L. KITTINGER & L. RUCH.

Improvement in Churns.

No. 128,549. Patented July 2, 1872.

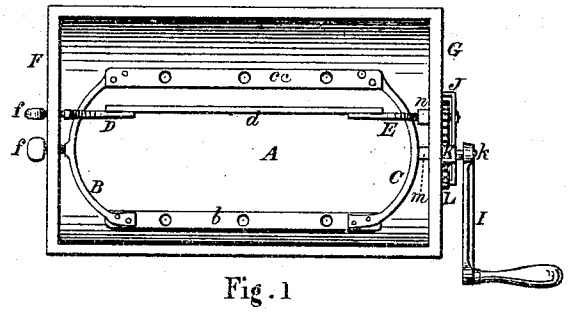

Fig. 1

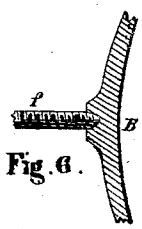

Fig. 6.

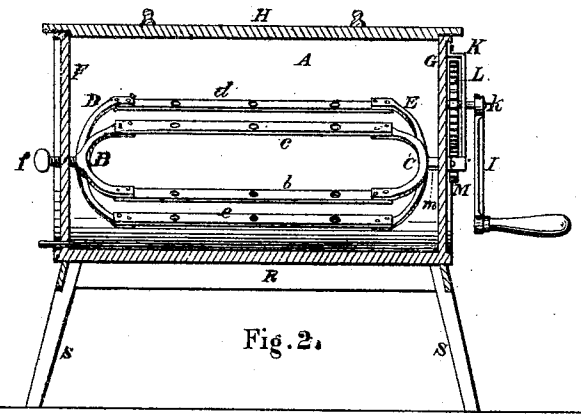

Fig. 2.

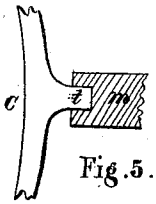

Fig. 5.

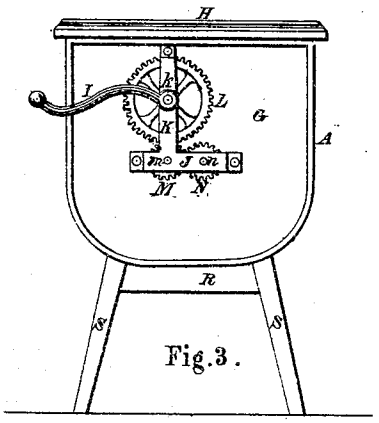

Fig. 3.

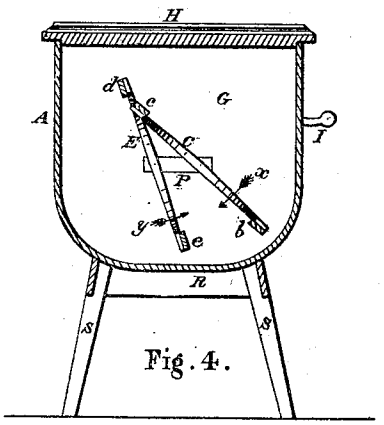

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

LEWIS KITTINGER AND LEWIS RUCH, OF CANAL FULTON, OHIO.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. 128,549, dated July 2, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that we, LEWIS KITTINGER and LEWIS RUCH, of Canal Fulton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Churns; and that the following is a full, clear, and exact specification thereof, which will enable others skilled in the art to make and use the said invention.

Our invention relates to that class of churns which are constructed with two rotary dashers; and it consists in the combination of two revolving frame dashers which have their axes of rotation placed closely together, and which are so arranged and connected that each dasher-frame revolves partially through the other dasher-frame during the simultaneous revolutions of the two dashers, so that the dash-bars pass each other first on one and then on the other side of the churn-box, thus producing the violent agitation and beating required for the rapid production of the butter from the cream, and avoiding the tendency of the dashers to force the cream up the sides or against the cover of the box, as in previous constructions.

In the accompanying drawing, Figure 1 is a plan view, Fig. 2 a longitudinal section, Fig. 3 an end view, and Fig. 4 a cross-section, of a churn embodying our improvements. Figs. 5 and 6 are details of the mode of hanging the dashers.

A F G is the churn-box, which is provided with the cover H, and is supported on a frame, R S S, of suitable construction, the form of the cross-section of the box being such as to allow the two dashers B C and D E to revolve close to the sides and bottom of the box, as shown in Fig. 4. On the end G of the churn-box is secured the frame-plate J K, in which are the outer bearings for the crank-shaft *k* and the dasher-pinion shafts *m n*, the crank-shaft *k* having another bearing in the end G or in a plate thereon, and the pinion-shafts *m n* having another bearing in the plate P (see Fig. 4) on the inner side of the end G. The crank I is secured on the shaft *k*, upon which is the driving-wheel L, which meshes into the pinion M on the dasher-shaft *m*, and the pinion M meshes into a second pinion, N, of the same size on the dasher-shaft *n*, thus causing the dasher-shafts *m n* to revolve in opposite directions with the same velocity by turning the crank I. The dasher B C consists of the U-shaped end pieces B and C, which are connected by the perforated dash-bars *b c;* and it is secured in position by a square pin, *t*, formed on the center of the piece C, which fits in a square hole in the end of the pinion-shaft *m*, as shown in Fig. 5, and by the pointed screw *f*, which is run through a plate on the end F and bears in a cavity in the center of the piece B, as shown in Fig. 6. The dasher D E is of the same size and construction and is secured in position in the same manner as the dasher B C, the square pin on the piece E fitting in a hole in the pinion-shaft *n*, and a second screw, *f*, affording a bearing for the other end of the dasher.

The two pinion-shafts *m* and *n* being placed close together, as shown, it will be seen that when the dashers are revolved by the crank I they will alternately work one into or through the other, as indicated in Figs. 1, 2, and 4; and it will be also seen that the dash-bars *e b*, for example, will pass each other at the sides of the churn-box, first on one side and then on the other, so that the downward motion of the bar *b* will counteract the tendency of the bar *e* to throw the cream up the sides of the box, while the meeting of the dash-bars alternately on the sides of the box tends to produce at each meeting a sudden percussion on the cream between the bars, which aids in breaking the globules and facilitating the process of churning.

In addition to the improved action of the dashers on the cream, due to the construction and arrangement described, it will be seen that a less width of churn-box is required than for ordinary churns with two frame dashers, which makes a saving of expense in construction and of storage-room for the churn, and allows of its use for a smaller quanti y of cream than could be churned in a larger churn-box.

What we claim as our invention is—

The combination of two open-frame dashers arranged parallel or nearly parallel with each other, and revolving each into or through the other, so that the dash-bars thereof pass each other in the cream at the sides and near the bottom of the churn-box, substantially as and for the purpose specified.

As evidence of the foregoing witness our hands this 8th day of April, A. D. 1872.

LEWIS KITTINGER.
LEWIS RUCH.

Witnesses:
A. H. LOWRY,
CHAS. W. BREECE.