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[54] **METHOD OF SHAVING**

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[52] **U.S. Cl.** **83/14,** 83/22, 424/73

[51] **Int. Cl.** **B26d 7/08**

[58] **Field of Search** 83/14, 22, 13; 424/73

[56] **References Cited**

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[57] **ABSTRACT**

A method of shaving which comprises applying to the skin, a solid aqueous solution of a selected high molecular weight water soluble polymer and thereafter passing a blade type razor over the skin to shave off unwanted hair.

4 Claims, No Drawings

METHOD OF SHAVING

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of application Ser. No. 143,261 filed May 13, 1971.

BACKGROUND OF THE INVENTION

The search for an improved method of removing unwanted hair from the human body continues and in spite of innovations such as electric razors, the majority of shavers still prefer to shave with a blade type razor which continues to yield close, clean shaves. However, because it does permit securing close shaves, the blade type razor has a tendency to shave off some skin surface along with hair, resulting in many instances in cuts, nicks and skin abrasion and consequent skin irritation. Numerous preparations have been devised to alleviate those unhappy consequences of shaving but it is evident from discussion with shavers that the problem of skin irritation from shaving still remains. Typical preshave preparations, now in use, include soap lather, aerosol foam, brushless emulsions, fluids or lotions which usually are aqueous solutions of water soluble polymers and gel type preparations. The apparent premise, in formulation of all those preparations, is that such preparations with a claimed high degree of lubricity would solve the problem of shaving irritation. It is most apparent however, that simply supplying a lubricating agent to the skin surface is only a partial solution to the problem of skin irritation due to shaving.

In accordance with the present invention, it has been determined that to minimize major discomforts of shaving, that a means should be provided to truly minimize contact between the skin and razor edge during shaving. To this end, the invention embodies a novel preshave preparation and a means for applying that preparation to the skin prior to shaving.

This new concept of a preshave preparation is a solid aqueous solution of a selected high molecular weight water soluble polymer. For the purpose of the invention, it has been determined, because of its unique physical and chemical properties, that polyethylene oxide water soluble polymer with a molecular weight of about 4,000,000 in solid aqueous solution provides an excellent example of the properties of the preshave preparation. This preparation is formulated as a solution of 20 percent by weight of the selected polymer, polyehtylene oxide of about 4,000,000 molecular weight and 80 percent by weight of aqueous solvent. This resulting solution is a truly solid substance, by definition. It has a rubber-like consistency and may demonstrate slight tackiness but not adhesiveness to the touch.

Small, 50 Gm., quantities of this preshave preparation can be prepared by first, placing 40 Gm. of distilled water in either a flat bottom stainless steel or a non-metallic container, approx. 4 inches diameter, then distributing a uniform layer of 10 Gm. of the selected powdered polymer on the water surface and then stirring the two components together for about 15 minutes with a stainless steel spoon or similar stirrer. Very rapidly, the mixed components will begin to assume a solid character. After setting for about 48 hours, the mixture will have acquired a satisfactory homogenous state and readiness for use. Formulating

larger or production quantities of the preshave preparation can be accomplished with equipment, such as, an Atlantic Research Corporation Helicone Mixer. Other mixers specifically designed for mixing highly viscous materials may also be used.

Various additives may be incorporated in the solid solution type preshave preparation as desired. Thus, for example, a solution stablilizer to enhance the long term storage capability of the composition and a bactericide to inhibit bacterial development in the product. Either isopropanol or ethanol are suitable both as a solution stabilizer and bactericide. Isopropanol has been incorporated into the preshave preparation to the extent of about 38 percent by weight of the solution without any significant change in physical character or shaving performance of the preshave preparation. In a preferred composition, a solution stabilizer and bactericide such as isopropanol or ethanol is incorporated into the solid aqueous solution in the amount of about 20 percent by weight of the solution. Other additives, such as perfumes and non-toxic coloring agents can be added as desired.

This preshave preparation, being a truly solid substance, cannot be applied to the skin or packaged similarly to any of the other preshave preparations now available. It cannot be dispensed from an aerosol container or satisfactorily squeezed from a tube or poured from a bottle or dipped out of an open top jar. It cannot be spread or distributed onto the skin surface with the fingers or palms of hands or spread with porous or solid pads or the like. A practical container for this product is a cylinderical open-top container of about 1 inch to 1.5 inch Diameter with a push-up bottom plug or other means of continually exposing about ⅛ inch thickness of the preshave preparation above the top of the container. The container should be equipped with an easily removable tight fitting cover cap.

One method of filling the container package with the preshave preparation is to place the preparation in a cylinder or vessel having an attached extrusion nozzle with an inside diameter slightly less than inside diameter of the container package and applying sufficient mechanical or hydraulic pressure to the preparation in the cylinder or vessel to cause it to be extruded from the nozzle and subsequently, guiding the extruding preparation into the open top of a container package until it is filled. When a package is filled, the extruding preparation is severed and the filling procedure repeated with other container packages.

Because of its solid nature, this preshave preparation cannot be applied to the skin surface as with other preparations. It must be placed on the skin by stroking a surface of the preparation directly onto the skin. This cannot be accomplished if the skin is dry as the preparation will not then transfer to the skin to any satisfactory degree. If however, the skin is wet before stroking it with the pre-shave preparation, it will then move smoothly over the skin surface and the normal skin roughness with projecting hairs, in the presence of the water on the skin, will result in a layer of satisfactory thickness of an unusually high concentration of the selected polymer molecules covering the skin surface.

This tough layer of polymer molecules, in aqueous solution, on the skin, demonstrates a remarkable ability to guard the skin surface from the cutting and abrading action of the razor blade as evidenced by a very appre-

ciable reduction in nicks, cuts, abrasion and aftershave irritation common to shaving.

The preshave preparation, of the invention, is not a continuous progression of formulation from a dilute fluid aqueous solution of a high molecular weight water soluble polymer. A dilute aqueous solution of polyethylene oxide of about 4,000,000 molecular wt. with a polymer concentration up to about 1.0 percent by weight yields a preshave preparation very typical of the lotion or fluid type preparations. However, when this polymer is concentrated above about 1.0 percent by weight, the fluid solution becomes unusable as a preshave preparation as there is no useful means of applying it to the skin surface and in more than about 1.0 percent by weight, this polymer, in fluid aqueous solution, remains non-useful as a preshave preparation until it is formulated into an aqueous solution at a concentration of about 10 percent by weight. At that polymer concentration, the preparation assumes the basic characteristic of the solid aqueous solution type preshave preparation useful in the invention. Maximum shaving efficiency is achieved at a polymer concentration above 10 percent by weight. A very useful formulation of the solid aqueous solution of the selected water soluble polymer is achieved at about 20 percent by weight polymer concentration.

My Method of Shaving is practiced in accordance with the following procedure:

1. Wash the face or skin area to be shaved with soap and water.
2. Rinse soap from skin and leave it wet.
3. Stroke the skin area, to be shaved, with the exposed area of the preshave preparation until an obvious drag or friction develops between the skin surface and surface of the preshave preparation.
4. Pass a blade type razor over the skin to shave off unwanted hair.
5. Lightly rinse shaved skin with water and wipe dry or simply wipe skin with damp cloth or allow skin to dry after shaving without either rinsing or wiping with damp cloth.

The preshave preparation is applied to the skin, usually in less than 1 minute. If the razor should develop any friction or drag on the skin due to excessively low atmospheric humidity or delay in shaving, it is only necessary to pass the wet fingertips over the skin to completely reactivate the shaving preparation.

When shaving more than one days growth of hair, after stroking the preshave preparation onto the skin, it may be desirable to briefly and briskly rub fingertips over skin to assure intimate contact of preparation with skin.

When employing this method of shaving, there is a definite reduction in the feel of the razor edge against the skin.

This preshave preparation possesses excellent emollient properties and is effective as an aftershave preparation if some of the residual preparation is allowed to remain on the skin.

Those persons who have used the method of shaving of the invention, have reported better results than had been achieved with their usual method of shaving. Also, the majority reported a remarkable improvement as evidenced by reduction or elimination of the usual cuts, nicks and aftershave skin irritation.

Those persons, using this method of shaving to remove hair from underarms, report, almost without exception, that immediately after shaving they can apply their usual anti-perspirant without sting or discomfort. This is contrary to their usual experience.

An inherent characteristic of the invention, of real commercial value, is embodied in the highly concentrated nature of the preshave preparation. Shaving tests have shown that about 12 Gm. net weight of the product will yield daily shaves for about 6 months. Consequently, a package 1.25 inch Diam. and 4 inches length with a weight of less than 3 oz. will contain sufficient quantity of the preshave preparation to yield daily shaves for about 6 months. The advantages in reduction of package costs, shipping, storage and sales display costs, and convenience to the user are obvious to those engaged in merchandising.

A further benefit of the reduced packaging requirement is conservation of raw materials, and subsequent reduction in empty package disposal.

The invention claimed is:

1. A method of shaving which comprises the steps of stroking the wetted skin directly with a solid aqueous solution of a high molecular weight water soluble polymer where the polymer is polyethylene oxide with a molecular weight of about 4,000,000 and thereafter, shaving off unwanted hair with a blade type razor.

2. A method according to Claim 1 where the polymer is present in the solid aqueous solution at about 20 percent by weight of the solution.

3. A method according to Claim 1 where the solid aqueous solution comprises about 20 percent by weight of the polymer and about 20 percent by weight of isopropanol, a solution stabilizer and bactericide.

4. A method according to Claim 1 where the solid aqueous solution comprises about 20 percent by weight of the polymer and about 20 percent by weight of ethanol, a solution stabilizer and bactericide.

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