

(No Model.)

W. SMITH.

INSULATED ELECTRICAL CONDUCTOR.

No. 277,366.

Patented May 8, 1883.

Fig. 1.

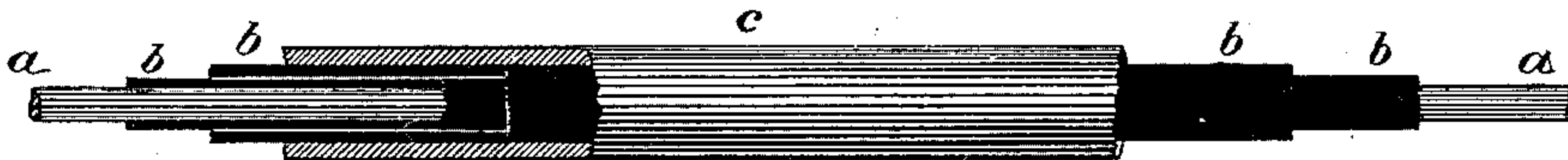
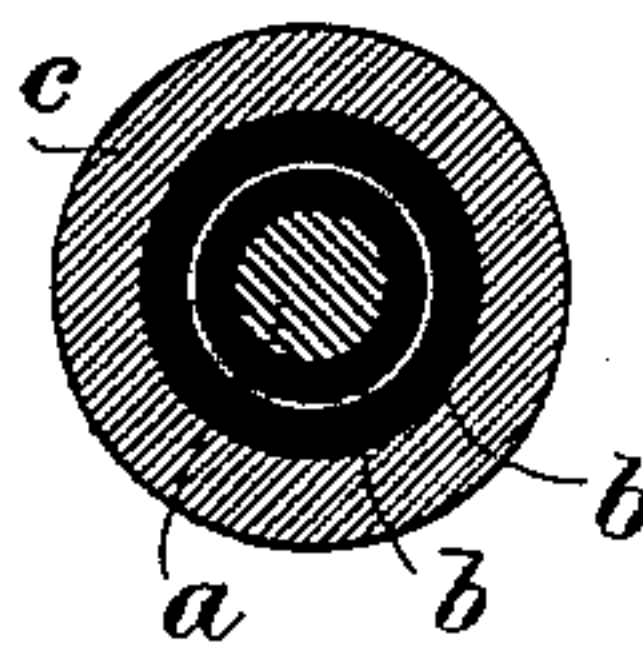


Fig. 2.



WITNESSES

Wm A. Skunk
Geo W. Duck

INVENTOR

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UNITED STATES PATENT OFFICE.

WILLOUGHBY SMITH, OF WHARF ROAD, CITY ROAD, COUNTY OF MIDDLESEX, ENGLAND.

INSULATED ELECTRICAL CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 277,366, dated May 8, 1883.

Application filed March 6, 1882. (No model.) Patented in England December 21, 1881, No. 5,599; in France March 14, 1882, No. 147,866, and in Belgium March 15, 1882, No. 57,363.

To all whom it may concern:

Be it known that I, WILLOUGHBY SMITH, a subject of the Queen of Great Britain, residing at Wharf Road, City Road, in the county of Middlesex, England, have invented certain new and useful Improvements in Insulated Conductors for Telegraphic and other Uses, (for which a provisional specification has been lodged by me in Great Britain, No. 5,599, dated December 21, 1881;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object improvements in insulated conductors for telegraphic and other uses.

The insulated conductors now used in submarine, subterranean, and other telegraphs consist for the most part of copper wire covered with gutta-percha, and the gutta-percha is used in as pure a state as it can be obtained. Now, for this pure material, which is expensive, I substitute a compound of gutta-percha with zinc-white. This substitution may be made to a considerable extent not only for the sake of economy, but also with advantage having regard to the purpose for which the conductor is employed. I prefer to admix the gutta-percha with about an equal proportion, by weight, of zinc-white. The admixture is made while the gutta-percha is being masticated in an ordinary masticating-machine.

The compound may be used alone for covering the metallic wire conductor, and it may be put onto the conductor in any desired number of concentric layers, just as gutta-percha is now laid onto metallic conductors. Preferably, however, I first coat the metallic conductor with one or more concentric layers of gutta-percha, and outside these I apply one or more layers of the compound. The great advantage the compound possesses over gutta-percha is that it is not liable to change and decay by long exposure to air, but remains unaltered, whereas gutta-percha deteriorates in quality

and perishes. The compound can therefore be used with great advantage for giving an outer covering to metallic conductors after they have had one or more coatings of gutta-percha applied to them, as it will not only protect these inner coatings, but will also aid in insulating the wire, for although the insulating property of the compound is not so high as that of pure gutta-percha, still its insulating-power is high as compared with other compounds used for insulating purposes. For long lines especially it is better to give the wire conductors one or more layers of pure gutta-percha before giving them an outer coating of the compound, as the inductive capacity of the compound is high. This, however, is not of importance for short lines.

In the accompanying drawings, Figure 1 is a view partly in longitudinal section; and Fig. 2, a transverse section, designed to show the manner in which a wire, *a*, is coated with layers *b* of gutta-percha, in turn coated with the covering *c* of the compound of gutta-percha and zinc-white.

Having thus described the nature of my invention and the manner of performing the same, I would state that I do not make claim to the admixture of zinc-white with gutta-percha; but

I claim—

1. The insulated electric conductor consisting of an inner metallic conductor and an outer covering of a compound of gutta-percha and zinc-white, substantially as herein described.

2. The insulated electric conductor consisting of an inner metallic conductor covered with gutta-percha or other insulating substance, and an outer covering of a compound of gutta-percha and zinc-white, substantially as described.

WILLOUGHBY SMITH.

Witnesses:

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