S. LESLIE & J. A. LYON

Rotary-Churn.

No. 210,205. Patented Nov. 26, 1878.

Fig. 1.

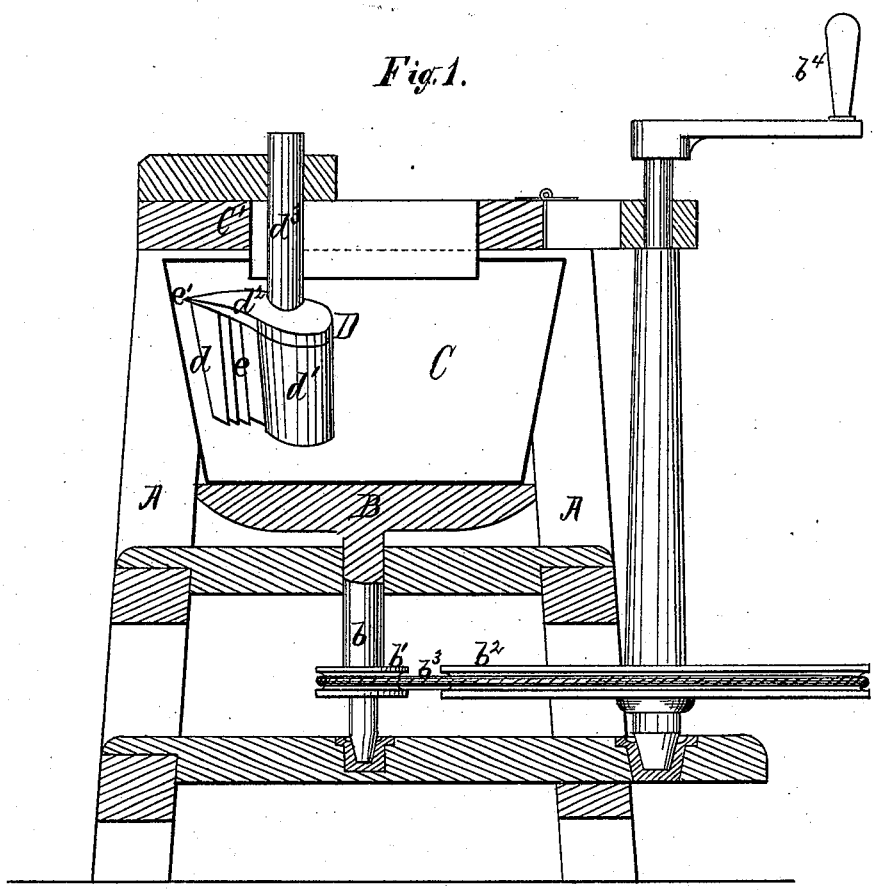


Fig. 2.

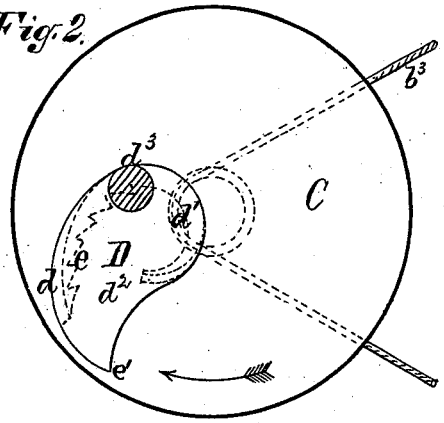
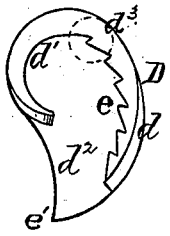


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL LESLIE AND JAMES A. LYON, OF INDEPENDENCE, IOWA.

IMPROVEMENT IN ROTARY CHURNS.

Specification forming part of Letters Patent No. **210,205**, dated November 26, 1878; application filed September 6, 1878.

To all whom it may concern:

Be it known that we, SAMUEL LESLIE and JAMES A. LYON, both of Independence, Buchanan county, State of Iowa, have invented certain Improvements in Rotary Churns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

Our invention relates to a churn in which the vessel containing the cream is seated upon a platform that is mounted on a suitable frame and is capable of being rotated, and in which vessel a stationary breaker is employed; and our invention consists in the peculiar breaker hereinafter described, having a continuous curved wall of the form shown, and corrugated on its interior face, as specified, and having the shield or lid described, and fixed upon a shank, as set forth.

Figure 1 is an elevation, partly in section, of a churn having our improved breaker. Fig. 2 is a top view of the rotating vessel and the breaker; and Fig. 3 is an under face view of the breaker itself, detached from the churn.

A is the frame. B is a platform on a shaft, *b*, and arranged to be rotated by means of the pulleys b^1 b^2, belt b^3, and crank b^4, or in any other suitable manner. Upon the platform is fixed the vessel C, which should be removable, and which is to hold the cream.

C′ is a lid with a central opening, *c*, as shown. D is our improved breaker. This is constructed with the continuous curved wall or side *d*, that is extended into a shorter curve returning upon itself to form the continuous heel d^1, as shown. The inner face of the wall or side *d* of the breaker is corrugated vertically from top to bottom, as shown at *e*, the corrugations being preferably made with one face thereof perpendicular, or nearly perpendicular, to the face of the wall, and the other face beveled off toward the forward edge of the wall, as shown. The lid or shield d^2 is secured upon the upper edge or rim of the curved wall and heel of the breaker, and at its forward end is brought to a point or angle, *e*′, as shown, while its forward edge is beveled or turned upward, as seen in Fig. 1. The breaker is fixed upon a shank, d^3, which is secured firmly in the lid C′, and allows the breaker to depend into the vessel C. The forward edge of the breaker should be arranged so as to approach closely to, without being in actual contact with, the inner wall of the vessel C, and the said forward edge should be beveled or shaped to conform to the said wall. The lid or shield d^2 is inclined downward from the wall of the vessel C toward the center or axis thereof, as shown in Fig. 1.

When our churn is operated the rotation of the vessel C, containing the cream, will cause the cream to be thrown forcibly against the corrugated face of the wall or side *d* of the breaker, when it will meet and be in contact with air drawn into the churn and breaker by the rotation of the vessel, whereby the cream will be thoroughly broken. The cream will then be thrown back upon itself and downward into the vessel by means of the curved heel d^1. This operation will be continuous, the cream being successively thrown upon the corrugated face of the breaker, and then in a continuous stream back upon itself and downward into the vessel, the cream being thus thoroughly broken, and throughout the operation being exposed to a current of air on all sides, which is caused to pass through the churn at all times by the rotary motion of the vessel in one direction and the irregular circular motion of the cream in the opposite direction.

We are aware that a patent has been heretofore granted for a breaker, in combination with other devices, which was constructed in the form of a double comb—that is, with a slitted wall on one side and a slitted end piece at right angles to said wall. We do not intend to claim this form of breaker, but to limit our claim hereunder to the combination, with a vessel on a rotating platform, of the peculiar breaker described, having the curved continuous wall *d*, with vertical corrugations, and the returning curved heel d^1, together with the inclined lid or shield d^2, as we have shown and specified.

What we claim as our invention, therefore, and desire to secure by Letters Patent, is—

In a churn having the rotary platform B, vessel C, and lid C′, the breaker D, composed of the continuous curved wall *d*, corrugated at *e*, the curved heel d^1, and the inclined top or shield d^2, together with the shank d^3, all arranged to operate substantially as and for the purpose specified.

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