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NONSTICKING WAX ARTICLE AND METHOD OF PREPARATION

Norman Thompson, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

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11 Claims. (Cl. 196—149)

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This invention relates to petroleum wax as an article of commerce and more particularly to the prevention of sticking of wax cakes or similar articles.

Petroleum wax is produced commercially in the form of cakes or slabs for convenience in storing or shipping. A troublesome problem arises in commercial practice due to the tendency of the cakes to stick to each other. Wax cakes which have been stacked in piles for storage or transportation often adhere firmly to each other even when the piles are maintained at relatively shallow depth. This difficulty is particularly encountered with the grades of wax used for impregnating paper for wrapping or packaging foodstuff, such as waxes used for preparing milk containers, bottle caps, butter cartons and the like. The sticking tendency of the wax results in considerable loss of time and additional expense in using the wax in commercial operations.

Several proposals have been made heretofore for preventing sticking of the wax cakes, such as by shaping the cakes to minimize the area of contact between adjacent slabs or by placing layers of a material such as paper between the slabs; but none of these has proved entirely satisfactory for commercial practice.

The present invention is directed to and provides an economical and efficient method of overcoming the foregoing problem. According to the invention, wax articles, such as cakes or slabs, which normally have a tendency to adhere when in contact with each other are rendered nonsticking by applying to the surface of the article a hydrocarbon distillate oil as a thin film. The oil need be present as a surface film only in very minute amount, in fact, in such small amount that it is practically indiscernible on the surface of the wax. It is generally advantageous to apply the oil in an amount of at least 0.2 cubic centimeter per square foot of surface area and preferably of the order of 1.0 cubic centimeter per square foot. Larger amounts can be used if desired, but usually no advantage is to be gained by exceeding an amount of 2.0 cubic centimeters per square foot.

The oil used for producing the surface film on the wax should be a distillate oil and should have a viscosity of at least 40 seconds S. U. at 100° F. For example, oils with viscosities in the range 40–7000 seconds S. U. at 100° F. can be employed, although a preferred viscosity range is 100–500. The oil may be of either naphthenic or paraffinic base origin, and preferably is one which has a

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viscosity index of at least 80. It is desirable, of course, that the oil be of light color so that its application will not result in discoloration of the wax surface.

The oil may be applied as a film to the wax cake in any desired or suitable manner, such as by brushing or spraying it on the surface in a suitably minute amount.

In a more specific embodiment of the invention, the oil used for rendering the wax nonsticking is the same oil which was associated with the wax and from which the wax was separated. In refinery practice wax is obtained from wax-bearing distillate oils by first solvent dewaxing the oil to obtain crude wax and then removing the oil from the crude wax by solvent deoiling or by sweating. The resulting purified wax almost invariably still contains a small amount of oil. Accordingly the use for the purpose of the present invention of oil derived either from the step of dewaxing the distillate oil or the step of deoiling the crude wax results in a non-sticking wax product containing no constituent other than those already present in the wax. This is particularly advantageous from the standpoint of trade acceptance, since the addition of foreign ingredients to the purified wax is often considered objectionable and particularly so when the wax is to be used for manufacturing food containers.

Rendering of the wax cakes non-adhesive according to the method of this invention in no way affects the desired properties of the wax product. The presence of the oil film applied to the surface of the wax increases the total oil content of the article by only a negligible amount. It has been found that the resulting wax cakes may be pressed together with great force and that the cakes still will not adhere to each other to any substantial extent.

I claim:

1. An article of manufacture comprising a body of petroleum wax carrying a surface film, in amount effective to prevent sticking, of hydrocarbon distillate oil having a viscosity of 40–7000 S. U. seconds at 100° F.

2. An article of manufacture according to claim 1 wherein said distillate oil has a viscosity of 100–500 S. U. seconds at 100° F.

3. An article of manufacture comprising a body of petroleum wax to which has been applied a surface film of hydrocarbon distillate oil having a viscosity of 100–500 S. U. seconds at 100° F., said oil being present in amount of 0.2–2.0 cubic centimeters per square foot of surface.

4. An article of manufacture comprising a body of petroleum wax containing a small amount of associated hydrocarbon oil and carrying a surface film, in amount to prevent sticking, of distillate oil of the same composition as the oil contained in the wax.

5. An article of manufacture comprising a body of petroleum wax to which has been applied, in amount effective to prevent sticking, a surface film of hydrocarbon distillate oil previously separated from the wax.

6. Method of preparing a non-sticking petroleum wax article which comprises applying to the surface of a body of the wax a film of hydrocarbon distillate oil having a viscosity of 40–7000 S. U. seconds at 100° F. in amount effective to prevent sticking.

7. Method according to claim 6 wherein said distillate oil has a viscosity of 100–500 S. U. seconds at 100° F.

8. Method of preparing a non-sticking petroleum wax article which comprises applying to the surface of a body of the wax a film of hydrocarbon distillate oil having a viscosity of 100–500 S. U. seconds at 100° F. in amount of 0.2–2.0 cubic centimeters per square foot of surface.

9. Method of preparing a non-sticking petroleum wax article which comprises applying to the surface of a body of the wax a film of hydrocarbon distillate oil previously separated from the wax and in amount effective to prevent sticking.

10. In a method of preparing petroleum wax cakes in which a hydrocarbon distillate oil is dewaxed to obtain an oil approximately free of wax, the resulting crude wax is deoiled to remove most of the residual oil from the wax and the deoiled wax is then formed into cakes, the improvement for rendering the wax cakes non-sticking which comprises applying to the surface of the cakes a film of the hydrocarbon oil obtained in the specified oil dewaxing step and in amount effective to prevent sticking.

11. In a method of preparing petroleum wax cakes in which a hydrocarbon distillate oil is dewaxed to obtain an oil approximately free of wax, the resulting crude wax is deoiled to remove most of the residual oil from the wax and the deoiled wax is then formed into cakes, the improvement for rendering the wax cakes non-sticking which comprises applying to the surface of the cakes a film of the hydrocarbon oil obtained in the specified wax deoiling step and in amount effective to prevent sticking.

NORMAN THOMPSON.

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