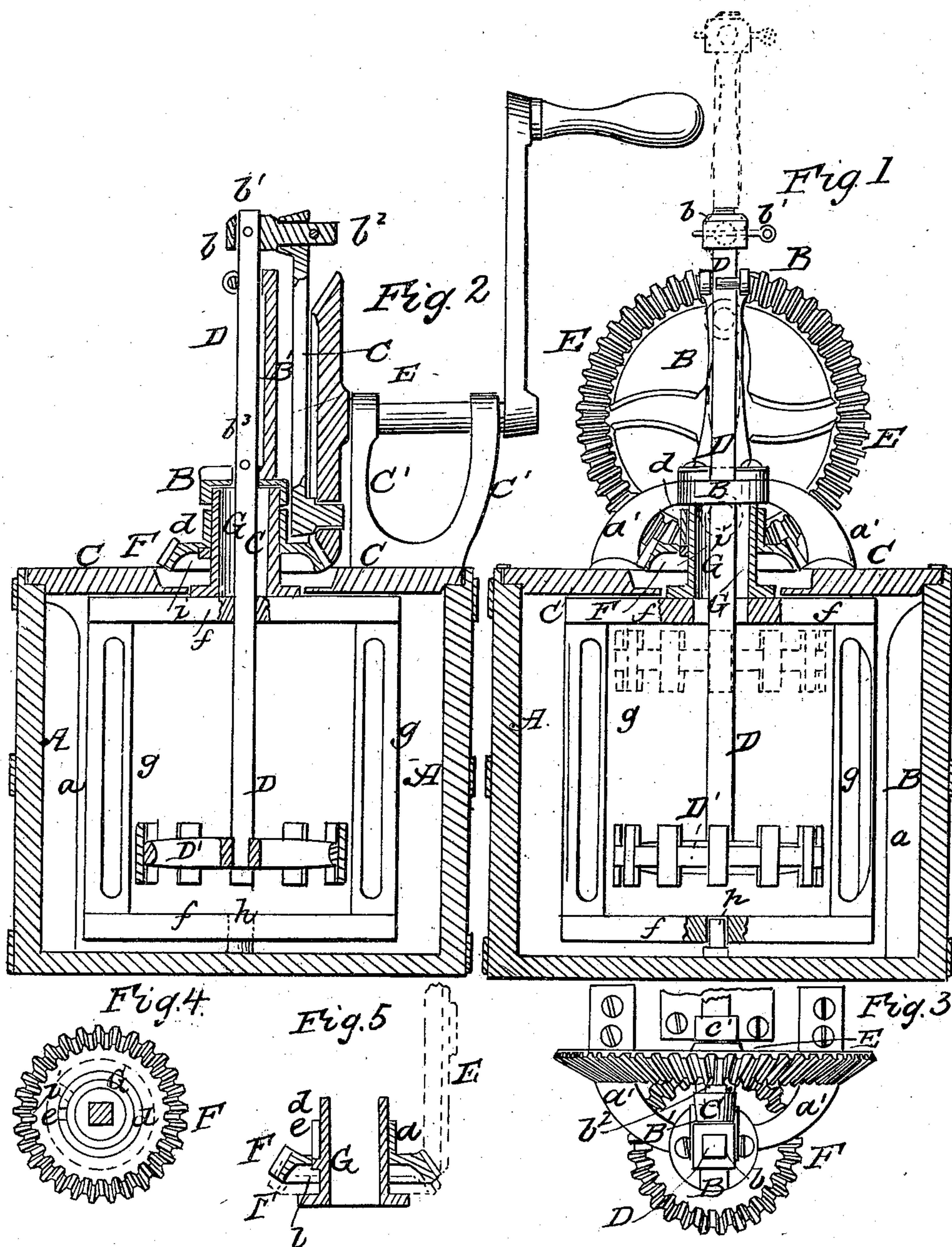


FREY & SANDERS.

Churn.

No. 43,844.

Patented Aug. 16, 1864.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

D. FREY AND DELOS SANDERS, OF HOMER, NEW YORK.

## IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. 43,844, dated August 16, 1864.

*To all whom it may concern:*

Be it known that we, DANIEL FREY and DELOS SANDERS, both of Homer, county of Cortland, and State of New York, have invented a new and Improved Churn; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a diametrical section through the churn box, tubular collar, and pinion spur-wheel, the parts being adjusted for giving motion both to the dasher and the beater. Fig. 2 is a vertical section through the churn, taken at right angles to the section of Fig. 1. Fig. 3 is a top view of the driving-gear. Fig. 4 is a top view of the pinion spur-wheel and collar surrounding the staff of the dasher. Fig. 5 is a vertical section through Fig. 4, showing the pinion-wheel in two positions.

Similar letters of reference indicate corresponding parts in the several figures.

By our invention and improvement in churns we are enabled to employ revolving beaters in conjunction with a centrally-reciprocating dasher, and to give motion to both of these devices at the same time, or, if desirable, to either one separately, by a simple manipulation and without removing any of the parts from the machine, as will be hereinafter described.

To enable others skilled in the art to make and use our invention, we will describe its construction and operation.

The cylindrical churn-box A may be constructed in any suitable manner and of any convenient size, and the top or cover of this box may be made of two semicircular parts and secured in place by means of buttons, hooks, or equivalent devices. On the inside of the box A, and secured thereto in upright positions, are a number of ribs, *a a*, the exposed surfaces of which may be made concave or in any form whereby the cream, dashing against them, will be thrown off toward the middle of the box A.

B represents a bracket having a square hole through it, and supported, by means of arms *a' a'*, over a central opening through the churn-cover C. On top of this bracket B, and projecting up perpendicularly therefrom, we rigidly secure a forked standard, B', which, together with the said bracket, form a central guide for the staff D of the dasher D', and,

while they allow the staff to move up and down freely, they keep this staff in its upright position coincident with the center of the churn-box.

The dasher B', which is secured on the lowermost end of the staff B, consists of a perforated disk having short pieces of wood secured at regular intervals around its periphery, as clearly shown in Figs. 1 and 2.

At or near the upper end of the dasher-staff D a box, *b*, is secured by means of a removable pin, *b'*, which box has a pin, *b<sup>2</sup>*, projecting horizontally from it, which receives one end of a pitman, *c*, the opposite end of which is pivoted eccentrically to the large driving spur-wheel E. The shaft of the wheel E is supported in a horizontal position by the standards *c' c'*, which are secured to one-half of the churn-cover C, and on the outer end of said shaft a hand-crank is keyed, by turning which a vertical reciprocating movement will be communicated to the staff D and the dasher D' in the churn-box. The driving spur-wheel E engages with a horizontal pinion, *f*, which is formed with a tubular hub or collar, *d*, projecting up from its face and having a vertical slit, *e*, through it, terminating inside of the wheel's center in a slot or groove. The concentric tubular opening through the bevel spur-wheel F receives a tube or thimble, G, the tube of which is somewhat longer than the hub or collar *d*, which surrounds it for the purpose of allowing the wheel F to be adjusted thereon when it is desired to engage (or disengage) this wheel with the driving-wheel E, as will be hereinafter explained. The lower end of the thimble G has a flange surrounding it, through which the screws pass that secure the horizontal arm *f* of the beater to said thimble, and the upper end of said thimble is held in place, though allowed to rotate in the bracket-box B, as shown clearly in Fig. 2. The two beater-arms *f* and *f'* are connected together by means of open or slotted slats *g g*, which revolve around the dasher D', and this beater is supported and kept in place at its lower end by means of a central pin, *h*, the axis of which coincides with that of the wheel F, and the square staff which we have above described. The wheel F, when it is in gear with the wheel E, is kept in place and supported by a pin, *i*, that projects from the thimble G and enters a notch formed in the



bottom of this wheel F, as shown in Figs. 1, 2, and 4; but when it is desired to stop the motion of the dasher the wheel F is raised sufficiently far to disengage it from pin *i*, and then turned until this pin will enter the slot *e*, when the wheel F will drop down, as indicated in red lines, Fig. 5, out of the way of the driving-wheel, and the beaters will remain stationary while the dasher is moved.

To reverse the order and move the beaters while the dasher is stationary, it is only necessary to raise the dasher to its highest point, remove the pin *b'* from box *b* and insert this pin through the hole *b<sup>3</sup>* in the staff D, so that said pin will rest on top of the forked standard B'. The box *b* will now play up and down without moving the dasher. The beaters are set in motion by engaging the wheel F with E, and also with the thimble G, that is secured to the heater-arm *f*, as represented in Figs. 1 and 2.

The operation of the beaters and dasher is as follows: As the dasher descends the cream is forced upward and outward. At the same time the beaters, which are revolving around the dasher at the commencement of the operation of churning, pass rapidly through the outwardly-flowing cream, and, with the assistance of the beveled or concave slats or ribs *a a*, throw the cream back again toward the center of the churn-box, to be similarly acted upon as the dasher rises.

The driving mechanism is or may be applied to one half of the churn-cover, so that the

other half may be readily removed for inspecting the interior of the churn during the operation thereof.

We do not desire to confine our invention to the use of any particular form of dasher or beater, as the shape of these parts may be very materially varied, still the slatted dasher and slotted beater will be found very efficient in producing the butter from cream.

We do not claim, broadly, a churn having a dasher and a beater, one of which has a reciprocating movement and the other a rotatory motion, dependent upon each other, for this is not new.

What we claim as new is—

1. The use of a shifting pinion, F, or its equivalent, in combination with devices applied to the dasher and beaters for driving them, substantially as described.

2. Communicating a reciprocating motion to the dasher through the medium of a driving-wheel, E, shifting-pinion F, pin *i*, and thimble G, substantially as described.

3. The pivot bearing-box *b* and removable pin *b'*, applied to the staff of the dasher, substantially as and for the purposes described.

Witness our hands and seals, in the matter of our application for a patent on an improved churn, this 9th day of March, 1864.

D. FREY.

DELOS SANDERS.

[L. S.]

[L. S.]

Witnesses:

HIRAM CRANDALL,

A. N. ROUNSENELL.