

UNITED STATES PATENT OFFICE.

J. B. RAND, OF FISHERVILLE, NEW HAMPSHIRE.

IMPROVEMENT IN THE MANUFACTURE OF SOAP.

Specification forming part of Letters Patent No. 45,342, dated December 6, 1864.

To all whom it may concern:

Be it known that I, J. B. RAND, of Fisherville, county of Merrimack, State of New Hampshire, have invented a new and useful Improvement in the Manufacture of Soap; and I do hereby declare the same to be fully described in the following specification.

The nature of my invention consists of a soap made by combining caustic soda, lye, grease, fat or oil, and white clay, (kaolin,) as hereinafter described. The clay or kaolin which I use, and which I prefer, is found near Bennington, Vermont. It is a very firm and fine variety of porcelain clay; but I do not limit myself to the clay of this bed, as no doubt a like material may be obtained from other places.

In carrying out my invention I first make a caustic-soda lye that is from 20° to 25° of strength by Baumé's hydrometer, which I produce by either using sal-soda or soda-ash dissolved in hot water and leached through quick-lime until it is rendered caustic, or by dissolving the caustic soda, which can be bought as an article of commerce ready prepared. The latter, being the most convenient, is preferable to use.

I mix the above-named ingredients about as follows: caustic-soda lye, from 20° to 25° of specific gravity by Baumé's hydrometer, by weight, one hundred parts; grease, oil, or fat, by weight, sixty-four parts. I then melt the grease over a slow fire and add the lye to the grease, and boil it until it is saponified. I also take of the white clay, by weight, thirty-five parts, and of the lye thirty-five parts. I first saturate the clay with cold water and work the lumps out. Then add the lye heated to about 70° centigrade and stir a few minutes, when it will be found that the clay has saponified as readily as the grease and lye. I now add the saponified clay to the saponified grease, all being yet in a melted or fluid state, and bring the whole mass to a boiling heat, stirring well until the whole becomes incorporated into one homogeneous mass. It is then ready to pour off into frames or coolers to cool, and when cool it is of a proper consistency to cut into bars for commerce.

By the combination of the clay with the grease a much larger amount of alkali is com-

bined in the soap than can be without it. It also makes a firmer and better soap, possessing superior washing qualities, and is not liable to shrink, besides materially cheapening the article.

To make a soap with rosin I proceed in the same manner, using about twenty parts of rosin and forty-four parts of grease or oil, which I melt together, (instead of the sixty-four parts of grease, as before stated,) the other proportions and process substantially the same.

The proportions of ingredients herein described are by no means absolute, but may be varied.

This soap will contain an absorptive quality not previously known in soap, for if oil is poured on a piece of cloth and is covered with the white clay in its natural state the oil is completely absorbed and drawn out of the cloth. This absorbing quality makes a great addition to the value of the article, making it an erasive as well as a washing soap.

To produce an excellent quality of soft soap it is only necessary to reduce the hard soap with water.

The addition of a small quantity of aqua ammonia and alcohol has a beneficial effect.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination and saponification of caustic-soda lye and grease, fat, or oil by the process and in the proportions stated.
2. The combination and saponification of caustic-soda lye, grease, fat, or oil, and rosin by the process and in the proportions stated.
3. The combination of the white clay, as herein described, with a saponified grease, fat, or oil, as above set forth.
4. The mode of saponifying the white clay with alkali before adding it to the saponified grease, fat, or oil, and rosin, as set forth in the specification.
5. The combination of the saponified clay and the saponified grease, fat, or oil and rosin in their saponified condition, as set forth in the specification.

J. B. RAND.

Witnesses:

CHARLES ALEXANDER,
JOHN P. JACOBS.