

UNITED STATES PATENT OFFICE.

ALEXANDER WILKINSON, OF LONDON, ENGLAND.

IMPROVEMENT IN COMPOSITIONS FOR COATING TELEGRAPH-WIRES.

Specification forming part of Letters Patent No. 148,910, dated March 24, 1874; application filed February 20, 1874.

To all whom it may concern:

Be it known that I, ALEXANDER WILKINSON, of Marylebone, London, England, have invented or discovered certain new and useful Improvements in Coating and Preserving Telegraphic Wires, Ropes, and Cables, also Fabrics and Filaments; and I do hereby declare that the following is a full, clear, and exact description thereof—that is to say:

This invention relates to the combination of certain ingredients, and in suitable proportions or quantities, to form a protecting and a preserving coating or covering to telegraphic wires, ropes, and cables; also to fabrics, fibers, and filaments, when applied thereto; also, to the method of treating such wires by which the coating is effected.

The ingredients are white lead, pitch, japan, shellac, tallow, naphtha, and oil, to which, in some cases, a small proportion of glycerine is added. Instead of pitch, rosin, or tar can be used, and, instead of shellac, a varnish, or other body having similar properties.

To coat or cover naked wires used for telegraphic purposes, accordingly, I first clean the surfaces of the wires, and then pass them through a bath of Brunswick black, in order to prepare them for the after coatings or coverings. I then cover the wires with fibers or filaments, which have been prepared in a bath composed of white lead, say, one pound; japan, say, one ounce; pitch, say, four ounces; shellac, say, three ounces; tallow, say, one ounce; naphtha, say, one ounce; oil, linseed, say, one ounce—these having been previously mixed gradually under the action of heat, and then allowed to cool down. The wires thus coated by the composition just named are then exposed to the atmosphere for a short time, and are then passed through a second bath composed of the same ingredients, in order that the interstices of the fibers or filaments may be completely filled up, and the wires be perfectly insulated. After this is accomplished, I pass the coated wires through a bath of white lead to give them a final covering, and thereby fit them to be used for telegraphic purposes generally.

When I wrap fibers or filaments onto the wires, I dispense with the first coating of Brunswick black, and then I pass the un-

treated fibered wires through the bath until the fibers are completely saturated and coated with the compound, they being afterward coated with white lead, as before mentioned.

If the wires to be coated are soft in temper, I add a small quantity of glycerine to the bath to make the compound the more flexible, and to thereby maintain the pliability; but only in rare cases would the glycerine be needed, as the flexibility of the coated wires would be governed more or less by the thickness of the coating or the number of coatings applied. The coating, after a little exposure to the atmosphere, becomes comparatively hard. It is perfectly water-proof, and is capable of withstanding extreme cold without liability to crack or flake off.

In making up a rope or cable, I take one or a number of wires, which have been coated, as above described, with the exception of the final coating of white lead, and pass them through a bath of the same ingredients and similarly prepared, so that they become coated to the desired thickness; or I first wrap the series of coated wires with a fibrous body, prepared or not as described, to form a rope or cable, and then pass the rope or cable through the bath before applying the exterior coating of white lead.

In some cases I use this second bath while in a hot state to insure the amalgamation or junction of the second coating with the first. The single-coated wires, such as are preferable for land or overhead telegraphy, can be covered or inclosed in soft metal or a metallic compound drawn into a tube in the manner well known; and the rope or cable for submarine telegraphy can have iron or other wire or sheet-lead in strips (wound, twisted, or braided) upon it, and in most cases I coat the metal covering with prepared filaments or fibers, and then finally coat them with the composition before passing them through the white-lead bath.

I have referred to fibers or filaments as being saturated or coated with the compound prior or subsequent to their application to the wires, and such fibers or filaments may be in fleece, in yarn, or in thread, and either loose or woven as a fabric, in which case the fabrics may be in strips, in sheets, or pieces. If they

are in strips, they can be used as wrappings to the wires, or to the ropes or cables; and, if in sheets or pieces, for other purposes, such as for covering goods, roofings, and the like.

In the composition, I have referred to shellac as one of the ingredients used; but I do not limit myself thereto, as varnish or other similar sticky, binding body can be substituted for it; neither do I limit myself to employing pitch, as rosin or tar is equally applicable.

What I claim as my invention is—

A preserving compound for telegraph and other electric wires, composed of white lead,

pitch, (or rosin or tar,) japan, shellac or its equivalent, tallow, naphtha, and oil, in or about the quantities specified, and capable of being applied either directly to such wire or wires, or by application to any fibrous or textile material covering said wire or wires, or by saturating such fibrous or textile material previous to enveloping the wire or wires, substantially in the manner and for the purposes specified.

ALEXR. WILKINSON.

Witnesses:

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