

UNITED STATES PATENT OFFICE

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IMPROVEMENT IN THE MANUFACTURE OF SOAP.

Specification forming part of Letters Patent No. 59,724, dated November 13, 1866.

To all whom it may concern:

Be it known that I, WILLIAM B. MILNE, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Manufacture of Soap; and I do hereby declare that the following is a full, clear, and exact description of the same and the method of using my invention.

The nature and object of my invention consists in making a hard soap by combining a soap previously made by saponifying the fats or oils with lye or any potash alkali which makes a soft soap with a soap previously made by saponifying the fats or oils with caustic soda or other alkali having a sodium base, which will make a hard or brittle soap, as may be desired; and also in increasing the bulk and weight by the introduction of prepared potatoes, starch, or other farinaceous substances which possess of themselves detergent qualities; and also in the manner of preparing such farinaceous substances for their proper admixture and combination without an alkaline treatment separate and distinct from the fats or oils, as hereinafter more fully described; and in producing a new article of soap.

To enable others skilled in the art to make my improvement in the manufacture of soaps, I will proceed to describe the same fully.

In manufacturing soaps by my process I first make a preparation or soap separately of soda-soap, so made as to be as near neutral as possible, and make it by any of the ordinary methods known in the art. I then make a separate soap or preparation of potash-soap by the chemical action of caustic potash lyes of great density, prepared by the action of caustic lime upon common American potashes (or pearl-ashes for purer soaps) upon fixed oils or fats, the proportions being regulated by calculation of the chemical equivalent of the alkali and the fatty matters, so as to produce as nearly as possible a neutral potash-soap, which, when perfectly formed, is to be reduced by evaporation to the consistency of rendered lard. The soda-soap should be separated from the waste lyes by chloride of sodium, (common salt,) so as to be of the consistency known to soap-boilers as that of "curd soap." When both soaps have been perfectly formed separately, they are al-

lowed to cool and remain until the waste lyes are entirely separated from them and drawn off. They are then each separately heated to a temperature just below their boiling-point, when the heating-agent is withdrawn. The two soaps are then put together and thoroughly incorporated by stirring until the mixture is sufficiently cool to be drawn off into the frames. The proportion of potash-soap to be added to or used with the soda-soap will in a measure depend upon climate. If the soap is to be used or kept in damp climate or moist atmosphere, use about ten per cent., mixed with its own weight of soft water. In dry climates, from fifteen to twenty per cent., with about half its weight of soft water, can be used with an improvement in the detergent or cleansing power of the combined soap.

I am aware that by an old method of soap-making fats were saponified by the use of potash-lyes, and the soft soap hardened by the introduction of the muriate of soda, weak kelp-lyes, or chloride of sodium in sufficient quantities to furnish the required amount of soda to make hard soap, but in none of these methods was there any fats or oils first saponified by any of the alkalies having a base of sodium or a mixture of two kinds of soap, nor was it possible to so regulate the process that accurate proportions could be obtained or the quality of the soap be determined with any certainty. The old method has, therefore, long since been abandoned; but as soaps were thereby produced which contained, when finished, both potash and soda, I do not claim as new the production of a soap having two alkaline bases in the finished article, my invention up to this point being confined to the process of manufacture which produces an improved soap in this, that the mixture of soda and potash soaps has more rapid detergent power than a soda-soap without the admixture of a potash-soap, thereby saving labor; also, when properly made by the described process, both soaps having the minimum of water in their composition, the soap produced is one of the best bases for the introduction of other detergent agents, such as silicates of soda or potash, or farinaceous articles, such as starch, potatoes, &c.

When farinaceous articles are introduced,

such as starch or farina in a prepared state, they are first mixed or placed with the fats or oils and treated as described for prepared potatoes when ground. When potatoes are used, I first grind or mash them finely, after a thorough washing, in their raw state. I then take the powdered farinaceous material and place it, with the fats or oils to be used, in the manufacture of the potash-soap. They can be treated with the soda-soap; but I prefer the potash. For each and every pound of true farina or starch present in the article used I add from four to eight pounds of fats or oils, and then treat them together with the potash-lyes, saponifying the potatoes, starch, &c., and the fats or oils together, and in order to make the mixture perfect it will be necessary to stir them frequently while boiling. When the potash-soap is thus prepared, from twenty to forty per cent. (according to the desired quality) can be added to the curd soda-soap in the same manner as directed for pure potash-soap.

This mixture of farinaceous articles can scarcely be considered an adulteration, and improves it for some purposes, as they possess of themselves detergent qualities, while for others it somewhat diminishes its value. It, however, permits the presence of a larger proportion of free alkali, which gives a rapid action to the soap without injury to the cuticle of the skin or texture of the fabric.

The potash-soap, when thus prepared with farinaceous substances, can be kept for a long time without the addition or use of any anti-septic or preservative substance, and one batch of this soap can be prepared and kept for a number of batches of soda-soap.

I am aware that potatoes and other articles

having starch or farina contained in them have been used in the manufacture of soap, but in no case have they been used in the manufacture of a soap made with two separate soaps previously made with different alkalies and then brought together. I do not claim the employment of such articles in the manufacture of soaps; but I find from experiments made in the manufacture of soaps by the treatment herein described, and in experiments made in using the invention purchased by me of Frank Kunkle, that the treatment in the uncooked state with the fats or oils produces a superior article of soap; and the soap made by this specification—the well-known parts of the process, of course, to be used in addition—will wash and produce suds nearly as well in hard or lime water as in soft.

Having thus fully described my process so far as the same is new, I will set forth what I claim as new.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The mode of introducing the farinaceous materials by dissolving or saponifying them with the fats or oils without a separate alkaline treatment, substantially as specified.

2. As a new article of manufacture, a soap made by dissolving or saponifying farinaceous substances and fats or oils with an alkali having a potassium base and mixed with a soap having its fats or oils saponified with an alkali having a sodium base, substantially as herein set forth and specified.

W. B. MILNE.

Witnesses:

E. A. WEST,
D. J. LYON.