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INSULATING ELECTRIC CONDUCTORS

Filed April 22, 1930

Fig. 1.

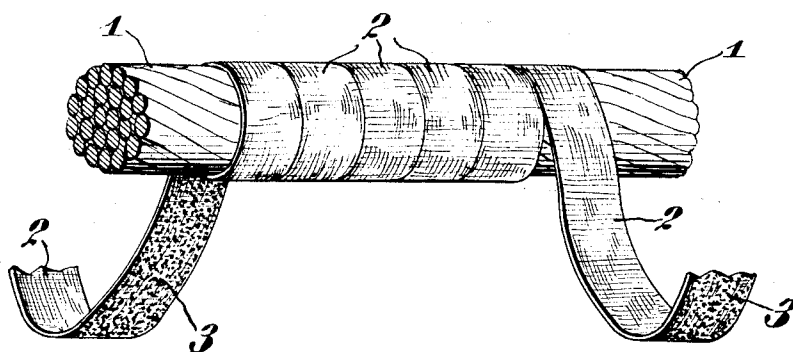
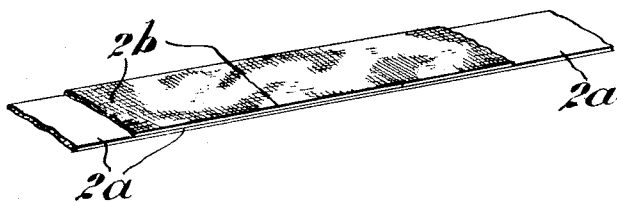


Fig. 2.



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INSULATING ELECTRIC CONDUCTORS

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My invention relates to an improvement in insulating electric conductors and I will here describe my invention as applied to lines of transmission enclosed in a cable.

It is obvious that my invention may be applied to different conductors.

It is well understood that in the greatest majority, such lines are insulated by spirally winding ribbons or bands of paper or textile, (made of wood fiber and cotton respectively) impregnated or surfaced with synthetic rosin. About twenty layers of these ribbons are used for such insulation.

Paper and textile are in reality only second-class insulators, and it is the aim of my invention to substitute for this paper or textile an insulation of far greater insulating property than is now today the case and for this purpose I make use of a material commercially known as mineral wool.

Mineral wool is either made from the slag, a by-product of iron or steel furnaces, or even from glass furnaces where lead or other ores are used. Mineral wool is also made from rocks containing silicate and oxide of magnesium or calcium.

The operation of producing the mineral wool from the slag or rock is broadly as follows:

The molten slag running from the furnace or cupola is subjected to a blast of hot air or steam (superheated steam preferred by me). Through this process the inner part of the slag is divided and fine threads comprising the silicate and magnesium or calcium are produced, and this product is today called mineral wool.

When now such fibers are subjected to about the same processes as wood fiber in paper making, that is, if this fiber is, during the processes, subjected to the action of a "beater" in conjunction with a synthetic rosin and its solvent, then the fibers, broken up to about one inch in length, are made interlocking with the aid of the usual vibrating screen. They can then be shaped into bands or ribbons of desired width and length in nearly the same manner as today paper made out of wood fibers is produced.

The great advantage of this insulating rib-

bon resides not only in its superior insulating quality for electric energy, but resides also therein that it acts also as a barrier for the high temperature developed.

Should a band or ribbon of such material be substituted for the band or ribbon of paper or textile, then only three to five layers are necessary for the purpose of insulating even comparative high v.a. (volt-ampere).

The accompanying drawing illustrates some form my invention may take.

In this drawing, Fig. 1 is a fragmentary sectional perspective view of part of a conductor insulated with mineral wool in the shape of a ribbon. Fig. 2 is a fragmentary sectional perspective view of a piece of ribbon made of paper or textile carrying as a mechanical unit mineral wool.

In Fig. 1, 1 designates a conductor, 2 the windings of a ribbon made of mineral wool, 3 the rosin. In Fig. 2, 2a designates the paper or textile ribbon, and 2b the mineral wool carried by said ribbon.

The tensile strength of the mineral wool suffices for all practical purposes, but in some cases it may be advisable to add to this tensile strength by adding as a carrier the ribbon of paper or textile.

As said above, this invention may be applied to other conductors but one of its great advantages is its application to transmission lines. Where synthetic rosin is not handy, then common resin or rosin dissolved in suitable liquids may be used with good results.

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

An article of manufacture comprising a metallic conducting member having an external layer of tape wound spirally thereon, said tape being composed of a mixture of mineral wool and synthetic rosin and possessing high dielectric and heat resisting properties.

In testimony whereof, I affix my signature.

ISIDOR KITSEE.