Patented Mar. 21, 1933 1,902,489

UNITED STATES PATENT OFFICE

FRANK M. CLARK, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK

INSULATING COMPOSITION

No Drawing. Application filed August 24, 1931. Serial No. 559,137.

The present invention relates to insulating compositions and is more particularly concerned with an insulating and cooling medium for electrical apparatus such as transformers, capacitors, cables and the like.

At the present time it is common to use insulating compositions in transformers, cables and the like, for example, which are liquid in character. Obvious disadvantages of liquid insulating compositions are the objections attending shipment and storage of the compositions. Ordinary wax has been used to a limited extent in capacitors, for example, but at temperatures below the solidification point it becomes crystalline and brittle opening up cracks and forming voids, all of which is obviously objectionable.

It is a principal object of the present invention to produce a composition which is solid at ordinary temperatures and which may be used as a substitute for mineral oil or paraffin wax in electrical apparatus such as transformers, capacitors, cables and the like.

It is another object of the invention to produce a composition which has excellent electrical characteristics and which is non-crystalline at low temperatures.

Other and further objects of the invention will be more apparent as the description thereof proceeds.

The composition of my invention consists of a base of mineral wax, for example, crude scale wax, and relatively smaller proportions of petrolatum and mineral oil. Scale wax is a crude paraffin wax. The preferred composition of my invention consists of

	Per cent
Crude scale wax	80
Petrolatum	10
Mineral oil	10

Such a mixture has a melting point of approximately 45° C. Its electrical characteristics such as dielectric strength, non-crystallinity and lack of ionization, are excellent and are retained at temperatures below 0° C. There is apparently no void formation at low temperatures and the dielectric strength of the composition is practically as good as that of the usual transformer hydrocarbon oil down to −40° C. The viscosity of the composition at temperatures above its melting point, for example at 60° C., compares favorably with that obtained with the usual transformer oil. Physical properties of the composition such as flash and burn points are much higher than those of the grade of mineral oil used in transformers. The latter has a flash point of approximately 130° C. and a burning point of about 145° C. The present preferred composition has a flash point of approximately 188° C. and a burning point of approximately 218° C.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. An insulating composition consisting of mineral wax, petrolatum and mineral oil, the mineral wax being a preponderant ingredient.

2. An insulating composition consisting mainly of mineral wax and about ten per cent each of petrolatum and mineral oil, said composition having a melting point of approximately 45° C., a flash point of approximately 188° C. and a burning point of approximately 218° C.

3. An insulating composition consisting of 80% crude scale wax, 10% petrolatum and 10% mineral oil.

In witness whereof, I have hereunto set my hand.

FRANK M. CLARK.