UNITED STATES PATENT OFFICE.

ISAAC VANDEN BROEK, OF NEW YORK, N. Y.

ART OF MAKING HYDROCARBON SOAPS.

959,820. Specification of Letters Patent. Patented May 31, 1910.

No Drawing. Application filed June 6, 1907. Serial No. 377,506.

To all whom it may concern:

Be it known that I, ISAAC VANDEN BROEK, a citizen of the United States, (residence and post-office address, 51 East Twenty-fifth street, Manhattan, New York city, New York,) have invented certain new and useful Improvements in the Art of Making Hydrocarbon Soaps, of which the following is a specification.

There have heretofore been known and in some forms commercially used soaps containing volatile hydro-carbon oils such as naphtha.

The object of the present invention is to make in a simple and economical manner a better soap of this character and one which shall better retain than heretofore the hydrocarbon oil notwithstanding its volatile nature.

To these ends I manufacture my soap as follows: I procure commercial potash lye, tallow, cocoanut oil or the equivalent, and a comparatively small quantity of pure soap free from acids, such as good castile soap, or in lieu of this last I may make such pure soap from vegetable oil. I then in the most preferred form of my invention proceed as follows: I take say one hundred grams of the pure soap and dissolve it in one kilogram of water, preferably at a temperature of about 120° Fahrenheit, maintaining this temperature throughout the process. I then mix with this solution while stirring ten grams of ammonia of, say, ninety-six per cent. specific gravity, and into this I stir gradually a small constant stream of kerosene and naphtha in equal parts, or of kerosene and naphtha mixed, as aforesaid, preferably using a hollow stirrer through which the stream may be introduced until I have incorporated about one hundred kilograms. The hydrocarbon is preferably passed through a heated coil so it reaches a temperature of about 120° before passing into the soap emulsion. For convenience I will call this my hydrocarbon emulsion. I also take, say, thirty kilograms of the tallow and thirty kilograms of the cocoanut oil and melt the same by heat. I introduce in a stream thirty kilograms of potash lye 36° Baumé, maintaining the heat preferably between 120° and 140°. To the alkali soap so formed I now add about ten kilograms of the hydrocarbon emulsion, using a hollow stirrer and sufficient head or pressure so as to conduct the emulsion down into the mass and stir it into it gradually, allowing the mass to cool. Preferably I employ cooling coils so as to reduce the temperature rapidly and check the evaporation of the hydrocarbon. As the mass cools it breaks up into a lumpy solid mass which is then thereafter preferably ground or further broken up into granulated form. In this granulated form I box it and ship it. The product so obtained forms an excellent and pure hydrocarbon soap of high detergent quality and without the presence of adulterants such as are commonly present in the cheaper grades of soaps now on the market. The volatile hydrocarbon is incorporated and held in a manner which, so far as I am aware, is peculiar to this process. I am not able to state whether the action of the ammonia is a purely chemical action upon the soap or a catalytic action in the process, the relatively small quantity used in proportion to the other bodies present indicating to me the possibility of the latter.

As it is conceivable that this product may be made by other processes, I claim the product as an article of manufacture, in my copending application No. 377,507, filed herewith, separately from the process by which it is formed, the present application being for the particular process.

What I claim and desire to secure by these Letters Patent is:—

1. The improvement in the art of making hydrocarbon soaps, which consists in first emulsifying the hydrocarbon with soap and the aid of a relatively minute quantity of ammonia and then gradually stirring it into a heated mass of soap and cooling the same.

2. The improvement in the art of making hydrocarbon soaps, which consists in first emulsifying the hydrocarbon with a dilute solution of soap containing a small quantity of ammonia and then gradually stirring it into a heated mass of soap and cooling the same and then granulating the mass so produced.

3. The improvement in the art of making hydrocarbon soaps, comprising the step of emulsifying a volatile hydrocarbon with a warm aqueous solution of soap containing a small quantity of ammonia for causing or aiding the emulsifying action.

4. The improvement in the art of making hydrocarbon soaps, comprising the step of emulsifying a volatile hydrocarbon consisting largely of naphtha by stirring the hy-

drocarbon into a solution of soap containing approximately ten parts by weight of soap to one part of ammonia water at a temperature approximating one hundred and twenty degrees Fahrenheit.

5. The improvement in the art of making hydrocarbon soaps, comprising the step of emulsifying a volatile hydrocarbon consisting largely of naphtha by stirring the hydrocarbon into a solution of soap containing approximately ten parts by weight of soap to one part of ammonia water at a temperature approximating one hundred and twenty degrees Fahrenheit and continuing the addition of hydrocarbon until at least one hundred parts thereof for each part of soap are present.

6. The improvement in the art of making hydrocarbon soaps, comprising the step of emulsifying a volatile hydrocarbon consisting largely of naphtha by stirring the hydrocarbon into a solution of soap containing approximately ten parts by weight of soap to one part of ammonia water at a temperature approximating one hundred and twenty degrees Fahrenheit and the subsequent step of stirring and mixing such emulsion gradually into a mass of soap in the liquid state and to an extent not exceeding fifteen percentum of the emulsion relatively to the mass of soap by weight.

7. The improvement in the art of making hydrocarbon soaps, comprising the step of making an emulsion of volatile hydrocarbon with an aqueous solution of approximately ten parts by weight of soap to one hundred parts by weight of water to which has been added approximately one part of ammonia water.

8. The improvement in the art of making hydrocarbon soaps, comprising the step of emulsifying volatile hydrocarbon, consisting largely of naphtha by stirring it into an aqueous soap solution in a substantially neutral or but very slightly alkaline condition and at a temperature of approximately one hundred and twenty degrees Fahrenheit.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ISAAC VANDEN BROEK

Witnesses:
E. VAN ZANDT,
A. L. O'BRIEN.