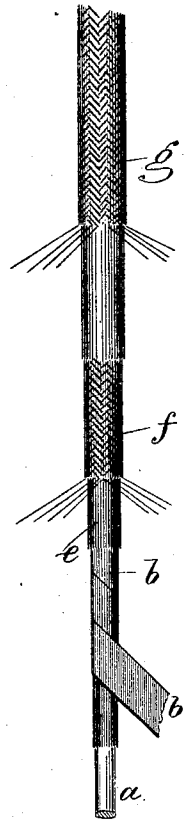
(No Model.)

A. A. COWLES.

INSULATED ELECTRIC CONDUCTOR.

No. 281,841. Patented July 24, 1883.



Witnesses

Chas. H. Smith

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UNITED STATES PATENT OFFICE.

ALFRED A. COWLES, OF NEW YORK, N. Y., ASSIGNOR TO THE ANSONIA BRASS AND COPPER COMPANY, OF ANSONIA, CONNECTICUT.

INSULATED ELECTRIC CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 281,841, dated July 24, 1883.

Application filed April 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALFRED A. COWLES, of the city and State of New York, have invented an Improvement in Insulated Electric Conductors, of which the following is a specification.

Electric conductors have been covered with a layer of kerite and then wrapped with a layer of tape, and in some instances one or more layers of braided covering, with paint, have been applied. This, however, does not relate to my present invention, because the kerite forms a comparatively thick tube around the wire, and it is dry before the braiding is applied; hence such braiding does not stick to the kerite, and the braiding is liable to be torn or abraded.

In Letters Patent No. 272,660, granted to me, a fire-proof insulated conductor is described, and the same has been very extensively and satisfactorily used; but in such use a defect has been discovered, which it is the object of the present invention to rectify. Where the wire, insulated according to said patent, is exposed to continual moisture—such as in breweries or sewers—the layer of fibrous material next to the copper wire appears to become disintegrated by the chemical and electrical action jointly, and the insulation is injured. To prevent this difficulty I cause the first layer of braiding or fibrous material to adhere to the wire by a water-proof material—such as asphalt or india-rubber mixed with linseed-oil and asphaltum—and then I apply to the same the braided covering and paint, as in my aforesaid patent, for the purpose of rendering the insulation fire-proof.

In the drawing my improvement is illustrated.

The wire *a* is covered by one or more windings of tape, *b*, or a braiding of threads, the tapes or threads being made to adhere to the wire by a water-proof substance—such as an india-rubber paint—or bituminous material—such as asphaltum. The tapes or strips *b*, when used, are to be saturated with the water-proof material. When braiding is employed, it is preferable to braid the threads directly upon a layer of water-proof material while in a soft condition upon the wire. By this means the first layer of fibrous material is caused to adhere to the wire, and there are no interstices between the same and the fibrous covering. The coverings of braid and of paint are now to be applied, as in my aforesaid patent, to render the wire fire-proof, and a water-proof coating may be applied outside all, as in my Patent No. 272,659.

I have shown a coating of paint, *e*, applied directly upon the surface of the water-proofed fibrous material *b*, and upon this paint the braiding *f* is applied, then a second coat of paint and an external layer of braid, as at *g*, the braiding being applied to the paint before it hardens. The paint is thoroughly incorporated into and saturates the braiding for the purpose of preventing the paint scaling off and for rendering the insulation fire-proof, as in aforesaid patent.

The coating of paint at *e* may be dispensed with, as the material with which the first layer of fibrous material is saturated will usually be sufficient to fill the pores and unite the first and second layers of fibrous material.

In some instances a single braided covering and paint may be applied upon the inner water-proof covering; but I prefer two braided coverings, with paint on the exterior covering, or between both exterior and interior intermediate coverings, or both.

I claim as my invention—

1. The fire and water proof insulating-covering for electric conductors, composed of the inner covering of fibrous material saturated with bituminous or similar water-proof material, which also unites the covering to the wire, and one or more braided coverings, and paint applied outside the inner covering, to render the insulating-covering fire-proof, substantially as set forth.

2. The combination, in a fire and water proof insulating-covering for electric conductors, of bituminous or similar material upon the wire, a fibrous covering saturated therewith, and two or more braided coverings having paint intervening between the coverings, substantially as set forth.

Signed by me this 9th day of April, A. D. 1883.

ALFRED A. COWLES.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.