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UNITED STATES PATENT OFFICE.

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ELECTRICAL CONDENSER.

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This invention relates to condensers which use paper or a similar fibrous material as a dielectric between the several plates of the conductive material. In order to improve such condensers, the dielectric heretofore had been soaked with oil, paraffin or naphthalene. The melting point of such soaking agents, however, is not sufficiently high in order to render the condensers sufficiently insensitive against higher temperatures which arise in the operation of ignition devices for combustion engines. It is noted that naphthalene melts at a temperature of 80° C., while paraffin melts as early as at a temperature of from 38 to 56° C. according to its specific condition.

My invention is designed to improve the condenser in this respect, so that the same will be more suitable for the requirements of the practice. For this purpose the dielectric is treated with a soaking agent which consists essentially of a soap of wax which is insoluble in water. The original material from which this soaking mass is made may consist of so-called Montan wax or also bees wax. The saponification of the material may for instance be accomplished by treating the same with barium, calcium, magnesium or the like. Tests which have been made by the inventor have shown that lime-soap of purified Montan wax is especially advantageous for these purposes, the melting point of said lime-soap being at 93° C. and the point at which the mass becomes liquid being even as high as at 105° C. In one typical example, such a lime-soap of Montan wax can be made by soaping about 98 parts of Montan wax with about 2 parts of calcium oxide.

The dielectric constant of the fibrous material which is soaked with said mass is essentially equal to that obtained by soaking with paraffin. Condensers having a dielectric of this kind are possessed of a high capacity which remains constant during all variations of temperature arising in the practical application. The dielectric furthermore will have no hygroscopic properties whatever, so that the condensers made according to my invention in most cases do not need to be provided with especially tightened casings or the like.

I claim:

An electrical condenser having a dielectric which consists of fibrous material, said material being soaked essentially with a mass consisting of lime soap of purified Montan wax.

In testimony whereof I have hereunto affixed my signature.

ARTHUR MÖHRLE.