

(No Model.)

P. B. DELANY.  
ELECTRICAL CONDUCTOR.

No. 283,764.

Patented Aug. 28, 1883.

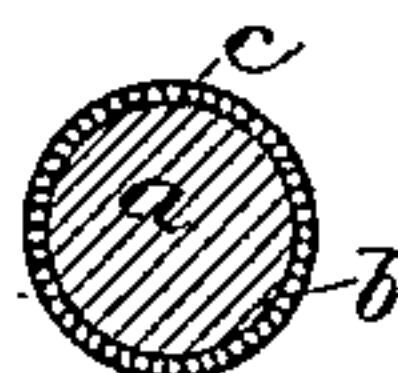
*Fig 1*



*Fig. 2.*



*Fig. 3.*



WITNESSES

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# UNITED STATES PATENT OFFICE.

PATRICK B. DELANY, OF NEW YORK, N. Y.

## ELECTRICAL CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 283,764, dated August 28, 1883.

Application filed May 10, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK B. DELANY, a citizen of the United States, residing in the city, county, and State of New York, have invented an Improved Electrical Conductor, of which the following is a specification.

My invention relates to that class of conductors in which a metal of high conductivity is used in connection with a metallic conductor of less electrical capacity, but capable of enduring the tensile strain to which telegraphic conductors are necessarily subjected.

Heretofore iron, steel, and perhaps other electrical conductors, have been coated with a deposit of copper. While such a method of manufacture gives the desired conductivity, in handling the wire the copper coating is liable to crack and perhaps to scale off. It has also been proposed heretofore to wrap an iron or steel core with a copper ribbon, and then to coat it with tin by immersing or passing it through a bath. Such a method of manufacture is, however, objectionable for the reason that the contact between the overlapping edges of the copper ribbon is liable to become impaired, and in handling the conductor the ribbon may spring or become loosened from the iron or steel core.

The object of my invention is to obviate these difficulties, and to produce a compound electrical conductor which may be manipulated with perfect freedom without fear of injury to it.

In the accompanying drawings, Figure 1 is a view, partly broken away, of a section of my improved conductor. Fig. 2 is a transverse section therethrough, and Fig. 3 is also a transverse section of a conductor without an insulating-coating.

I take an iron, steel, phosphor-bronze, or other core, *a*, capable of enduring the tensile strain and manipulation to which it may be subjected, and braid or otherwise form around it an envelope or sheath, *b*, of comparatively fine wire of small resistance, such as copper. This braiding may be like the fibrous insulating-braiding of the ordinary insulated wire, and may be done by any of the ordinary braiding-machines adapted for that purpose. The conductor thus formed may, if desired, be coated with tin, lead, or zinc, *c*, or other suit-

able metal or alloy of either high or low resistance, as may be thought best, by subjecting it to a suitable bath or other galvanizing process. Any other manner of enveloping or covering the strain wire or cord with a copper wire or wires may be employed, my invention consisting, primarily, in covering a strain wire or cord with a conducting envelope or sheath made up of copper wire. Such an envelope will be perfectly flexible, and will not be liable to break, crack, or separate from the core. I have said fine copper wire, as that is best adapted for the purpose; but the size of the wire may be varied within wide limits. The conductor may be covered with a coating of insulating compound, as illustrated in Figs. 1 and 2.

I claim as my invention—

1. A compound electrical conductor, consisting of the combination of a strain-wire conductor of high tensile strength and capable of enduring the necessary strains, and an envelope, sheath, or covering composed of comparatively fine wire of relatively low resistance.

2. The combination, substantially as set forth, of a strain-wire of requisite tensile strength, and an envelope, sheath, or covering of copper wire braided thereon.

3. An electrical conductor consisting of a central wire or conductor having braided thereon a sheath of comparatively fine wire of relatively low resistance.

4. The compound electrical conductor herein described, consisting of the combination of the strain-wire or central core of requisite tensile strength, a sheath of relatively fine copper wire braided thereon, and an outer coating of insulating material.

5. A compound electrical conductor, consisting of a strain-wire, its envelope or sheath composed of fine copper wire, and an outside coating of metal, substantially as set forth.

In testimony whereof I have hereunto subscribed my name this 7th day of May, A. D. 1883.

PATRICK B. DELANY.

Witnesses:

FRANK W. JONES,  
FREDK. P. JONES.