

UNITED STATES PATENT OFFICE.

PETER C. MATHERSON, OF LANDISVILLE, NEW JERSEY.

METHOD OF APPLYING GUM-BALATA FOR INSULATING WIRES.

SPECIFICATION forming part of Letters Patent No. 326,132, dated September 15, 1885.

Application filed February 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, PETER C. MATHERSON, of Landisville, Atlantic county, in the State of New Jersey, have invented a new and useful Improvement in the Method of Applying Gum-Balata for Insulating Wires, of which the following is a specification.

Gum-balata is a tough leather-like gum, which is obtained from South America or the West Indies, and which somewhat resembles india-rubber or gutta-percha, although it is distinct from either. This gum possesses many qualities which render it particularly desirable as an insulating-covering for wires intended for electrical purposes; but hitherto it has not been used for such purposes to any extent, because of the difficulty of working and applying it. Although it resembles gutta-percha in many particulars, it cannot be sufficiently softened and properly applied to wire by manipulating it in hot water, as can gutta-percha; and the object of my invention is to enable this gum-balata to be successfully used and applied as an insulating-covering for wires, for which purpose its qualities render it well adapted.

To this end my invention is an improvement in the method of applying gum-balata for insulating wires, consisting in dissolving the gum in a volatile solvent, and then passing the wire through the solution to receive upon it a film thereof.

I first dissolve the gum in any suitable volatile solvent into the condition of a thin paste or thick varnish, the best solvent being either bisulphide of carbon or chloroform. When the pasty solution is formed to the desired consistency, I place the same in a suitable vessel, preferably applying some heat thereto to keep the paste fluid, and I then dip the wire therein and draw it through and out of the paste at a slow speed, and a film of the paste will adhere to the surface of the wire, and thus form an insulating-coating thereon. This coating will dry rapidly, and after the wire has been carried through the air a sufficient distance to dry the coating, so that it ceases to be tacky, it may then be wound on rolls and laid away to dry fully before it is wound in packages for the market.

Before the wire is drawn through the gum its surface should be cleaned, so as to be free from grease or oil, and thus put in a condition to adhere more thoroughly to the gum, which cleaning is best done with naphtha or bisulphide of carbon. After the wire has been passed once through the bath of gum, and has thus received a film thereof, it may be passed a second or third time through the same operation, so as to obtain successive films, and thus render the coating as thick as may be desired.

If preferred, fibrous windings or wrappings may be placed outside of the balata film to form the external covering of the wire, and this fibrous covering may be also applied intermediate between the successive coatings of gum, as will be readily understood.

In some cases mineral, fibrous, or earthy matter in a fine state of division may be combined with the gum in the pasty form, so as to add greater hardness thereto or modify the gum in other ways, as will be understood.

Gum-balata has the advantages of being cheaper than india-rubber, of being a perfect insulation, tough and elastic, and tenacious in its adhesion to the wires. It is entirely proof water, to the effect of the weather, to acids and alkalis, and is also proof to the action of the earth, if buried. By my invention I enable this gum to be successfully used as an insulating-covering for wire.

Inasmuch as I use a volatile solvent of the gum, each coating of the solution will dry quickly and smoothly and enable another coating to be quickly applied.

What I claim as my invention, and desire to secure by Letters Patent, is—

The improvement in the method of applying gum-balata for insulating wires, consisting in dissolving the gum in a volatile solvent, and then passing the wire through the solution to receive a film thereof, substantially as herein described.

PETER C. MATHERSON.

Witnesses:

CHAS. M. HIGGINS,
CHAS. MORRILL.