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ELECTRIC CABLE

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6 Claims. (Cl. 173—264)

My invention relates to electric cables intended for use where there is danger of exposure to fire and/or water.

In an application filed by me on the 21st day of April, 1937, and numbered 138,173, I described an electric cable comprising a conductor having an incombustible insulation saturated with an insulating compound of low flammability and a sheath containing heat converted polymerized beta-chlorobutadiene and selenium. In developing this type of insulation I have discovered that bulk and weight of the cable may be greatly decreased, up to 25%, without any loss in test requirements in specifications for electric cables of this character, by simply wrapping the stranded conductor with heat resisting varnished cambric and then applying a sheath comprising a fabric tape friction treated and having a layer of heat converted polymerized beta-chlorobutadiene and selenium wrapped spirally over the cambric.

By this method I produce a cable which combines the characteristics of water-proofness, substantial non-inflammability and the ability to retain its insulating characteristics, even after prolonged exposure to flame and at a considerable saving in size and weight, thus reducing the cost.

Throughout the specification and claims I specify "Habirseal" as the compound to be used in the sheath. This compound is preferably applied to a tape and wrapped spirally as a layer around each individual conductor and also around the stranded conductors as assembled in the cable.

The principal ingredients of this compound are polymerized beta-chlorobutadiene and selenium and the proportions may be varied to suit the varying requirements.

A typical sheath compound would contain the following ingredients added in the order given:

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| a. Polymerized beta-chlorobutadiene..... | 30-60% of total. |
| b. Inhibitor of heat conversion such as magnesium oxide..... | 5-20% of a. |
| c. Plasticizer such as wood resin, polymers of coumarone and indene or chlorinated diphenyl..... | 1-10% of a. |
| d. Antioxidant, such as Neozone..... | less than 3% of a. |
| e. Inert fillers..... | remainder. |
| f. Accelerators of heat conversion such as zinc oxide, sulfur, selenium, tellurium, totaling not over..... | 50% of a. |

The foregoing and other features of my invention will now be described in connection with

the accompanying drawing forming part of this specification in which I have shown my cable in its preferred form, after which I shall point out more particularly in the claims those features which I believe to be new and of my own invention.

In the drawing:

The figure is a section through a preferred form of cable.

In the drawing I have shown a three conductor cable. I may however, employ any number of conductors cabled together and assembled as shown with fillers in the interstices between the conductors to produce a cable cylindrical in form.

In the carrying out of my invention, I use a conductor 11 preferably of stranded copper which may or may not be tinned. Around this conductor I provide a layer of heat resisting varnished cambric 12. Around the cambric I wrap a tape 13 in multiple spiral wraps, said tape having been friction treated and having a coating of Habirseal.

A plurality of electrical conductors thus insulated, are cabled together with fillers 14 of asbestos saturated with a non-inflammable saturant in between and all taped with another tape prepared with Habirseal 15.

Around this sheath 15 I provide an armor 16 comprising braided aluminum alloy wire and paint coated.

I may with certain requirements of service conclude to apply a layer of felted asbestos 16 between the conductor and the varnished cambric.

While it is most desirable to apply my "Habirseal" to the conductors by constructing it in the form of a tape and wrapping it in the usual manner, I may extrude the compound around the conductor and the assembled cable or apply the layer of "Habirseal" by the strip method and heat convert the sheath in the usual manner well known to the art.

I wish it distinctly understood that my electric cable herein described and illustrated is in the form in which I desire to use it and that changes or variations may be made as may be convenient or desirable without departing from the salient features of my invention and I therefore intend the following claims to cover such modifications as naturally fall within the lines of invention.

I claim:

1. An electric cable comprising a plurality of individual conductors, a layer of heat resisting varnished cambric wrapped around each conductor, a layer of electrical insulation around each cambric layer, fillers between the conductors comprising asbestos saturated with non-inflammable saturant, a sheath comprising a layer of heat converted Habirseal comprising (a) polymerized beta-chlorobutadiene, 30-60% of total; 60