strain-conductor to the copper conductor, suitable ropes of fibrous material, or other means. The connecting or suspending devices may be either conductors or non-conductors. When they are conductors, the two wires may be used in the same circuit as a compound conductor, and when the connecting devices are insulators the two conductors may be used separately or may be connected together as a compound conductor, as may be desired. Where the connecting devices are conductors of electricity, I preferably make them of brass, nickel, phosphor-bronze, or other material that will not set up galvanic action and a consequent corrosion of the contact. Where the devices are insulators, I preferably employ buttons of glass, porcelain, or other vitreous material, though, as above remarked, fibrous suspending-ropes may be used. My preference is to join the wires by perforated insulating vitreous buttons.

In the accompanying drawings, Figure 1 is a view of a portion of one of my improved conductors, showing its connection with the insulator on a telegraph-pole. Fig. 2 is a similar view. Fig. 3 is a detail view, showing the preferred manner of securing the insulating-buttons to the wires.

a is an iron, steel, phosphor-bronze, or other suitable electrical conductor of high tensile strength.

b is a conductor of low resistance—say copper—which is suspended from the strain-wire.

In Fig. 1 I have shown the copper wire suspended by means of wires or short bars of some metal—such as brass, nickel, or phosphor-bronze—that will not set up galvanic action. In this instance the strain-wire only is shown as secured to the insulator *c* on the pole; but both wires may be secured to a proper insulator, as illustrated in Fig. 2.

Fig. 3 shows the wires *a b* connected by a perforated button of porcelain or other vitreous material. These buttons may be of any desired shape, and the distance apart of the perforations may of course be changed to suit particular cases, if desired. Where such buttons are employed, a tie-wire, *d*, of non-oxidizable metal may be used to secure them in place. This wire may be passed through one or both of the perforations through which the conductors pass; or a small perforation may be formed in the button for its insertion, as shown in one of the buttons in this figure.

I am of course aware that it is common to suspend a cable or insulated bunch of conductors by means of a strain-wire.

I am also aware that in the patent of Goodyear, No. 33,700, of November 12, 1861, it has been proposed to suspend a copper conductor from a supporting-wire of greater tensile strength. In that arrangement, however, the strain-wire was not designed as a conductor of electricity; but, on the contrary, the construction described would prevent its use for such

a purpose, because said wire is not shown nor described as being insulated from its supports, and it is stated that the strain-wire need not be continuous. Further than this, the integrity of the copper conductor depends upon the interposition of rubber insulators between it and the supporting-links of iron wire.

I claim as my invention—

1. The combination, substantially as set forth, of a continuous insulated conductor, which also constitutes a strain-wire, and an electrical conductor of low resistance suspended therefrom at intervals along the line.

2. The combination, substantially as set forth, of a strain-wire, which also constitutes an electrical conductor, another conductor of relatively low resistance, and devices of non-galvanic and non-oxidizable material for suspending the last-named conductor from the first.

3. The combination, substantially as set forth, of an electric conductor of high tensile strength, another conductor of relatively low resistance, and perforated insulating vitreous buttons by which the wire of low resistance is suspended from the strain-wire.

4. A compound electrical conductor consisting of a strain-wire of high tensile strength and a wire of relatively low resistance suspended therefrom at intervals along the line.

In testimony whereof I have hereunto subscribed my name.

PATRICK B. DELANY.

Witnesses:

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