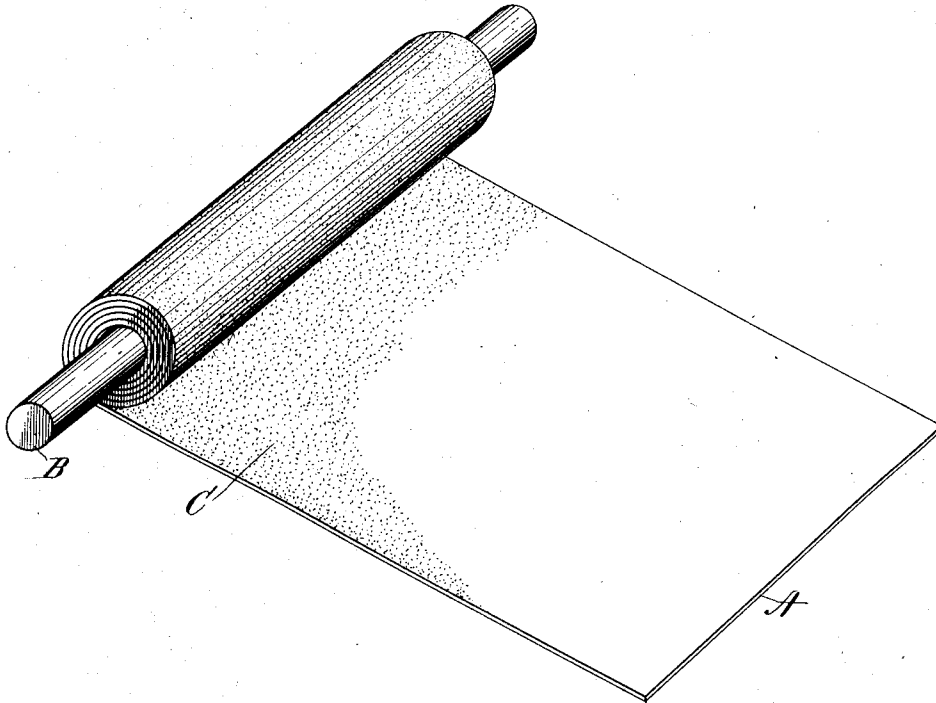


W. R. SEIGLE.
PROCESS OF FORMING INSULATING TUBES.
APPLICATION FILED DEC. 20, 1909.

981,129.

Patented Jan. 10, 1911.



WITNESSES=

Josephine H. Ryan
Charles S. Wilbur

INVENTOR=

William R. Seigle
by
Robert R. Seigle & Co.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM R. SEIGLE, OF NASHUA, NEW HAMPSHIRE.

PROCESS OF FORMING INSULATING-TUBES.

981,129.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed December 20, 1909. Serial No. 534,185.

To all whom it may concern:

Be it known that I, WILLIAM R. SEIGLE, a citizen of the United States, and resident of Nashua, in the county of Hillsboro and State of New Hampshire, have invented new and useful Improvements in Processes of Forming Insulating-Tubes, of which the following is a specification.

My invention relates to the art of forming tubes of electrically-insulating material and consists in a new process by which effective insulating tubes may be formed.

In the drawing hereto annexed there is illustrated a tube in process of formation according to my new process.

I take a sheet of fibrous material, preferably refractory material, such as a sheet of asbestos cloth or paper, and first wind the same in a close spiral upon a suitable core or mandrel, first, however, applying to the surface of the fibrous sheet a coating of finely divided liquefiable hydrocarbon. The hydrocarbons which I believe are suited to this purpose are the harder pitches or asphalts, and the asphalt material known as gilsonite, is, I believe, better suited to the formation of insulating tubes according to this method than any other substance. If desired, the fibrous sheet A may be prepared by coating it with an adhesive, before the finely divided hydrocarbon is dusted over its surface, so that the act of rolling up the spiral will have less effect to disturb the distribution of the hydrocarbon. When the sheet A is wound into a close spiral upon the mandrel B, the hydrocarbon particles C will be quite uniformly distributed throughout the entire body of the tube thus formed. I next heat the tube to a degree sufficient to liquefy the hydrocarbon particles distributed therethrough and their liquefaction results in a general impregnation of the fibrous body which is more or less complete according to the proportion of comminuted hydrocarbon originally provided.

In its preferred form the insulating tube is constructed by rolling a spiral, in the manner described, of asbestos paper which has been previously liberally sprinkled with powdered gilsonite. The subsequent heating of the asbestos tube brings about a very thorough distribution of the gilsonite

throughout the mass, and this is enhanced and the effect improved if the heating is applied by immersing the entire tube in a body of similar material, preferably liquid gilsonite, heated to a high temperature. The gilsonite particles included in the body of the tube facilitate the saturation of the tube by additional liquefied hydrocarbon entering from without and the effect is one of internal expansion in the body of the tube which compacts all parts of it very closely, so that after the tube has cooled, a section thereof hardly discloses the original laminated structure. Tubes of this kind may be made with walls as thick or as thin as desired, their insulating property and dielectric strength are both extremely high and they constitute suitable conduits for electric wires intended to carry currents of high tension.

What I claim and desire to secure by Letters Patent is:

1. The method of forming tubes which consists in distributing finely divided liquefiable hydrocarbon over a flexible sheet of fibrous material, rolling the sheet into a tubular spiral inclosing the hydrocarbon between its layers, and thereafter heating the tubular body thus formed, liquefying and further distributing the hydrocarbon in the fibrous mass.

2. The method of forming tubes which consists in distributing finely divided liquefiable hydrocarbon over a sheet of asbestos material, rolling the sheet into a tubular spiral inclosing the hydrocarbon between its layers and thereafter immersing the tubular body in a liquefied hydrocarbon at a temperature sufficiently high to liquefy the hydrocarbon originally contained in the tubular body.

3. The method of forming tubes which consists in distributing finely divided liquefiable hydrocarbon over a sheet of asbestos fiber, rolling the sheet into a tubular spiral, inclosing the hydrocarbon between its layers, and thereafter heating the tubular body, liquefying and further distributing the hydrocarbon in the mass.

4. The method of forming tubes, which consists in distributing finely divided liquefiable hydrocarbon over a sheet of asbestos

fiber, rolling the sheet into a tubular spiral
inclosing the hydrocarbon between its lay-
ers, and thereafter immersing the tubular
body in a liquefied hydrocarbon which is
5 solid at ordinary temperature, liquefying the
hydrocarbon originally distributed through
the tubular body.

Signed by me at Boston, Massachusetts
this tenth day of December 1909.

WILLIAM R. SEIGLE.

Witnesses:

CHARLES D. WOODBERRY,
JOSEPHINE H. RYAN.