A. M. MORTIMER.

ROTARY CHURNS.

No. 182,592. Patented Sept. 26, 1876.

*Fig. 1.*

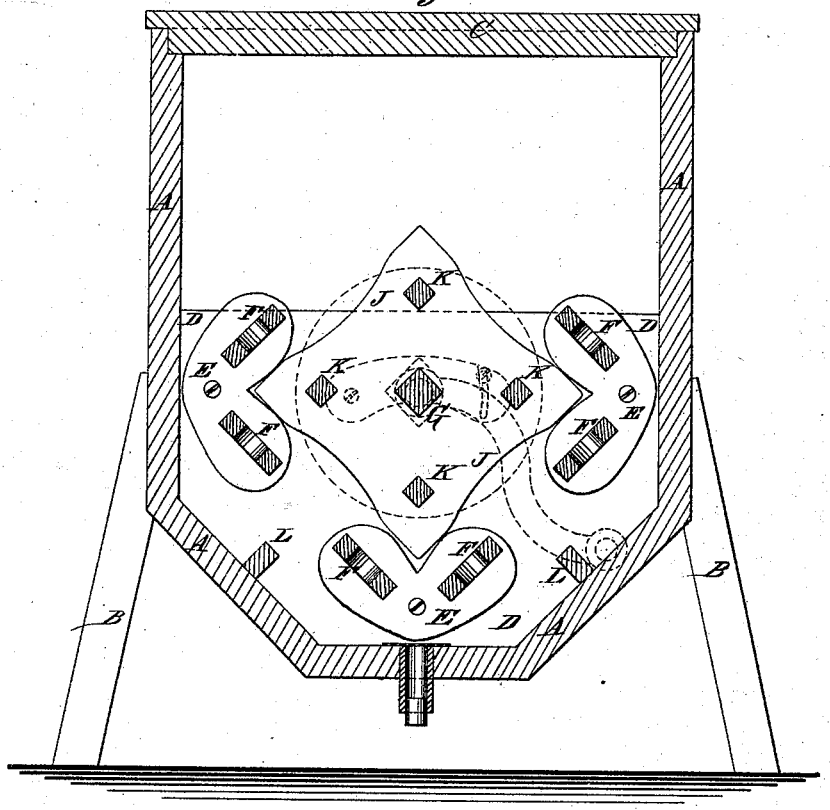
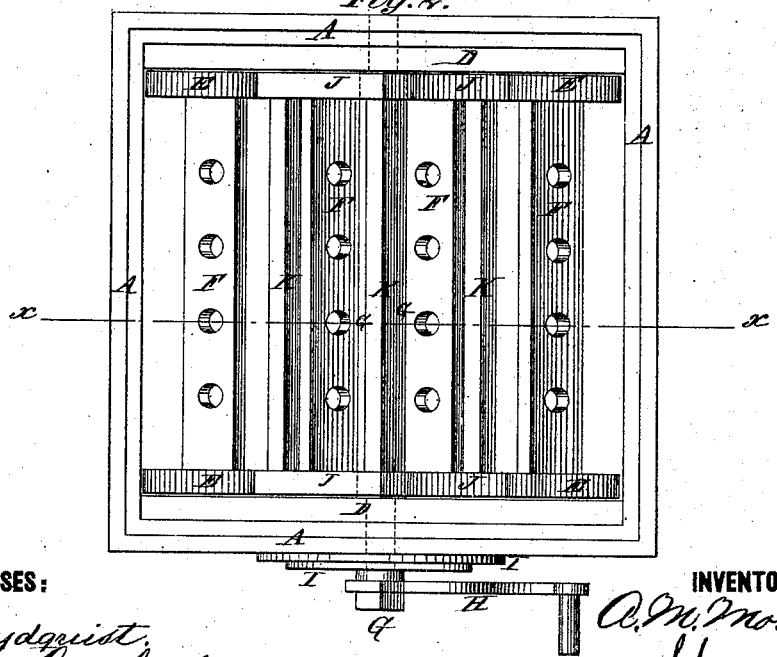


*Fig. 2.*



WITNESSES:

H. C. Rydquist.

John Goetzals

INVENTOR:

A. M. Mortimer

BY Munn & Co

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ANDREW M. MORTIMER, OF SALT LAKE CITY, UTAH TERRITORY.

## IMPROVEMENT IN ROTARY CHURNS.

Specification forming part of Letters Patent No. **182,592**, dated September 26, 1876; application filed August 14, 1876.

*To all whom it may concern:*

Be it known that I, ANDREW M. MORTIMER, of Salt Lake City, in the county of Salt Lake and Territory of Utah, have invented a new and useful Improvement in Churns, of which the following is a specification:

Figure 1 is a vertical cross-section of my improved churn, taken through the line *x x*, Fig. 2. Fig. 2 is a top view of the same, the cover being removed.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved churn, simple in construction, convenient in use, and effective in operation, bringing the butter very quickly.

The invention consists in the combination of the end boards, the pivoted beaters, and the revolving shaft and plates with each other and the box, in the combination of the square bars with the revolving plates and shaft and the pivoted beaters, and in the combination of the stationary bars with the end boards, the beaters, the shaft, the plates, and the square bars, as hereinafter fully described.

A is the box or body of the churn, the sides and ends of which are vertical, and its bottom is formed of three boards, the middle board being horizontal, and the others inclined, being connected at their inner side edges to the edges of the middle board, and at their outer side edges to the edges of the side boards, as shown in Fig. 1.

The body A is supported upon legs B, of such a length as to raise it to a suitable height, and is provided with a closely-fitting cover, C. D are two end boards, which are fitted into the lower part of the churn-body A, and rest against its ends. To the side and lower parts of each of the boards D are pivoted at their middle parts three boards, E, the outer edges of which are convex, and their inner edges are concave.

To the end parts or wings of the boards E are attached two boards or paddles, F, in such positions that the planes of said boards may be at right angles, or nearly at right angles, with each other. The paddles F are perforated with numerous holes to allow the milk to pass through freely.

G is a shaft, one end of which revolves in a round hole in one of the end boards E, and its other end passes through and revolves in a round hole in the other end board E, and in the end of the box A, and is squared off to receive the crank H, by which the churn is operated.

The shaft G, at the outer side of the end of the box A, has a ring-groove formed in it to receive the concaved edge of the curved bar I, which is pivoted at one end to the box A, and in its other end is formed a curved slot to receive a guide-pin attached to said box A. The bar I thus keeps the shaft G in place, and packs the joint around said hole, so that the milk will not escape.

The shaft G, at the inner ends of its journals, is made square to fit into square holes in the centers of the plates J, placed at the inner sides of the end boards D. The plates J are made square in their general form, and have their side edges concaved somewhat to give their corners the form of teeth, which, as the shaft G is revolved, enter the concavities of the plates of the beaters E F, and vibrate said beaters upon their pivots. The cam or tooth plates J are connected by square bars K. The end boards D are also connected about midway between the bottom and side beaters, and about the centers of the inclined boards of the bottom of the box A by bars L.

By this construction as the shaft G and plates J revolve, the beaters E F are vibrated to throw the milk into agitation, and the currents thus formed are broken up by the revolving bars K and the stationary bars L throwing the milk into violent agitation, and bringing the butter in a very short time. By withdrawing the shaft G the entire operating mechanism can be lifted out of the box A for convenience in cleaning the churn.

The buttermilk is drawn out through a hole in the bottom of the churn, which is closed by a faucet or other stopper, and the inner end of which is covered with wire-gauze to prevent the fine particles of butter from escaping.

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

1. The combination of the end boards D, the pivoted beaters E F, and the revolving

shaft G and plates J with each other and the box A, substantially as herein shown and described.

2. The combination of the square bars K with the revolving plates J and shaft G, and the pivoted beaters E F, substantially as herein shown and described.

3. The combination of the stationary bars L with the end boards D, the beaters E, the shaft G, the plates J, and the square bars K, substantially as herein shown and described.

ANDREW M. MORTIMER.

Witnesses:
T. A. MORTIMER,
MORGAN REED.