United States Patent Office.

BENJAMIN T. BABBITT, OF NEW YORK, N. Y.

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IMPROVED PROCESS OF OBTAINING GLYCERINE FROM SOAP-MAKERS' SPENT LYES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of the city, county, and State of New York, have invented a new Process of Obtaining Glycerine from Soap-makers' Spent-Lyes; and I do hereby declare that the following is a full, clear, and exact description of the same.

In the manufacture of soap it has heretofore been customary, after the boiling of the tallow or fat with the alkaline solution, to effect the separation from the soap of the spent lye containing the glycerine, which has been extracted from the tallow or fat, by means of a solution of common salt.

Some attempts have been made to extract the glycerine from this solution, but no method that has been heretofore tried has been made commercially profitable, and the solution has been commonly thrown away to waste.

In my invention, instead of using common salt to effect the separation of the soap from the spent lye, I use caustic alkali, by which the glycerine is taken up, and I afterward boil the resulting liquor with fresh tallow or fat, by which the alkali is absorbed, leaving a liquor, consisting of glycerine and water, and from which I obtain the glycerine by evaporating the water.

The process is conducted in the following manner:

After the soap has been formed in the usual way, by boiling the tallow or fat with an alkaline solution, I pump into, or otherwise introduce among it in the boiler, which may be an ordinary kettle, a sufficient quantity of solution of caustic soda, of a density of about 35° of Baumé's hydrometer, to take up all the water and glycerine.

On the contents of the boiler being allowed to cool, the liquor, composed of water, caustic soda, and glycerine, falls to the bottom, leaving the soap floating upon its surface.

The quantity of the caustic-soda solution introduced to the soap is immaterial, provided it be sufficient, as an excessive quantity can do no injury. Instead of the caustic alkali being introduced in solution, it may be introduced in powder, with the same effect.

The liquor left in the boiler may be used over and over again several times in the same manner, above described, as the caustic-alkaline solution in separating the water and glycerine from other charges of soap in the same or other boilers, and, for this purpose, may be pumped directly from the boiler in which it has been used into another boiler, or be drawn off into a suitable receptacle, and pumped therefrom back into the same kettle, after a new batch of soap has been produced therein; but, previous to every repetition of its use, it should be bleached by throwing into it a quantity of lime, reduced by water to a pasty state, and afterward decanting it from the lime.

The use of this liquor in this way may be repeated until, by testing a small quantity, by boiling with a suitable quantity of fresh tallow, to absorb all of its alkali, the resulting solution of glycering and water has a specific gravity of about 30° of Baumé's hydrometer, when the said liquor may be reduced with water to a suitable alkaline strength, to enable its alkali to be readily absorbed by tallow or fat, and be then boiled with tallow or fat, till what is left of it shows no alkali by test, and, therefore, contains nothing but glycerine and water.

On evaporating the water from this by heat the glycerine remains.

In the last-mentioned operation of boiling with tallow or fat, a sufficient quantity of the tallow or fat must be used, and additions may be made until there is sufficient to absorb all the alkali, and it is obvious that any excess of tallow or fat will do no injury. The tallow or fat may be afterward converted into soap in the usual way.

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

The extraction of glycerine from soap-makers' spent-lye, by treatment with caustic alkali, and subsequent boiling with tallow or fat, substantially as herein described.

B. T. BABBITT.

Witnesses:
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