G. SPRAGUE.

Rotary Churn-Dash.

No. 199,474. Patented Jan. 22, 1878.

Fig. 1.

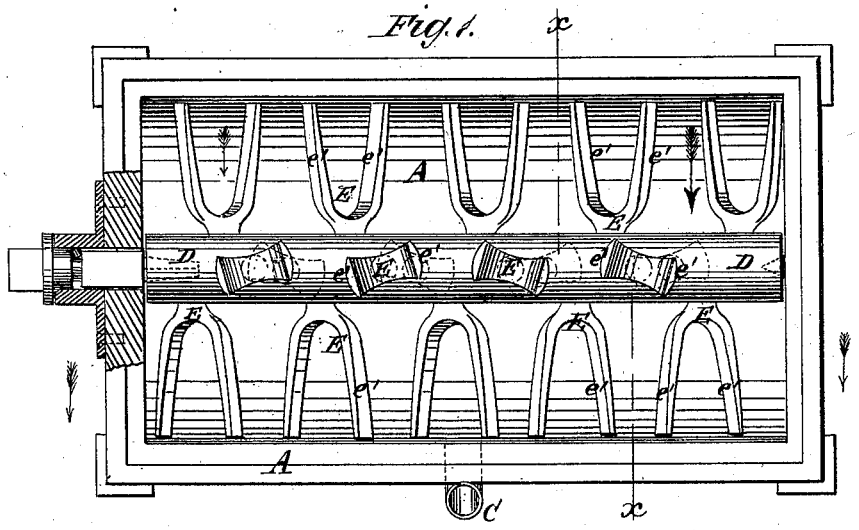
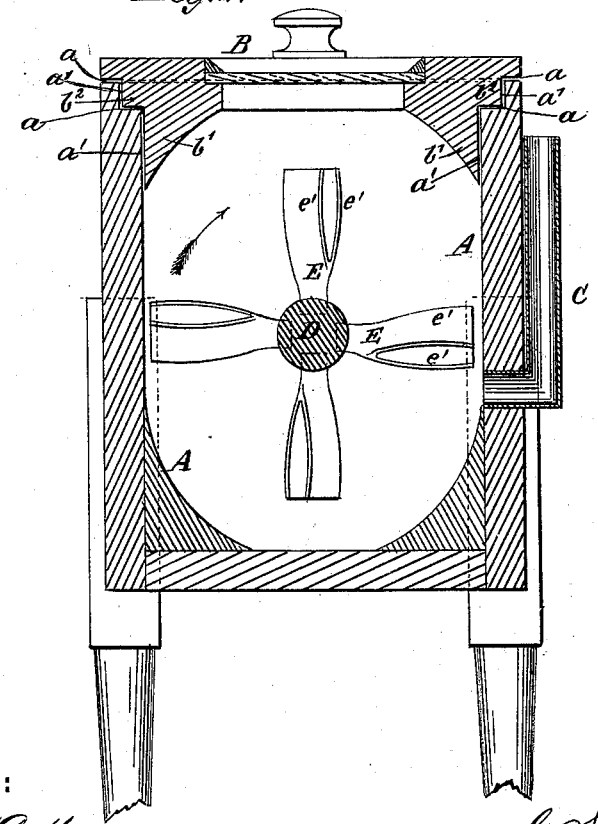


Fig. 2.



WITNESSES:

Francis M. Wilcox

J. R. Scarborough.

INVENTOR:

G. Sprague.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE SPRAGUE, OF ROCKFORD, IOWA.

IMPROVEMENT IN ROTARY CHURN-DASHERS.

Specification forming part of Letters Patent No. **199,474**, dated January 22, 1878; application filed November 6, 1877.

To all whom it may concern:

Be it known that I, GEORGE SPRAGUE, of Rockford, in the county of Floyd and State of Iowa, have invented a new and Improved Churn, of which the following is a specification:

The invention will first be described in connection with the drawing, and then pointed out in the claim.

In the accompanying drawing, Figure 1 represents a top view of this churn without cover; and Fig. 2 is a cross-section of the same, taken on the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the box of the churn. B is the cover. This is provided with downward-projecting flanges b^1, fitting tightly to the sides of the box A, and curved on the inside (as is also the bottom of the box) in conformity with the circular motion of the paddles. It is also provided with a right-angular extra shoulder, b^2, fitting into a similar inner rabbet on the upper edge of the box, thus forming what I call a "double lap-joint," consisting of two horizontal joints, *a a*, and two vertical joints, *a' a'*, for tightly connecting the box and the cover.

C is an upright air-pipe, being bent with its lower end at right angles where it enters the box A, so as to cause the air to be drawn into the cream during churning, instead of being admitted above its surface, as usual. D is the central shaft, which, in combination with the paddles, constitutes the dasher. E are V-shaped or bifurcated paddles, secured to the shaft D at their narrow ends, so that the flat and sufficiently broad blades *e'* of each of the paddles diverge from each other in proportion as they extend from the center line of the shaft. If we suppose a vertical plane drawn across the middle of the churn at right angles to the shaft D, then the paddles E are so placed on the shaft that the flat and broad surface of each of the blades *e'* at either end of the churn will have an inclination toward the said plane. If, now, the shaft D is revolved in this direction, as indicated by the arrows on the drawing, the cream will be forced from the center of the churn to both ends, and (owing to the converging of the paddle-blades *e'*) from the circumference of the cream-box toward the shaft D, whereby a violent agitation is produced, hastening the process of churning.

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

In a churn, the combination, with dasher-shaft, of bifurcated paddles E, having blades *e'*, diverging from each other, and placed at an inclination to the central plane of cross-section of the cream-box, as and for the purpose specified.

GEORGE SPRAGUE.

Witnesses:

MATT. W. MILES,

JOHN EDWIN DRAKE.