Patented May 15, 1923. 1,455,015

# UNITED STATES PATENT OFFICE.

FREDERICK C. ATKINSON, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO AMERICAN HOMINY COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF NEW JERSEY.

## SOAP.

No Drawing. Application filed April 5, 1919. Serial No. 287,856.

*To all whom it may concern:*

Be it known that I, FREDERICK C. ATKINSON, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Soap, of which the following is a specification.

My said invention consists in an improved toilet soap characterized by the free alkali of the soap being inhibited in its corrosive action on the skin by the proteins of corn-meal combined with the soap stock, while leaving the detergent action of the soap unimpaired.

In preparing this soap, I take such toilet soap stock as may be found most advantageous, both in quality and in other respects, combine with it a specially prepared corn-meal, so prepared as to give it a very smooth texture. The corn-meal and soap stock is combined in an intimate mixture and pressed into cakes or tablets, or reduced to the form of powder.

It will be understood that by "toilet soap stock" I mean a complete neutral soap, chemically speaking, that is a neutral ester of the alkaline base with one or more members of the fatty acid series. By "specially prepared corn-meal" I mean a product of corn suitably prepared so as not to present sharp, rough edges or possess a gritty texture. This is accomplished by re-grinding the ordinary corn-meal in a ball mill, the attrition of the balls or pebbles in the mill polishing off the rough edges and eliminating the gritty texture of the product. Corn-meal may also be prepared by grinding flaked grits, or grits rolled to a very thin form, between heavy rollers, which meal or flour may or may not require re-grinding in the ball mill, depending upon the specific use for which the soap is intended.

In preparing the mixture of soap and meal, soap is preferably dried to a very low percentage of moisture. This may be done by ageing in a fairly dry atmosphere, or it may be done by artificial means, such as any of the ordinary dry kilns used for industrial purposes. The dried soap is then finely pulverized, which may be done in any of the mills ordinarily used for grinding purposes and is mixed in the proper proportion with the corn-meal. The proportion which has been found the most satisfactory for this toilet soap is between 25% and 30% of meal combined with 75% to 70% of the pulverized soap. This gives a mixture which may be pressed into cakes or tablets by means of compress tablet machines of common type for the purpose.

When the product is to be put on the market in powder form it is of an advantage to add even more corn-meal than when preparing the soap in cake form.

The perfume may be added at this stage or to the original soap, either as the soap is poured from the soap kettles into the temporary molds while still in liquid form, or it may be added to the powdered soap before the addition of the corn-meal.

In making glycerine soaps it is impossible to reduce to a powdered form because of its hygroscopic nature; consequently, I take the solid form and by putting this into a kneading machine I am able to incorporate the powdered meal with the soap while still in a very firm, pasty form.

The result is a toilet soap possessing the virtues first above mentioned, and free from any objectionable characteristics, and one that can be used freely without danger of causing roughness or chapping of the skin. In some instances and for purposes where a soft semi-abrasive action is required, I add to the meal a small percentage of cellulose obtained from corn-cobs. This corn-cob cellulose, when finely ground, is very soft and velvety, and possesses the "body" required.

When it is desired to prepare a soap containing the special corn-cob cellulose we add the cellulose of the proper degree of fineness, either to the corn-meal previous to the mixing of it with the soap or to the soap itself, or to the mixture of corn-meal and soap. The mode of admixture is immaterial in so far as the resulting product is concerned, but as a matter of convenience it is desirable to mix the corn-cob cellulose with the meal previous to mixing it with the soap. The special corn-cob cellulose is prepared by boiling corn-cobs successively with water with dilute acids, with a dilute caustic solution; again with acids and bleaching by means of chlorine or bleaching powder or any other suitable bleaching agent and finally washing out the excess of the bleaching agent. The cellulose then remains in a white, granular form, which after being dried is pulverized to the proper degree of

fineness and usually finished in a ball mill to accentuate its smooth, velvety consistency.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. A toilet soap consisting of toilet soap stock combined in an intimate mixture with corn meal and finely ground corn-cob cellulose, substantially as set forth.

2. A toilet soap consisting of toilet soap stock combined in an intimate mixture with corn-meal and finely ground corn-cob cellulose, and pressed into cakes of the desired form.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 24th day of March, A. D., nineteen hundred and nineteen.

FREDERICK C. ATKINSON. [L. S.]

Witnesses:
M. L. SHULER,
MARTHA MARTINDALE.