

Holmes & Howell,

Churn.

No. 100,292

Patented Mar. 1. 1870.

Fig. 1.

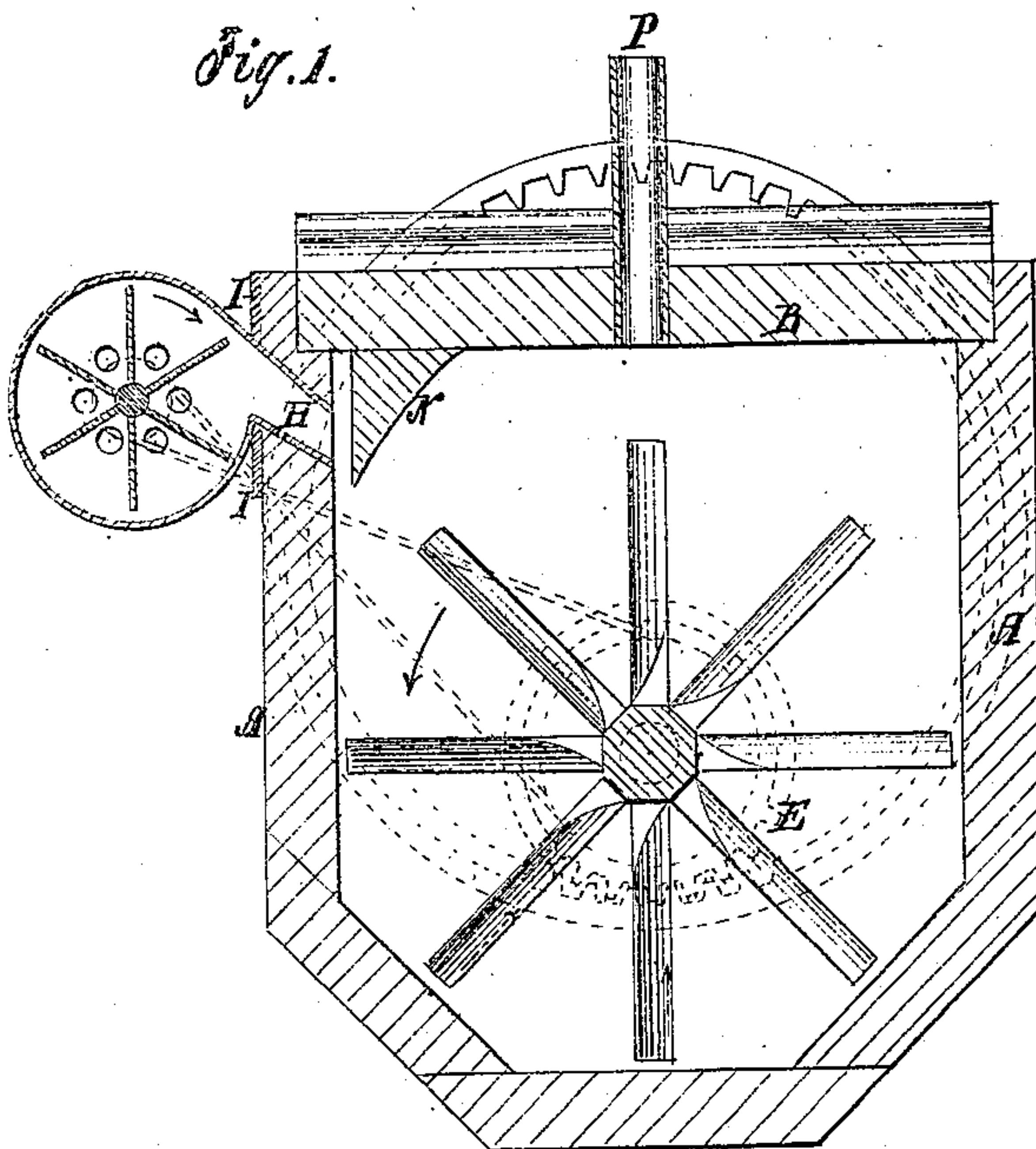
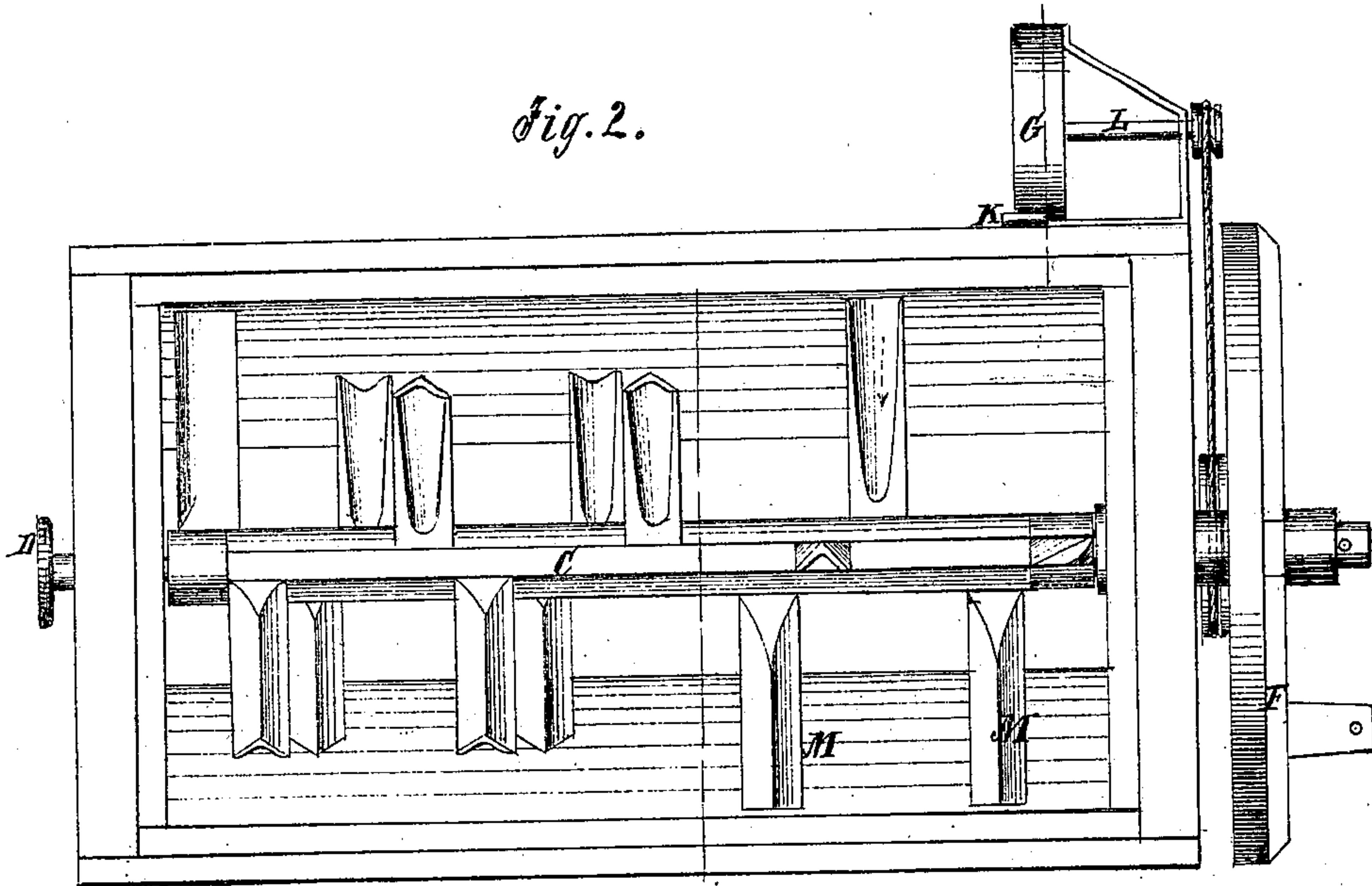


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

CHARLES PATERSON HOLMES, OF GOUVERNEUR, AND ALBERT L. HOWELL,  
OF MOHAWK, NEW YORK.

## IMPROVEMENT IN CHURNS.

*Specification forming part of Letters Patent No. 100,292, dated March 1, 1870.*

*To all whom it may concern :*

Be it known that we, CHARLES PATERSON HOLMES, of Gouverneur, in the county of St. Lawrence and State of New York, and ALBERT L. HOWELL, of Mohawk, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Churns; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to improvements in churns having horizontal rotary dashers and air-injecting apparatus; and it consists in a novel arrangement of the fan-blowing apparatus in relation to the case for injecting air at the side, also in a ready means of attaching and detaching the fan-case, and in an arrangement, with the injection passage for the air, of a guard to prevent the cream from being thrown into the said passage. The invention also consists in a new and improved construction of the beaters of the dasher, calculated to reduce the labor of operating it, and to cause a more perfect combination of the air with the cream; and finally, it consists in the application of the dashers of our improved construction to cases, the sides and bottom walls of which represent the four sides of an octagonal figure, all as hereinafter more fully described.

Figure 1 is a transverse sectional elevation of our improved churn, and Fig. 2 represents a top view of the same, with the cover of the case removed.

Similar letters of reference indicate corresponding parts.

A is a long longitudinal case, with a removable cover, B, and so constructed that the sides and bottom represent four sides of an octagonal figure, as clearly shown in the transverse section, Fig. 1.

C is the shaft of the dasher, mounted on an adjustable center, D, at one end, and projecting through the case at the other, for the reception of the pinion E, which gears with and is driven by the internally-toothed wheel F,

which may be worked by a hand-crank or otherwise.

G is the case of the fan-blower, made of sheet metal or other suitable substance, in circular form, closed at the ends except suitable perforations for the admission of air, and having a spout, H, projecting from the periphery, and a plate, I, projecting above and below the spout and on one side, to bear against the side of the case A, when the fan-blower is attached by inserting the spout in an oblique hole through the wall of the case A, so that a button or other clamp, K, attached to the side of case A, may be engaged to hold it in position.

The said plate extending along the case to the end, serves to support the fan-case against lateral movement, and turning thereat and extending outward beyond the axis of the fan-case, and thence to the outer edge thereof, in the oblique direction shown in Fig. 2, also serves as the support of the end of the guide L of the fan, and as a brace for the outer edge of the fan-case.

N is a guard-block, projecting from the top of the case down in front of the spout H, to permit the cream being thrown and lodging therein.

P is the escape-pipe for the air.

The sides of the beaters or arm M of the dasher which act upon the cream are shaped to represent the two sides of an obtuse, acute, or right angle, and the opposite sides are grooved or channeled from near the shaft to the points, as clearly shown.

The object of this construction is, first, to cause the beaters to enter the cream with less force and without striking a flat surface thereon, which we have found not so beneficial in separating and breaking the cream-sacks as the arrangement which we here show, which causes a direct and powerful concussion of the waves of cream set in motion by the beaters against each other and the sides; second, to cause a vacuum behind the beaters, by which the air forced in may be caused to mix more perfectly and in greater quantity; and third, to facilitate gathering the butter, which is done by reversing the motion of the dasher



bringing the grooved faces of the arms against the butter with the cream.

We arrange these beaters upon the shaft so that not more than two shall strike upon the surface at once.

It has been found by practical demonstration that the arrangement of the bottom of these horizontal churn-cases with plain sides joining each other in obtuse angles, as here shown, facilitates the churning process by the action on the cream when forced into the angles between the sides by the dasher, and we propose to use this improved construction of the said cases in connection with our improved dasher.

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

1. The combination, with the dasher and the churn-case, of the fan-blower, when arranged and applied at the side of the case, substantially in the manner herein described.

2. The combination of the air-injecting spout

H with the guard-block N, substantially as specified.

3. The arms or beaters M, constructed and arranged with the angles on the front and the grooves at the rear sides, for action upon the cream, substantially in the manner specified.

4. The combination of the improved dasher herein shown and described with a churn-case, the sides and bottom of which represent five sides of an octagonal figure, substantially as specified.

The above specification of our invention signed by us this 7th day of February, 1870, and 8th day of February, 1870.

CHARLES PATERSON HOLMES.  
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