(No Model.)

H. W. JOHNS, Jr.

INSULATED ELECTRICAL WIRE.

No. 404,913. Patented June 11, 1889.

Fig. 1.

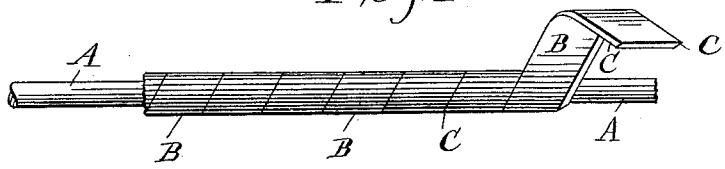


Fig. 2.

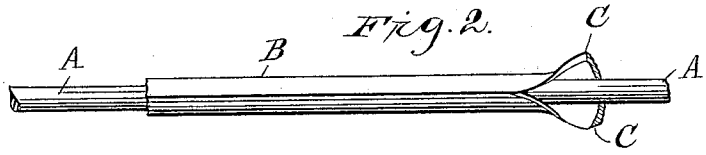
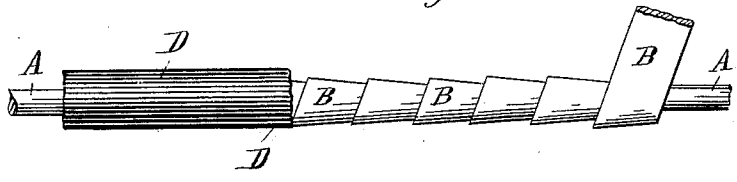


Fig. 3.



Witnesses:
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S. Ritterband

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his Atty

UNITED STATES PATENT OFFICE.

HENRY W. JOHNS, JR., OF NEW YORK, N. Y.

INSULATED ELECTRICAL WIRE.

SPECIFICATION forming part of Letters Patent No. 404,913, dated June 11, 1889.

Application filed March 23, 1889. Serial No. 304,555. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. JOHNS, Jr., a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Insulated Electrical Wires, of which the following is a specification.

My invention relates to an improvement in the insulation of wires for electrical conduction; and it consists in applying to the exterior of the wire a practically fire-proof covering of insulating material, composed, essentially, of strips of asbestus fabric, the meeting edges whereof are united and cemented to each other by interposed cementing material, preferably a vulcanizable substance, and the strips of asbestus material are also preferably composed of a vulcanizable asbestus compound, so that the entire covering may be vulcanized when completed, thus securing fire-proof and water-proof qualities.

In the drawings, Figure 1 illustrates one method of applying my improved covering. Fig. 2 illustrates a modification thereof. Fig. 3 illustrates still another method of applying the covering-strips, showing also an exterior coating of plastic material.

A is the wire.

B is the covering composed of strips of asbestus fabric, preferably consisting of fibrated asbestus mixed with vulcanizable substances—such as rubber or its equivalent and sulphur sufficient to vulcanize the mass. This compound is formed into compressed sheets by any method now known, and is then cut into strips, the edges being preferably beveled, as shown at C, so that they shall overlap when applied to the wire; and when applied a suitable cementing substance, preferably, but not essentially, a vulcanizable rubber or equivalent cement, is placed upon the edges, whereby they will be cemented together. After the wire is covered with the vulcanizable strips cemented as stated, it may then be placed in an oven and the entire covering vulcanized in a manner now well known, resulting in a continuous and practically seamless fire and water proof covering.

It is obvious that the asbestus strips may be used not vulcanizable, in which event some suitable external coating of waterproofing material should be employed. Such a coating I show in Fig. 3 at D, and it may be a vulcanizable plastic mass composed of asbestus, rubber, and sulphur, as set forth in my application for a patent filed by me January 8, 1889, Serial No. 295,753, and which I do not specifically claim herein, excepting in the combination recited in the claims hereof, because it is claimed broadly in said pending application; or the external covering may be of such other protecting material as preferred.

In Fig. 2 I show an alternative method of applying the strips of asbestus fabric, vulcanizable or not, as the case may be. It is there wrapped longitudinally instead of spirally around the wire, and the meeting edges overlap and are cemented, as before described.

In Fig. 3 I show the strip wrapped around the wire, the edges not being beveled but square, and overlapping by simple superposition. This form does not present so smooth an exterior surface as the other forms, but is used by me when I employ an exterior protecting coating or layer. Thereby the irregularities of the surface of the strips give a more secure hold to the exterior coating than if it were smooth. This form may be employed without an exterior coating, if desired.

Having described my invention, I claim—

1. A wire for conducting electricity, having an insulating covering of strips of compressed asbestus united at the meeting edges by cementing material, substantially as set forth.

2. A wire for conducting electricity, having an insulating covering of compressed vulcanized asbestus strips, the meeting edges whereof are joined by vulcanized cementing material, substantially as set forth.

3. A wire for conducting electricity, having an insulating covering of compressed asbestus strips underneath and an exterior

layer of binding and waterproofing material, substantially as set forth.

4. A wire for conducting electricity, having an insulating covering of strips of compressed and vulcanized asbestus which overlap each other, and vulcanized cementing material at the overlapped joints, substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 22d day of March, A. D. 1889.

HENRY W. JOHNS, JR.

Witnesses:
PHILLIPS ABBOTT,
D. S. RITTERBAND.