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SOLID PERFUME

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This invention relates to improvements in perfumes and methods of preparing the same. My new perfume comprises essentially a retaining body of wax-like consistency, preferably in stick form, impregnated with a fragrant essence which is per se sufficiently volatile when exposed to the air to produce a fragrance of the same order as liquid perfumes of the concentration commonly employed for personal use.

The manufacture of articles of this kind has been frequently attempted in the past, but the perfume sticks and pastes heretofore produced have not been satisfactory and have never attained a permanent place in the market.

One of the principal defects in such articles as heretofore produced was a lack of permanence while in the container and also after its application to the person or clothing of the user. While it might be possible to pack the perfume containers in hermetically sealed cases to prevent loss by evaporation while on the merchants' shelves, it is manifestly impossible to so package the stick or paste that it will be kept tightly sealed after it is once open for use, and with an article of this kind it is essential that the quantity sold at one time be sufficient for at least several weeks' use. Hence, unless the stick or paste will retain its fragrance substantially unimpaired for a period of this duration when put up in a manner to be readily used, such, for example, as in ordinary lip stick containers, it will not meet with public acceptance.

A second difficulty not heretofore overcome in perfumes of this kind is that with the carriers heretofore employed a grease-like residue is left on the surface to which it is applied. The liquid carrier of ordinary perfume is largely alcohol, which evaporates without leaving any residue. The other ingredients, including the perfume base and fixative agents, although less volatile than the alcohol or other solvent making up the bulk of the liquid, also evaporate completely. In perfume sticks as heretofore made, the semi-solid compounds in which the perfume essence was incorporated have always contained some non-volatile substance which left a permanent stain or mark on the clothes or other surface to which it was applied.

After extensive research I have produced a perfume stick in which all these several defects are obviated. My improved perfume stick retains its fragrance substantially unimpaired for months when put up in stick containers such as commonly employed for lip sticks and the like

and not otherwise sealed or closed against the egress or ingress of air.

My improved perfume stick can be made in any of the various scents employed in liquid perfumes and when applied in the intended manner, namely, by rubbing so lightly on the skin or clothing as to leave only an infinitesimal and totally invisible quantity on the surface, the fragrance of the perfume will be perceptible for hours, in fact for a much longer time than liquid perfume. That is to say, for the same original intensity of odor the fragrance of my improved perfume stick will last longer than liquid perfume.

My improved perfume stick leaves no permanent residue of any kind and the spot where it is applied cannot be detected even on the sheerest fabrics.

The stick or carrier of my improved perfume stick, while of wax-like appearance, is in fact wax-free and completely volatile, so that after the fragrance of the perfume has been finally dissipated, there will be no residue whatsoever left of the originally applied wax-like film. In the improved perfume stick of this application the fragrance of the perfume concentrate is retained unchanged for months under ordinary storage conditions, and after the sticks are in use and exposed to the air there is no significant change in the fragrance of the perfume or the consistency of the carrier.

The manufacture of my improved stick is exceedingly simple and requires no apparatus other than a mixing kettle and the necessary molds. For the stick or carrier for the perfume, I employ, instead of wax, a mixture of solid alcohols of comparatively high melting point, and to manufacture the sticks it is only necessary to melt the mixture, incorporate the perfume concentrate of the desired scent, and solidify in molds.

The procedure will be fully understood from the following specific example: To a mixture of 20 pounds stearyl alcohol ($C_{18}H_{37}OH$) and 10 pounds of cetyl alcohol ($C_{16}H_{33}OH$), I add $12\frac{1}{2}$ pounds of cholesterolin absorption base and $12\frac{1}{2}$ pounds of perfume oil of the concentration employed in making ordinary perfumes wherein the base is incorporated in a volatile solvent. The perfume concentrate may of course be prepared by mixing together concentrates of different odors to produce any of the well known fragrances, in the same way as they are mixed for the production of ordinary perfume. The stearyl alcohol has a solidification point in the neighborhood of 54 to $57^{\circ} C.$ and cetyl alcohol has a

solidification point of about 46 to 48° C., and by varying the proportions of the two alcohols the melting point of the mixture may be modified to get a stick or carrier of the desired hardness. The cholesterol base which I employ is of the same consistency as that usually employed in making face creams and the like, and the two alcohols with the cholesterol base are mixed together in a water-jacketed kettle heated to a sufficient temperature to melt the alcohols and permit a thorough mixing of the various ingredients. To this molten mixture the perfume base or mixture of perfume bases is added, and the mixture then poured into the molds to produce the sticks or other shapes in which the product is to be marketed.

The amount of cholesterol added to the alcohol mixture is not critical and may be varied within wide limits, say from 5% to 15% or 20%. Also, of course, the amount of perfume concentrate may be varied within wide limits. The strength of perfume should not be too great, as otherwise it is difficult to apply the stick in sufficiently small quantity for the fragrance not to be over-powering. A thin film of solid alcohol resulting from the application of the perfume stick to the person or clothing slowly evaporates and retains the fragrance of the perfume until the last vestige of the alcohol is gone. A microscopic examination of the surface to which the stick is applied after a sufficient lapse of time for the evaporation to take place reveals no residue whatsoever of the alcohol base. The alcohols also seem to have a marked fixative effect on the perfume, for it is not necessary to employ in the perfume concentrates incorporated in the sticks any of the usual fixative agents which are added to perfume concentrates which are to be dispensed in volatile liquid carriers.

If desired of course the cholesterol base may be omitted altogether. The mixture of solid alcohols will retain the perfume and while readily applicable to the person, the alcohol alone will not spread quite as smoothly as when a small amount of cholesterol is added.

In the above example, I have designated cetyl and stearyl alcohols as the preferred mixture for making up the sticks into which the perfume concentrate is incorporated. It is to be understood, however, that other high-boiling alcohols may be used either alone or in mixtures of various proportions to produce a stick of the desired consistency and with or without cholesterol. High boiling alcohols which are not solid at ordinary temperatures, for example, lauryl alcohol ($C_{12}H_{25}OH$) whose freezing point is between 19° C. and 22° C. may be employed as part of the base in admixture with alcohols of higher solidification point in such quantities that the freezing point of the mixture will be above normal temperatures. Methods have recently been developed for the manufacture of synthetic high-boiling alcohols, other than those mentioned, which are not now on the market but which will doubtless be available within a short time, and it is to be understood that the formula herein given is by way of example only, and that the appended claims are not to be construed as in any

wise limited thereto. My improved solid perfume may be used for other purposes than in perfume sticks. For use in lieu of the "sachet bag" I mold the solid perfume in flat disks or other shapes which can be readily encased in a silk bag or other ornamental or protective covering. For this purpose I use a harder wax combination than for the perfume stick, as the perfume is not applied by rubbing and therefore the base need not be soft enough to rub off. Stearyl alcohol alone may be used.

It is also preferable for this purpose to use a smaller percentage of the concentrated perfume oils. The surface of the disk exposed to slow evaporation is large and consequently, not to have the fragrance too strong, the concentration of the perfume oils should be reduced.

It will be understood that in place of the cholesterol base, other "spreading agents" such as commonly employed in toilet preparations may be used, except that spreading agents which leave a greasy residue should be avoided.

The expression "perfume stick" is used in the appended claims in a generic sense to indicate any shape in which it is found desirable to mold the solid perfume to facilitate its application.

It will also be understood that my invention embodies broadly a new composition of matter, regardless of the form in which it is prepared. For example, instead of molding the perfume-impregnated carrier in stick or tablet form as above described, it may be used as a coating composition or impregnating composition to give fragrance to any desired article.

I claim:

1. A perfume stick comprising a carrier of wax-like consistency impregnated with a perfume concentrate, said carrier consisting predominantly of a high-boiling alcohol solid at normal temperatures.

2. A perfume stick comprising a carrier of wax-like consistency impregnated with a perfume concentrate, said carrier consisting predominantly of a mixture of high-boiling alcohols of different melting points solid at normal temperatures.

3. A perfume stick comprising a carrier of wax-like consistency impregnated with a perfume concentrate, said carrier consisting predominantly of cetyl alcohol.

4. A perfume stick comprising a carrier of wax-like consistency impregnated with a perfume concentrate, said carrier consisting predominantly of cetyl alcohol and stearyl alcohol.

5. A perfume stick comprising a carrier of wax-like consistency impregnated with a perfume concentrate, said carrier consisting predominantly of cetyl alcohol, stearyl alcohol and cholesterol.

6. A new composition of matter of wax-like consistency predominantly of a high-boiling alcohol solid at normal temperatures and a perfume concentrate.

7. A new composition of matter of wax-like consistency predominantly of a mixture of high-boiling alcohols solid at normal temperatures and a perfume concentrate.

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CERTIFICATE OF CORRECTION.

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It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, lines 61 and 65, claims 6 and 7 respectively, after "consistency" insert "--consisting--"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 29th day of December, A. D. 1942.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal).