

(No Model.)

E. CLARK.

METALLIC INSULATING COVERING FOR TELEGRAPH WIRES.

No. 287,236.

Patented Oct. 23, 1883.

Fig. 1.

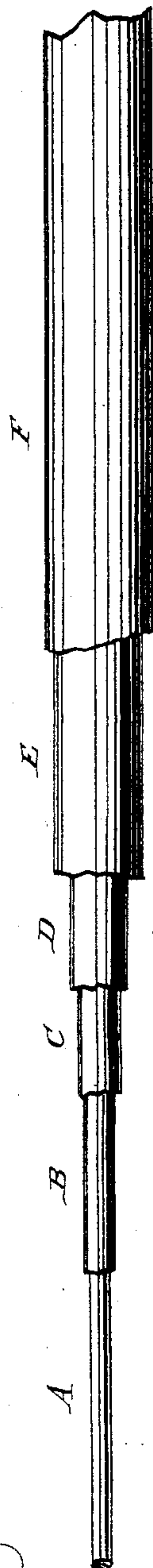


Fig. 2.

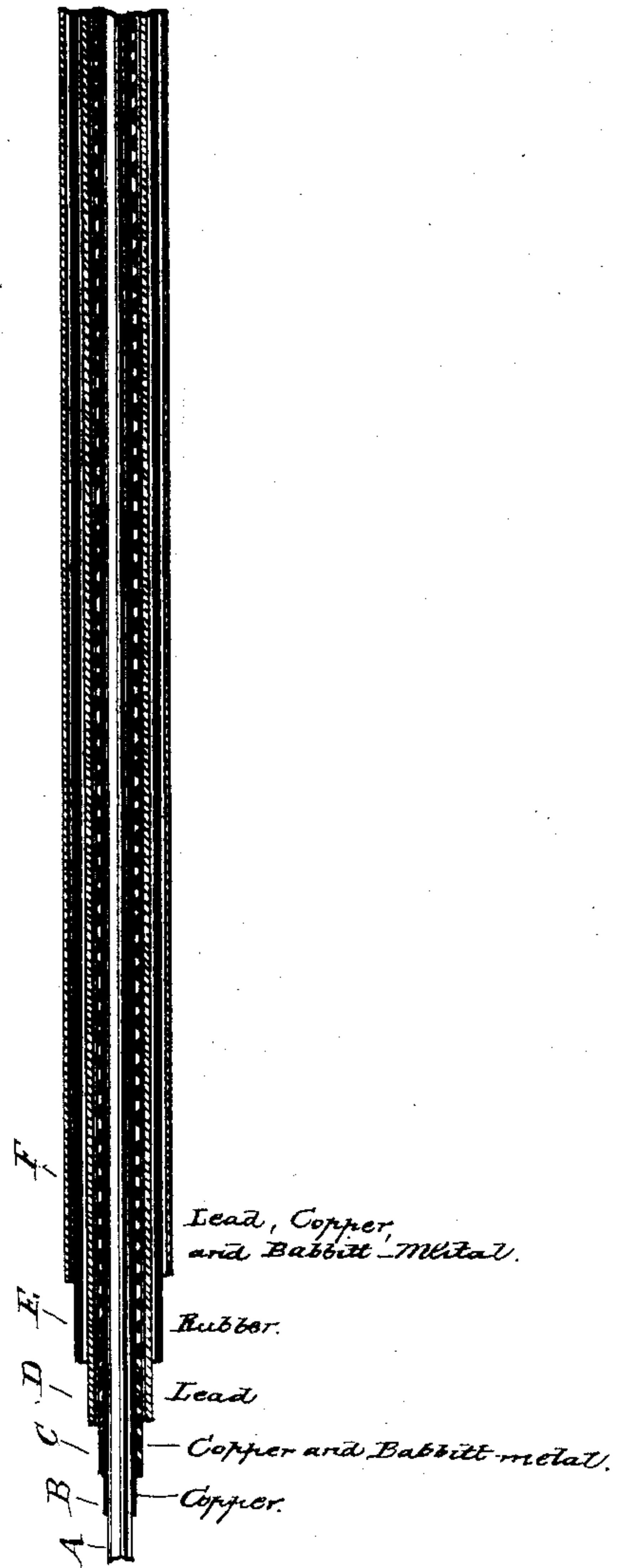
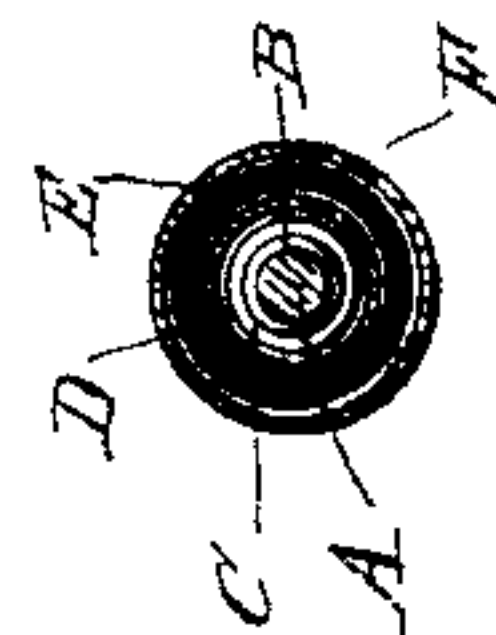


Fig. 3.



WITNESSES:

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METALLIC INSULATING-COVERING FOR TELEGRAPH-WIRES.

SPECIFICATION forming part of Letters Patent No. 287,236, dated October 23, 1883.

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

To all whom it may concern:

Be it known that I, EDWARD CLARK, of Cornwall, in the county of Orange and State of New York, have invented certain new and useful Improvements in Metallic Insulating-Coverings for Telegraph-Wires and other Electric Wires, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a piece of my improved wire, showing the various parts. Fig. 2 is a longitudinal section of the same. Fig. 3 is a cross-section of the same.

The object of this invention is to facilitate the handling and laying of electric wires, and promote the durability of such wires, while securing a perfect insulation.

The invention consists in a metallic covering for electric wires, made by covering the wires with a coating of copper, coating the copper-coated wires with a compound of copper and Babbitt metal, and covering the said compound coating with a coating of lead. The wires thus prepared are covered with rubber or other moisture-excluding material, and incased in a metallic tube, to adapt the said wires to be laid under ground and in water, as will be hereinafter fully described.

In carrying my invention into practical use I melt a quantity of soft copper in a suitable vessel, and in another suitable vessel I melt soft copper and Babbitt metal in equal quantities. The wire, A, to be insulated is drawn through diluted sulphuric acid, and is then immediately drawn through the melted copper one, two, or more times, to insure the coating of the whole surface of the wire with copper, B. The copper-coated wire, when cold, or at any convenient time thereafter, is drawn through the melted copper and Babbitt metal three times, more or less, until a coating, C, of the desired thickness has been formed upon the wire. When cold, the coated wire is drawn one or more times through melted lead, to form a thin coating, D, of lead over the surface of the said coated wire. As thus prepared, the wire is adapted for use when sus-

pended upon poles or other supports, and when thus used requires no glass or other insulators.

To adapt the wire for use under ground and in water, the wire coated as hereinbefore described is coated with rubber, E, paper-pulp, or other moisture-excluding material, by any of the processes now in common use; or the wire can be coated with a compound formed of dissolved rubber, ten pounds; powdered leather, four pounds; cotton flock, one pound; rosin, four pounds, and palm-oil, one pound. In preparing this compound the rosin is melted in a suitable vessel, the other ingredients are then added, and the whole is stirred until the said ingredients are thoroughly mixed. The wire is then coated with the compound in the manner hereinbefore described, or by any other suitable machinery. The wire thus prepared is then drawn through a tube, F, made sufficiently large to allow the said wire to be drawn through it readily. This outer tube, F, is formed of lead, ten pounds; soft copper, one pound, and Babbitt metal, two pounds, melted together and thoroughly mixed, and then made into a tube in the ordinary manner. If desired, the coated wire may be covered with cloth before being drawn through the tube F, to guard against any possible injury to the coating of the wire while being drawn through the tube. With this construction the copper coating B gives a good conducting-surface to the wire A, the compound coating C protects the wire from dampness, and at the same time increases the conducting capacity of the wire, and the lead coating D insulates the said wire.

The non-conducting coating E protects the wire from dampness, and the covering-tube F protects the said wire from accidental injury. The two coverings E F adapt the wire to be laid in water and under ground.

Wires thus prepared can be laid side by side and across each other without the escape of any part of the electric currents and without developing induction-currents in any of the adjacent wires.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A metallic covering for electric wires, 100

made substantially as herein shown and described, and consisting of the copper coating B, applied to the wire, the copper and Babbitt-metal coating C, applied to the copper-coated wire, and the lead coating D, as set forth.

5 2. The combination, with the wire A, provided with a copper coating, B, a copper and Babbitt-metal coating, C, and a lead coating, D,

of the moisture-excluding covering E and the inclosing-tube F, substantially as herein shown and described, whereby the wire is adapted to be laid under ground and in water, as set forth.

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Witnesses:

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