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PRODUCTION OF WAXY PRODUCTS

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The present invention relates to the production of waxy products.

We have found that the properties of ester-waxes, i. e. of natural or artificial waxes consisting of or containing a substantial quantity of esters, are substantially improved by decomposing the esters present therein into their components (alcohols and acids). The splitting of the esters may be carried out in the usual way, as for example by heating the waxes with aqueous solutions of alkalies or acids, if desired in the presence of catalysts, such as the known fat-splitting catalysts, at atmospheric or increased pressure. If a crude wax be employed as the initial material it may be previously subjected to a physical or chemical treatment for the purpose of bleaching it, but the chemical properties of the wax are preferably not allowed to undergo any substantial change. The components obtained from the waxes may also be subjected to purification for example by bleaching, recrystallization or distillation, likewise while preferably preserving their chemical nature, i. e. without attack by oxidizing bleaching agents. The mixtures obtained by splitting the esters may be used in the same way as the waxes from which they are obtained, as for example in the production of colored or non-colored boot or floor polishes, preparations for polishing furniture or glazing paper and the like. Quite distinct mixtures may be obtained however by mixing the components in certain other proportions with each other or with other substances, as for example with hydrocarbons, such as paraffin wax or ceresine, with alcohols, such as benzyl or high molecular aliphatic alcohols, soaps, vegetable or animal waxes, fats, acids of animal or vegetable oils or fats, mineral, animal or vegetable oils, resins, balsams and the like or with the products obtained according to the U. S. specification No. 1,834,056 of one of the present applicants and to the present applicants' U. S. specifications Nos. 1,737,975 and 1,777,766, if desired with the addition of solvents such as turpentine oil, heavy benzines, solvent naphtha and the like, or diluents, such as low aliphatic alcohols according to the desired properties of the products. In the mixtures the alcohols may be present in a quantity of from 25 to 400 per cent of the acids but in most cases a proportion of from 33 to 300 per cent will usually give the best results. Saponified shoe creams will usually contain a preponderating quantity of acid whereas the ratio will be reversed if the preparations be desired to furnish a particularly high gloss. It will be easily understood by anybody skilled in the art that the nature and quantity of the additions can be varied in wide limits depending on the desired hardness, polishing power and other properties of the products.

The carboxylic acids present in the mixture or separated therefrom may be converted into halogenated, hydroxylated or saturated acids and all the acids may be converted wholly or partially into neutral derivatives thereof i. e. into salts and/or other compounds containing CO-groups, either alone or together with other organic acids by the addition of substances which were not contained in the initial product, as for example according to the said specification No. 1,834,056, in such a manner that the high molecular substances containing hydroxyl groups formed by the splitting are wholly or partially retained.

The products prepared according to the present invention are distinguished from the untreated ester-waxes by an increased polishing action, emulsifiability and elasticity and therefore constitute a valuable material for industries engaged in working up waxes.

The following examples will further illustrate the nature of this invention but the invention is not restricted to these examples.

Example 1

Carnauba wax is saponified in the usual manner with about 7 per cent of caustic lime in about 10 times its quantity of water and the resulting soap is decomposed with dilute aqueous sulphuric acid. In this manner a mixture of alcohols and carboxylic acids is obtained at the surface of the aqueous solution. After removing the mineral acid and the salts by washing with water and after dehydrating in a vacuo a hard wax is obtained which is distinguished by a ready emulsifiability and a high polishing action.

Example 2

Crude Montan wax is split up into alcohols and soaps by saponification in the usual manner with about double its quantity of an aqueous 6 per cent solution of caustic soda while heating for about 4 hours to from 140° to 150° C. The alcohols are separated from the mixture and bleached, as for example by dissolving them in an organic oxygen containing solvent and working the solution with a decolorizing agent, such as fuller's earth or decolorizing carbon. The carboxylic acids set free from the soaps by means of dilute acids, such as aqueous hydrochloric or sulphuric acids, are bleached according to the U. S. specification No. 1,777,766. By mixing

equal amounts of the components thus treated a hard wax is obtained having a high polishing action. The bleached acids may also be esterified for example with benzyl alcohol and then mixed with the alcohols obtained by the saponification. The product thus obtained has a great plasticity and flexibility.

Example 3

Carnauba wax is saponified in the manner described in Example 1. 1 part of the acids obtained is fused with 3 parts of the alcohols obtained and 8 parts of crude Montan wax, 1 part of a hard ozokerite, 11 parts of paraffin wax, 73 parts of turpentine oil are added to the melt together with 3 parts of a fatty ink prepared from 1 part of stearin, crude Montan wax and the black dyestuff nigrosine base. A black boot polish is obtained which furnishes a high gloss.

Example 4

Carnauba wax is saponified as described in Example 1. 3 parts of the acids obtained are fused with 1 part of the alcohols obtained and 6 parts of crude Montan wax, 0.8 part of Japan wax and 1.5 parts of colophony are added to the melt. A hot solution of 2 parts of potash and 4 parts of water-soluble nigrosine in 83 parts of water are then stirred into the melt in any usual and convenient manner. A highly valuable so-called saponified shoe-cream is obtained.

Example 5

Beeswax is saponified in the manner described in Example 1. 10 parts of the product containing about equal portions of the free acid and of the free alcohols of beeswax are fused with 7 parts of the mixture of the acids of carnauba wax and of the alcohols of carnauba wax prepared according to Example 1 and from 1 to 2 parts of colophony are added to the melt. 30 parts of hot turpentine oil are then stirred into the melt and subsequently 60 parts of hot water in which 1.5 parts of potash has been dissolved. A colorless polishing preparation giving a particularly high gloss is obtained.

What we claim is:—

1. The process for improving the properties of waxes containing esters, which comprises saponifying the said esters, separating alcohols and acid soaps by extracting the alcohols by means of an organic oxygen-containing solvent, setting free the acids from the soaps by means of dilute inorganic acids and mixing said alcohols and acids in a proportion different from equimolecular proportion.

2. The process for improving the properties of waxes containing esters, which comprises saponifying the said esters, separating alcohols and acid soaps by extracting the alcohols by means of an organic oxygen-containing solvent, setting free the acids from the soaps by means of dilute inorganic acids, decolorizing at least one of the said alcohols and acids and mixing the resulting alcohols and acids in any proportion.

3. The process for improving the properties of waxes containing esters, which comprises saponifying the said esters, separating alcohols and acid soaps by extracting the alcohols by means of an organic oxygen-containing solvent, converting the acids at least partially into neutral derivatives thereof different from said esters and mixing the said derivatives and the alcohols in any desired proportion.

4. The process for improving the properties of carnauba wax which comprises saponifying carnauba wax by means of an alkali, acidifying the soap mixture with an aqueous strong acid and removing the resulting alkali salts and remainders of said strong acid.

5. As new articles of manufacture, wax compositions comprising free acids corresponding to the acid radicles of the original esters and from 25 to 400 per cent of the weight of said acids of alcohols corresponding to the alcoholic radicles of the original esters.

6. As a new article of manufacture, a modified carnauba wax comprising free acids corresponding to the acid radicles of the original esters of carnauba wax and from 33 to 300 per cent of the weight of said acids of the alcohols corresponding to the alcoholic radicles of the said original esters.

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