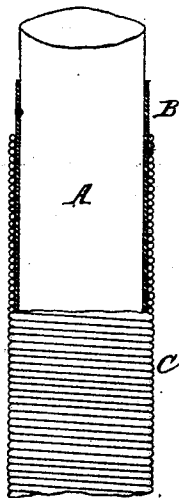


H. SPLITDORF.
INSULATING METAL WIRE.

No. 171,185.

Patented Dec. 14, 1875.



Witnesses.

Otto Shefeland.
Chas. Wählers.

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per
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Attors

UNITED STATES PATENT OFFICE.

HENRY SPLITDORF, OF NEW YORK, N. Y.

IMPROVEMENT IN INSULATING METAL WIRE.

Specification forming part of Letters Patent No. **171,185**, dated December 14, 1875; application filed July 30, 1875.

To all whom it may concern:

Be it known that I, HENRY SPLITDORF, of the city, county, and State of New York, have invented a new and useful Improvement in Insulated Metal Wire, which improvement is fully set forth in the following specification:

This invention relates to certain improvements in the manufacture of insulated wire for electrical purposes, its object being to thoroughly protect the same against atmospheric influences, and at the same time to securely fasten the insulating-silk or other covering to the same, producing a more perfect and permanent insulation than has hitherto been attained; and it consists in an insulated metal wire, which is first coated with shellac, or any other suitable gum, and after this coat has set a covering of silk or other thread is applied, and finally the wire is heated sufficiently to render the gum adhesive, and to cause the covering-threads to adhere firmly to the wire.

The usual method of insulating metal wire is by covering the same with silk thread wound close around the wire, and the silk thread, when properly wound, forms a perfect insulating material as long as the metal wire remains clean and free from oxidation; but if the wire begins to oxidize the oxide is liable to penetrate the silk threads, and the insulation is destroyed.

The drawing represents a sectional view of a wire coated and insulated according to my invention, in which the letter A represents the wire; B, the gummy coating, and C the wrapping of silk or other thread.

The wire is first coated by passing it through a solution of shellac or other resinous non-conducting material in alcohol or other solvent. When dry, the wire thus coated is wrapped with silk or other suitable insulating-threads, in the usual manner. The whole is then heated in any convenient manner to a temperature sufficient to render the shellac or gummy coating adhesive, so that the threads will adhere to the gum, and after the wire has cooled off the thread is not liable to unwind.

As thus constructed, it is evident that as long as the resinous coating lasts the cover-

ing of silk will be securely held in place, obviating the tendency of the thread to unwrap and expose the wire, which is a source of serious difficulty in insulated wires as at present constructed. The resinous coating also effectually protects the wire against the injurious effects of moisture, which, in the wires as ordinarily constructed, causes oxidation of the wire, the moist oxide penetrating the silk covering, and weakening or entirely destroying its insulating properties.

My process is applicable to metal wires of every kind; but it is of particular advantage for fine copper wire, such as is generally used for electro-magnetic coils.

I am aware that attempts have been made to insulate wire by drawing the same through an anti-corroding solution, and then winding thereon silk or other thread before the solution has set, so that the threads will be embedded in the solution. In following this process the threads, in the act of being wound on the wire, displace the anti-corroding solution, so as to expose portions of the surface of the wire to the corroding influence of the atmosphere, and at the same time a portion of the solution is squeezed out between the strands of the thread, and the wire, when completed, presents a bad appearance. These disadvantages are obviated by my mode of protecting the wire.

What I claim as my invention, and desire to secure by Letters Patent, is—

The within-described mode of constructing insulated wire by first coating the wire directly with shellac or other non-conducting gummy material, then winding silk or other thread on the wire, and finally heating the whole to unite the gummy coating and thread, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 23d day of July, 1875.

HENRY SPLITDORF. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.