

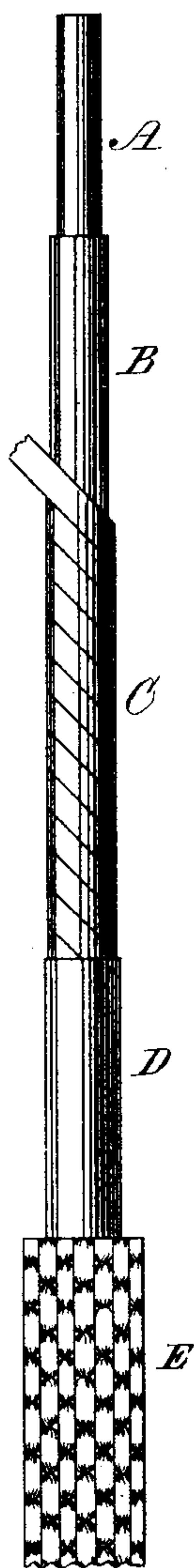
(No Model.)

H. C. SPALDING.

INSULATED ELECTRICAL CONDUCTOR.

No. 327,467.

Patented Sept. 29, 1885.



WITNESSES

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HENRY C. SPALDING, OF BOSTON, MASSACHUSETTS.

INSULATED ELECTRICAL CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 327,467, dated September 29, 1885.

Application filed December 10, 1883. Renewed February 28, 1885. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SPALDING, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Insulated Electrical Conductors, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

My invention relates to the insulation of electrical line-wires, or those used for circuits from any generator to devices for utilizing the current--such as the wires carried in underground conduits, attached to walls or ceilings, or suspended from poles.

The object of my invention is to secure a coating for such wires of very high specific insulation, and which at the same time shall be cheap and durable and not lessen in any degree their flexibility.

For accomplishing this I coat the wire with a permanently-viscous or non-drying compound, hereinafter described. I then wind around it, spirally, a strip or band of paper, and over this I apply a second coat of the non-drying compound.

My object in doing this is to secure the advantages of the insulating qualities of the compound and those afforded by the presence in the insulating coating of a fibrous material, and also to prevent the coating from becoming hard and dry and cracking.

The compound which I employ is one that is brought by moderate heat into a comparatively liquid state, so that it may be applied to the wire by brushes or rollers, but which on cooling does not become hard, but retains to a slight degree its plasticity or viscous qualities. Such a compound is obtained by mixing Trinidad or other asphalt with ten per cent. of its weight of the residuum from the distillation of petroleum or of boiled linseed-oil, or by combining crude turpentine boiled down until it becomes semi-solid when cool, and boiled linseed-oil similarly treated. I coat a wire with either of these compounds, and then wind around them a strip or ribbon of paper while the compound is still hot and soft. Over the paper I then apply a second coating of the plastic compound. This produces a conductor perfectly insulated, and ready to be used in any of the ways above referred to. It may be further insulated, when so desired, by one or more additional layers

of paper and coats of the plastic compound herein described, or it may be protected by an exterior wrapping or jacket of braided twine.

The presence of the material described on both sides of the paper keeps the latter soft and prevents it from cracking. The paper, on the other hand, secures a perfect adhesion of the insulating coating to the wire. These are both qualities of great importance in line-wires, and are not afforded by paper when applied in the usual manner, nor so cheaply obtained by the use of any other insulating materials of which I am aware.

In the accompanying drawing I have illustrated this method of insulation.

A is the wire; B, the coating of viscous insulating material; C, the spiral wrapping of paper; D, the second or outer coating of viscous material, and E a protective jacket of braided twine. The latter is not, however, an essential part of the invention.

In another application I have described and claimed a coil the wire of which is insulated by a wrapping of paper laid over a coating of non-drying insulating material. In the case referred to the invention is distinguished from the present by the fact that the exterior coating of viscous material is not used, and is not desirable.

I do not claim, broadly, herein a conductor insulated by paper applied on or around a coating of plastic insulating material; but

What I claim is—

1. The combination, with an electrical conductor, of a coating of a permanently-viscous or non-drying insulating material, a wrapping of paper, and an exterior coating of the viscous or non-drying material, substantially as herein set forth.

2. The combination, with an electrical conductor, of a coating of viscous insulating material composed of asphalt and linseed-oil, or its equivalent, a wrapping of spirally-wound paper, and an exterior coating of the viscous material, as herein set forth.

In witness whereof I have hereunto set my name in the presence of the two subscribing witnesses.

HENRY C. SPALDING.

Witnesses:

ALEXANDER L. HAYES,
E. B. WELCH.