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UNITED STATES PATENT OFFICE

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METHOD OF SHAMPOOING AND SETTING HAIR

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2 Claims. (Cl. 132—7)

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This invention relates to hair preparations, and more particularly to hair preparations which may be used for cleaning and shampooing operations as well as a hair coating operation; the invention also relates to a method of shampooing and hair setting.

Previous hair preparations have involved the use of a shampoo composition for cleaning the hair only, and where a hair setting or curling operation was involved, another composition was applied to the hair after removing the shampoo. The problem of straightening hair was particularly difficult when the nature of the hair was that it was excessively curly or nky, and many wave and curling lotions as ell as grease applications have been suggested for setting the hair in the desired fashion. Previous hair treatment operations also often involved the use of a separate brilliantine compound in order to impart gloss to the hair.

As a stimulant to the scalp, and a conditioner to the air, it has also been common practice to apply hot oil treatments in the form of a separate product, aside from the shampoo, grease, waving or curling lotions and brilliantine.

The present invention provides a composition and method of treatment whereby a single composition may be used to achieve the results described above. The hair preparation, according to the present inventon, does not leave a greasy film on the hair, and yet imparts gloss and stability to the individual strands, leaving the hair with a free, natural appearance after treatment.

In accordance with the present invention, the composition for cleaning and coating the hair comprises generally starch, lanolin, a synthetic detergent, and a wax, all of which are distributed in an aqueous medium. Depending upon the amount of water used, and also depending on the presence or absence of a thickening agent, which may be added if desired, the consistency of the product may vary from a rather fluid liquid state to a relatively hard creme. The viscosity of the product may, therefore, be varied, depending on the requirements of the manufacturer or user. Perfume or aromatic ingredients may be incorporated in the composition as desired, as well as coloring matter.

In general, the range of parts by weight in the basic composition is as follows:

25 to 40 parts starch
5 to 10 parts lanolin
40 to 65 parts detergent
4 to 6 parts wax

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The weight ratio of water to the non-aqueous ingredients may vary from about 1:1 to about 4:1. A particularly satisfactory formula is given in the example below.

The starch ingredient of the hair preparation may be any suitable vegetable carbohydrate or polysaccharide, such as starch derived from corn, potatoes, rice, tapioca, or wheat. The lanolin is preferably introduced into the hair preparation in the form of an aqueous emulsion, a desirable weight ratio being 1 part lanolin in 3 parts water, although this ratio may be varied up to 50% lanolin by weight or down to about 10% lanolin by weight, depending at least in part on the ultimate viscosity desired in the final preparation.

The detergent used in the composition is preferably a synthetic detergent and preferably falls within the pH range between 6 and 8. Non-neutral detergents may be used with appropriate buffers to bring the pH within a generally neutral range. As examples of suitable synthetic organic detergents, there are included the sodium alkyl aryl sulfonates, which have been found satisfactory in the hair preparation. Other examples of suitable detergents are those having the general formula R—SO_3—M, wherein R represents an organic radical containing at least one group having more than 8 carbon atoms and R is selected from the following: alkoxy group, alkyl group, mixed ether of long chain fatty acid, glycol ester of a long chain fatty acid, alkyl substituted amide of a fatty acid, alkyl substituted aromatic radical, hydroaromatic radical, and ester of a dibasic acid, and M represents a radical selected from the group consisting of alkali metal, hydrogen and ammonium.

Included in the group of synthetic organic detergents and emulsifying agents are compounds where R is an alkoxy group producing, for example, compounds between

$C_{10}H_{21}O—SO_3Na$

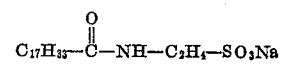
to $C_{18}H_{37}O—SO_3Na$. R may also be an alkyl group producing, for example lauryl sodium sulfonate and cetyl sodium sulfonate; or R may be a mixed ether of long and short chain aliphatic groups as, for example, in the compound

$C_{17}H_{33}O—C_2H_4—SO_3Na$

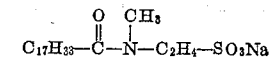
R may, for example, be an alkyl ester of a long chain fatty acid, for example as in the compound

$$C_{17}H_{33}—\overset{\overset{O}{\|}}{C}—O—C_2H_4—O—SO_3Na$$

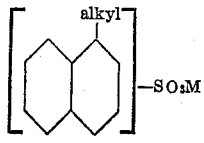
R may also be an alkyl substituted amide of a fatty acid, as for example in the compounds



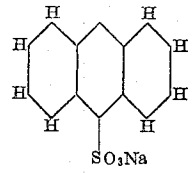
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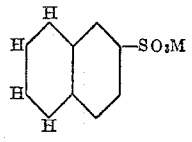
R may be an alkyl substituted aromatic radical as in various commercial compounds having the formula



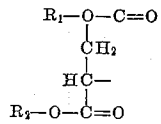
as for example the sodium salts of alkyl naphthalene sulphonic acids and potassium salts of alkyl naphthalene sulphonic acids. Other suitable detergents are those in which R is a hydroaromatic radical, as for example in the following compounds:



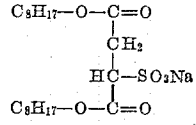
and



wherein M may be sodium, potassium, or an ammonium radical. Among the suitable synthetic detergents are also those having the foregoing general formula, in which R is an ester of a dibasic acid, such as



in which one of R_1 and R_2 may be an alkyl radical from C_3H_7— to C_8H_{17}— and the other hydrogen, or both R_1 and R_2 are such alkyl radicals, as for example in the commercial stablizer which has the formula



The wax may be either inorganic or organic, for example paraffin wax or beeswax, respectively. The wax is preferably introduced into the compound in an aqueous emulsion, the proportions of which may generally be approximately the same as the lanolin proportions. With respect to the lanolin and the wax in the ultimate compound, the preferred range is between 5 and 10% by weight of lanolin, and between 4 and 6% by weight of wax, based on the non-aqueous ingredients in the ultimate composition.

The addition or omission of perfume in the final composition is a matter of choice, as is the addition or omission of coloring matter, such as a vegetable coloring compound. In either instance, less than 1% by weight based on the non-aqueous ingredients is adequate.

If desired, for the formation of cremes, relatively small amounts of gelatin or mucilaginous material may be introduced, or the starch component may be increased in order to impart additional viscosity.

A hair preparation composed or made up of the following ingredients:

Example

Ingredients:	Parts by weight
Starch	35
Lanolin	6.7
Detergent	53.3
Wax	5
Water	330

The water was placed in a container and brought to about 212° F. The starch, which forms a base for the emulsion, was added, after which the lanolin and wax were added in the emulsion state, in each instance the emulsion being about a 25% aqueous emulsion. The synthetic detergent (in this instance a sodium alkyl aryl suffonate) was added and fractions of one part each of vegetable coloring and perfume were added, after which the entire composition was dispersed in the aqueous medium, assisted by the detergent having the properies of a wetting agent. After cooling, the composition was fairly fluid and ready for bottling.

In the preferred method of applying the hair preparation, the user first wets the hair on the head with quite warm water (e. g. 125 to 150° F.) and the hair preparation is sprinkled lightly on the head. Brisk rubbing permits the preparation to act as a shampoo and, preferably, the preparation is rinsed from the hair, at least when the air was previously sufficiently soiled or greasy so as to warrant the removal of foreign matter. If the hair is not in that condition, the preliminary shampoo is sufficient and the preparation may be permitted to set after a light rinse with relatively warm water. The hair is then dried and ready for straightening, styling and wave setting in the usual manner.

One of the advantages of treatment of the hair with the treatment according to this invention is that lanolin is applied to the hair, and the wax serves as a medium for straightening kinky hair, as well as for waving, curling and conditioning the hair. After the operation is completed, a greaseless gloss remains. The composition is free of strong and harmful chemical agents, and of course detergents which are excessively strong or non-neutral in their characteristics are preferably to be avoided unless they are buffered.

Only small applications, e. g. one and one-half tablespoons of the hair preparation are required for normal conditions and even where heavy grease has previously been applied the application of three tablespoons of the preparation is sufficient to remove the grease. The preparation also acts as a lacquer for the hair and is particularly useful in preventing dryness and removing tendency of the hair to kink.

Under relatively heavy grease or soiled conditions it is preferred that two applications of the preparation be made. The first application is preceded by a light rinse of the hair with relatively warm water, as described above, after which the hair preparation of the invention is

used as a shampoo and the major portion thereof is rinsed away with cooler water. The second application is made after a rinse of water at a lower temperature than the first rinse, e. g. in the temperature range from about 105 to 135° F. Consequently the application and use of the preparation as a shampoo is preferably made at a slightly higher temperature than when the preparation is used for waving, setting, coating and fixing purposes.

What is claimed is:

1. The method of treating human hair in preparation for waving which comprises soaking the hair with warm water, distributing through the wet hair a composition comprising starch, lanolin, neutral synthetic detergent and wax, all evenly distributed in an aqueous medium, rinsing and drying the hair, thereby to leave on it a greaseless coating which permits the hair to be set.

2. The method of cleaning and setting human hair which comprises wetting the hair with warm water, distributing into the warm wet hair a composition comprising starch, lanolin, synthetic detergent, and wax all evenly distributed in an aqueous medium, applying hot water to the hair to remove the water soluble portion of said composition, again wetting the hair with warm water, again applying said composition to the hair, rinsing and drying.

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