

## UNITED STATES PATENT OFFICE

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## SEALING COMPOSITION

No Drawing.

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This invention relates to sealing compositions adapted for use in the manufacture of fixed electrical condensers and equivalent articles. Such condensers are commonly prepared by rolling two continuous sheets of metal foil in contact with two or more separating sheets of insulating paper until the surface area of foil included is that necessary for the required electrical capacity, impregnating with insulating wax and then dipping the rolls in a sealing composition to prevent the entrance of moisture. For commercial operations a composition is demanded that requires but one dipping to produce an effective seal and which chills to a solid condition as soon as the condensers are withdrawn from the molten composition. Furthermore it is desirable that the applied composition be flexible so that a coating will not chip off from a dipped condenser if accidentally dropped or otherwise subjected to impacts.

We have discovered that sealing compositions for condensers can be obtained from mixtures of wax-like halogenated naphthalenes, which in themselves are somewhat crystalline and too brittle for use as sealing compositions, and bitumens, such as gilsonite, or mineral or other waxes, for example, candelilla, carnauba, etc., which bitumens or waxes, though likewise brittle and/or otherwise unsuited for sealing purposes, so modify the halogenated naphthalenes as to yield compositions depositing in one dipping operation moisture resistant coatings with sufficient flexibility to withstand cracking or chipping due to such impacts as may be likely to occur in the manufacture of the condensers. Admixtures of synthetic amorphous or resinous products, such as the phenol-formaldehyde resinoids which harden when heated, with the halogenated naphthalene wax-like products can be made to yield moisture-resistant coatings having in addition the property of resistance to the action of oils; this property of resistance to oils is desirable where the hot

coated condensers are subsequently immersed in oil to avoid drawing in of any air during a cooling operation. All these mixtures have the further advantage of being free from any acid ingredients to affect the paper insulation and being substantially non-combustible.

Some specific examples are hereinafter given to illustrate the invention, but it is to be understood that the invention is not restricted to the ingredients or proportions stated.

*Example 1:* A chlorinated naphthalene wax-like product consisting principally of a tetrachloro-naphthalene is melted and gilsonite is dissolved therein in the proportions by weight of about 1 part of gilsonite to 3-9 parts of chlorinated naphthalene. This solution is maintained in a molten condition for dipping and upon withdrawal of a condenser from the solution forms a substantially uniform flexible coating thereon of sufficient thickness with a single dipping. The proportions given are not critical and may be varied, but those stated are found preferable in actual practice.

*Example 2:* A chlorinated naphthalene comprising mainly a trichloro-naphthalene in the molten condition has substantially an equal amount of candelilla wax added to it. These ingredients are miscible in substantially all proportions and considerable variation from that stated is possible without appreciably modifying the properties of rapid cooling, resistance to moisture and flexibility.

*Example 3:* In the above example ozokerite and/or carnauba wax are substituted in part for the candelilla wax.

*Example 4:* A chlorinated naphthalene, containing as its principal constituent a trichloronaphthalene, is mixed with a cresol-formaldehyde resinoid in substantially equal parts.

A characteristic of a product obtained by adding gilsonite to halogenated naphthalene is the increase in its flow point with continued

heating. This renders the product particularly desirable for the sealing of condensers enclosed in cabinets or the like and/or closely associated with heat-generating electrical units, as danger of the sealing compound flowing on account of becoming heated and exposing the condenser elements is substantially eliminated.

We claim:

1. A sealing composition characterized by resistance to moisture penetration and including a wax-like halogenated naphthalene in solution with gilsonite.

2. A sealing composition characterized by resistance to moisture and including about 3 to 9 parts of a wax-like chlorinated naphthalene in solution with about 1 part of gilsonite.

3. A process of preparing a sealing composition which comprises melting a wax-like halogenated naphthalene and dissolving gilsonite in said molten halogenated naphthalene.

4. Sealing composition comprising a wax-like halogenated naphthalene and about an equal amount of a phenolic resinoid.

In testimony whereof we affix our signatures.

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