Feb. 4, 1936. H. REICHLE 2,029,835

APPLICATOR

Filed Sept. 8, 1934

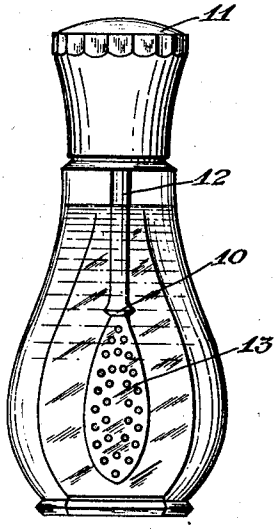


Fig. 1

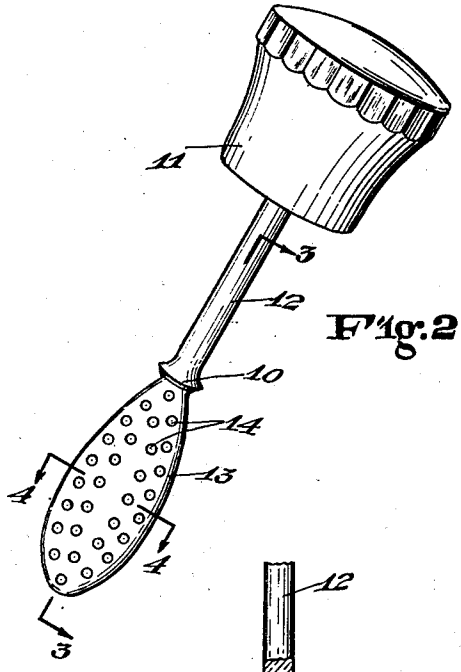


Fig. 2

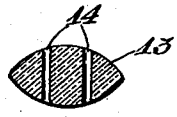


Fig. 4

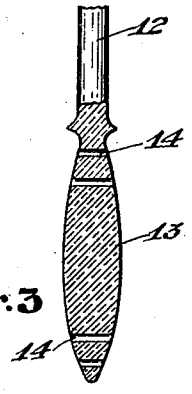


Fig. 3

Hans Reichle INVENTOR

BY Mock & Blum

ATTORNEYS

Patented Feb. 4, 1936 2,029,835

UNITED STATES PATENT OFFICE

2,029,835

APPLICATOR

Hans Reichle, Bronx, N. Y., assignor to Northam Warren Corporation, New York, N. Y., a corporation of New York

Application September 8, 1934, Serial No. 743,167

1 Claim. (Cl. 128—269)

This invention relates to improvements in applicators for applying liquids to the skin, hair or the like, and has for its object the provision of an improved form of applicator made of a non-absorbent material such as glass, porcelain, synthetic plastic or the like.

The principal object of this invention is the provision of an applicator for liquids, made of non-absorbent material in which a considerable quantity of liquid can be applied to the skin quickly and without spilling.

A further object of this invention is the provision of an improved form of applicator which is sanitary, can be readily cleaned and is inert to the action of chemicals.

Further objects of the invention will be apparent from the specification and drawing in which Fig. 1 is a front elevation of the cap applied to a liquid container.

Fig. 2 is a perspective view of the cap with the operative end attached.

Fig. 3 is a fragmentary section on line 3—3 in Fig. 2, and

Fig. 4 is a section on line 4—4 in Fig. 2.

10 indicates an applicator attached to a cap 11 having the shaft 12 and the operative end 13. The cap 11 may be of any form and is no part of our invention.

The operative end 13 of the applicator may be of elliptical or spoon or any other desired form and is provided with a series of apertures 14 extending through the body of the applicator as shown. The size of these apertures is very important in the making of an applicator of this kind as on the size and shape of the apertures depends the satisfactory delivery of liquid in the application of which the device is employed. If these apertures 14 are too small, then through the action of capillarity the liquid is too easily retained in the apertures. If these apertures 14 are too large, then the liquid in the apertures is not held therein and the applicator does not function properly.

I have found by experiment that, for a given preparation, there should be a definite relationship between the specific gravity and the flowing quality of the liquid used and the size, depth and number of holes employed in this form of applicator.

For example, I have found that the scale below indicates, generally, the ratio of optimum bore diameter to specific gravity, for a liquid deodorant consisting of:

Aluminum chloride (crystalline)	8 lbs. av.
Hydrochloric acid	4 ozs. av.
Phenyl ethyl alcohol	4 ozs. av.
Water	5 gallons US

Specific gravity of 1.0000 liquid requires hole of .0555" diameter.

Specific gravity of 1.1256 liquid requires hole of .0625" diameter.

Specific gravity of 1.2000 liquid requires hole of .0666" diameter.

Specific gravity of 1.5000 liquid requires hole of .0832" diameter.

Specific gravity of 1.7000 liquid requires hole of .0943" diameter.

Specific gravity of 2.0000 liquid requires hole of .1110" diameter.

Specific gravity of 2.2500 liquid requires hole of .1248" diameter.

These figures are, of course, subject to some latitude where preparations of other composition are concerned, the viscosity of the preparation employed, as well as its "wetting" property for the material of the paddle-like applicator being additional factors entering into the determination of the optimum diameter for the bores 14. As is obvious, where the material is quite viscous or has great affinity for the paddle material, the coefficient of adhesion of the preparation, or more properly, the coefficient of capillary attraction in the bores 14, will be greater. The bores 14 should, accordingly, be of larger size than otherwise indicated by the specific gravity of the preparation, in order to facilitate discharge and proper distribution of the preparation upon the skin surface.

It is evident that applicators of this kind can be made of materials very resistant to the action of chemicals or solvents, preferable materials being glass, porcelain or synthetic plastics or resins.

Although I have described a preferred embodiment of my invention, it is apparent that the size and number of the holes may be varied from time to time and also that in some cases it may be possible to make an operative applicator of this type without having the apertures extend entirely through the body of the applicator.

Having fully described my invention, what I claim is:

An applicator for distributing body deodorant or the like upon flat skin surfaces, comprising: a handle member, a broad, rigid, double-faced blade carried by said handle member and constituting therewith a paddle-like structure, and well means in said blade for holding a quantity of lotion and automatically feeding the same to either face of said blade when brought into flat contact with the skin surface to be coated, said well means consisting of a plurality of parallel non-communicating bores each having a diameter of approximately one-twelfth of one inch and extending completely through said blade from face to face thereof so as to be individually chargeable by simple immersion of the blade in lotion and automatically gradually dischargeable by flat contact of either blade face with the skin surface to be treated.

HANS REICHLE.