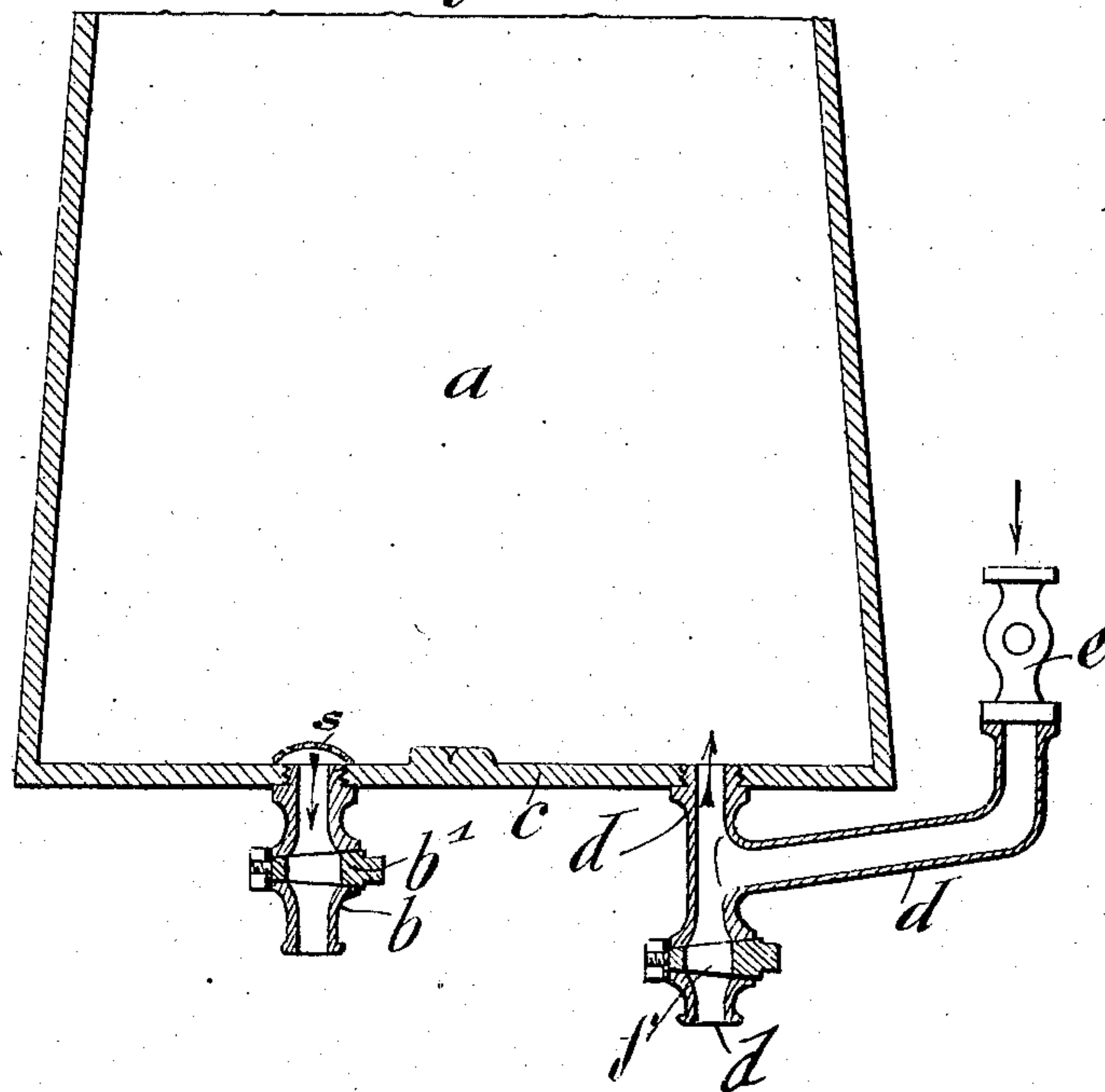


No. 881,630.

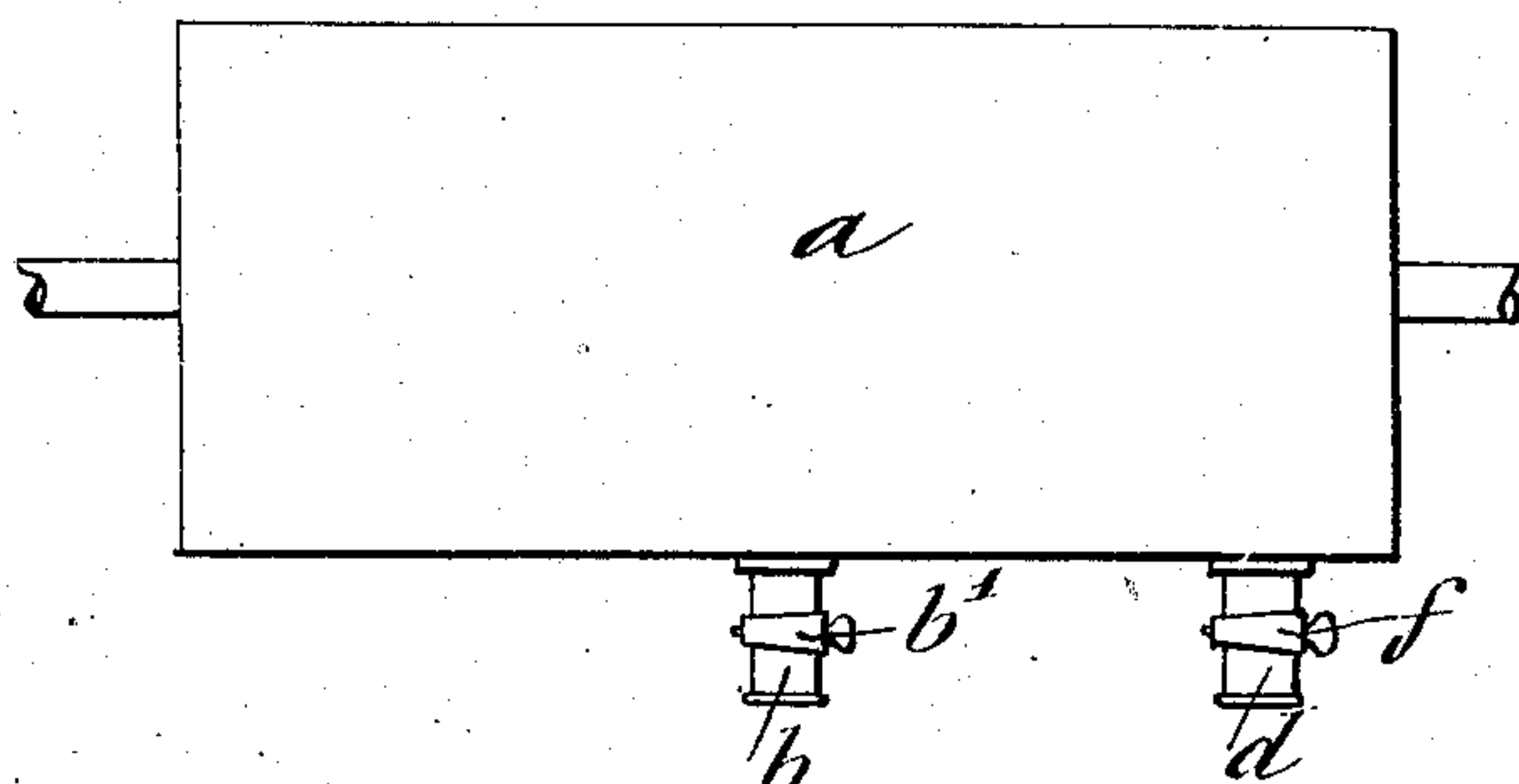
PATENTED MAR. 10, 1908.

V. G. SMITH.  
PROCESS OF WASHING BUTTER.  
APPLICATION FILED SEPT. 5, 1907.

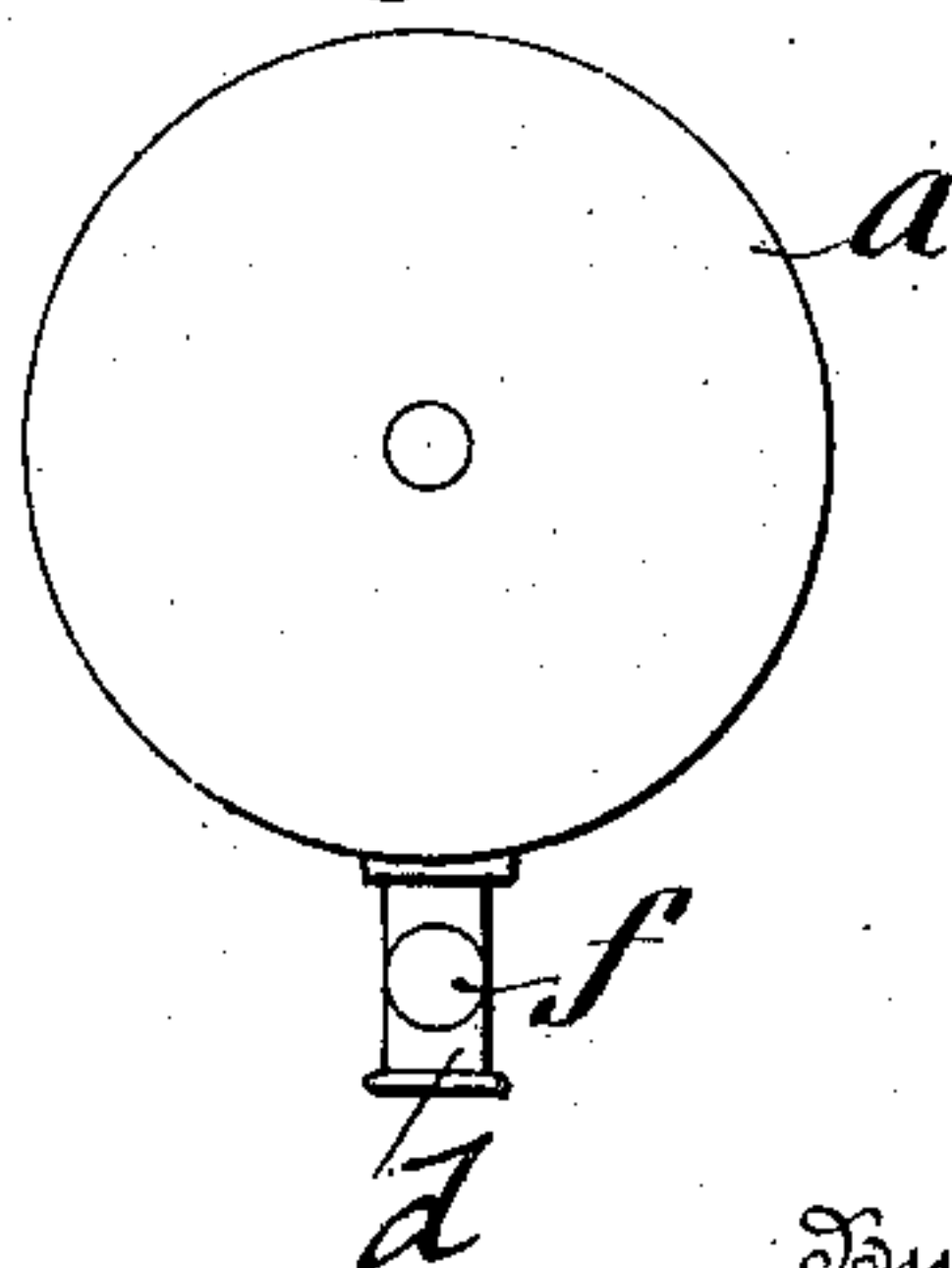
*Fig: 1.*



*Fig: 2.*



*Fig: 3.*



Witnesses:  
Fannir Fitch  
Henry J. Suberher.

Inventor  
Valdemar Gustav Smith  
By his Attorney  
Guelck Goepel

# UNITED STATES PATENT OFFICE.

VALDEMAR GUSTAV SMITH, OF COPENHAGEN, DENMARK.

## PROCESS OF WASHING BUTTER.

No. 881,630.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed September 5, 1907. Serial No. 391,473.

*To all whom it may concern:*

Be it known that I, VALDEMAR GUSTAV SMITH, a citizen of the Kingdom of Denmark, residing in Copenhagen, in said Kingdom of Denmark, have invented certain new and useful Improvements in Processes of Washing Butter, of which the following is a specification.

This invention has the object of washing freshly-churned butter while the same is still in a state of formation, that is to say, while the butter-globules are contained in the milk and still separated from each other.

Butter was heretofore washed either in balled state or while the same is subjected to the balling operation. In the balled state, the mass contains a considerable quantity of buttermilk which cannot be removed any more by washing and which exerts an injurious influence on the taste and preservability of the butter.

The object of this invention is to wash or rinse the individual butter-globules by permitting the water to act on the loose globules after the buttermilk is drawn off and before they are balled together, in such a manner that the water is introduced onto the disconnected butter-globules in an upward direction from below. Such a current of water rising upwardly, lifts the individual butter-globules and distributes them evenly in the cleansing water so that the particles of buttermilk still adhering to the butter-globules are removed therefrom. The water is then drawn off and the washing of the butter-globules continued in the same manner, if necessary several times, until the wash-water runs off in a perfectly clear condition. The butter is then collected and kneaded into ball form.

The process described can be used with all types of horizontal or vertical churns, as well as with churns provided with interior mechanisms, such as dashers, rotary paddles, etc., as well as with churns in which the churning is accomplished by the oscillating or turning of the churn-body itself, or even with churns which contain a kneading device. After the wash-water is conducted into the lower part of the churn and the butter-globules are lifted so that they float freely in the same, the churn-body is set into motion at the same speed which it had during the churning operation. By this motion the floating butter globules are thrown to and fro in the wa-

ter and perfectly cleaned of adhering buttermilk.

The wash-water, which has to be perfectly pure and cold (preferably at a temperature of 7° C.), is conducted through a hose, pipe or the like, which terminates in, on or near the bottom of the churn. This hose, pipe, or the like can be connected permanently with the churn when the same is of the stationary type, but when a churn to which an oscillating or rotary movement is imparted is used, then the pipe for the wash-water has to be arranged at that part of the churn which during the washing operation is at the lowermost part of the churn-body.

In the accompanying drawings, Figure 1 represents a vertical section of a stationary form of churn in which my improved process for the mechanical removal of the buttermilk is employed. Fig. 2 is a side-elevation of a churn with a rotary body, and Fig. 3 is an end-view of the same.

Similar letters of reference indicate corresponding parts.

*a* is an upright stationary churn-body and *b* a pipe which is provided with a stopcock *b*<sup>1</sup> and a strainer *s* at the inside of the churn-bottom *c*, the pipe being inserted in the bottom of the churn for permitting the drawing off of the buttermilk. A second pipe *d* is connected with the bottom of the churn and preferably bent in upward direction and provided with a stopcock *e* and connected with a water-supply pipe through which water is conducted under pressure. The inlet-pipe for the rinsing water is provided at its lower end with a stopcock *f* which, when it is opened, permits the drawing off of the rinsing water.

In Figs. 2 and 3, the pipes *b* and *d* are arranged on that part of the movable churn-body which is lowermost when it is in a position of rest. In this position, the buttermilk is first drawn off, then the water-supply pipe connected with the pipe *d* and the wash-water supplied to the churn, after which the supply-pipe is disconnected and the butter-globules washed by setting the churn into motion. After the washing operation is completed the water is drawn off and the butter removed for being kneaded into ball form.

By reason of the fact that the water is introduced from below and lifts the butter-globules or granules so as to distribute them



evenly in the cleansing water, the washing operation takes place without injurious pressure being exerted on the mass of butter. Such pressure would result from the water  
5 being introduced from above as the compression of the upper layers of the butter-mass takes place under these conditions, so that a thorough washing of all the globules cannot be effected. Thus the elimination of  
10 this pressure is an important feature of the invention, as the granular state of the butter is preserved and the washing rendered very thorough.

Having thus described my invention, I  
15 claim as new and desire to secure by Letters Patent:

The process herein described of washing freshly-churned butter, which consists in

drawing off the buttermilk from the butter-mass, and then introducing cleansing water 20 into the mass from below in such a manner that the butter-globules or granules are lifted and distributed evenly in the cleansing water without being subjected to injurious pressure, whereby the free individual glob- 25 ules or granules are subjected to a thorough washing action which takes place without affecting their granular state.

In testimony that I claim the foregoing as my invention, I have signed my name in 30 presence of two subscribing witnesses.

VALDEMAR GUSTAV SMITH.

Witnesses:

P. HOFMAN BAUG,  
AXEL FERMIN.