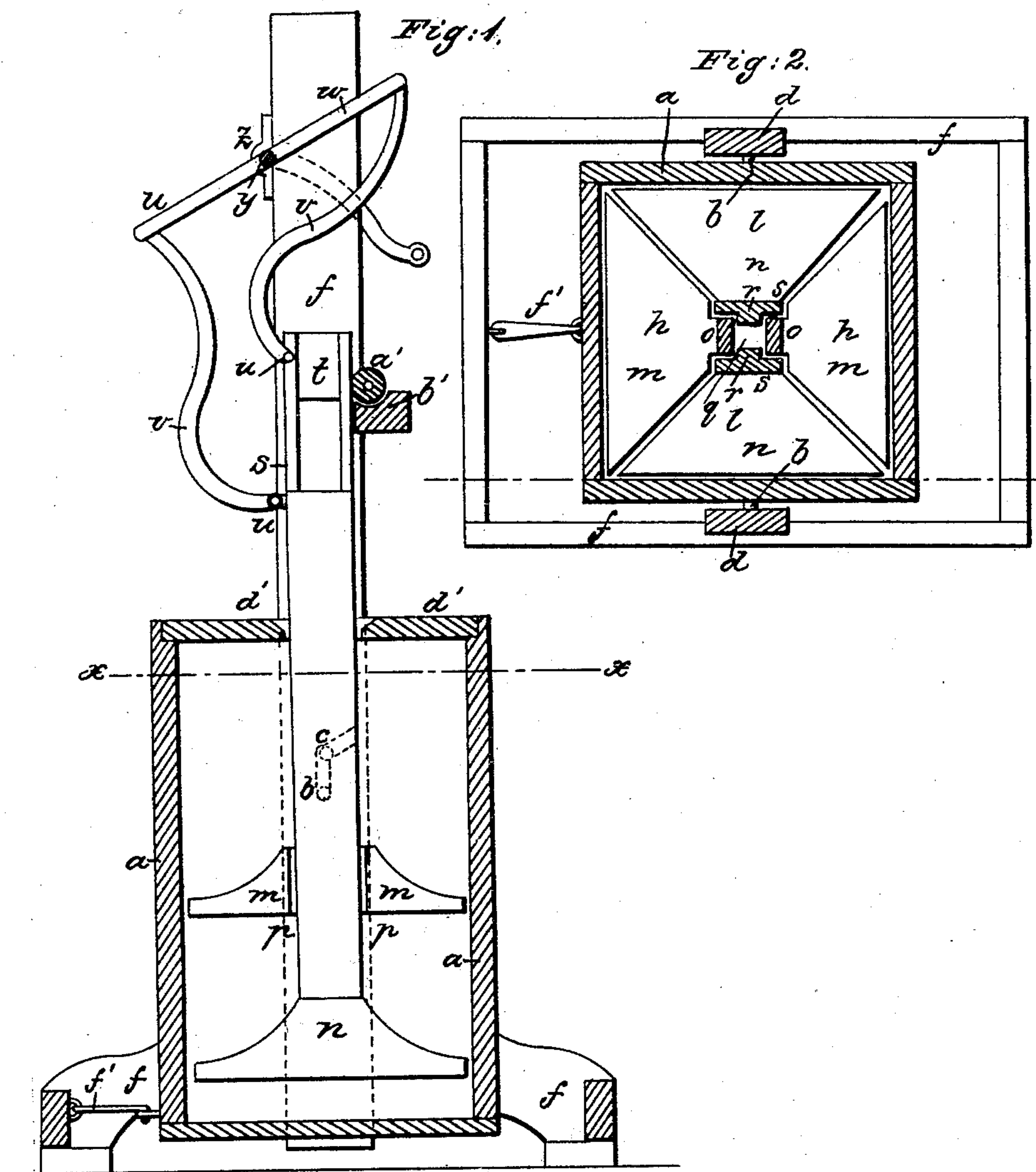


J. RANDALL.

Churn.

No. 49,550.

Patented Aug. 22, 1865.



Witnesses:

Wm. Brewin  
 Thos. Tusch

Inventor:

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# UNITED STATES PATENT OFFICE.

JOSHUA RANDALL, OF GRAND RAPIDS, MICHIGAN.

## IMPROVEMENT IN CHURN AND BUTTER-WORKER COMBINED.

Specification forming part of Letters Patent No. 49,550, dated August 22, 1865.

*To all whom it may concern:*

Be it known that I, JOSHUA RANDALL, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Improvement in Churns and Butter-Workers; and I 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 drawings, forming part of this specification.

The present invention relates more particularly to churns in which two vertical reciprocating dashers are used, and consists in a peculiar arrangement of a friction-roller therewith, over and against which they move, and also in a new form of dashers, as will hereinafter be fully described.

My improvements are illustrated in accompanying plate of drawings, of which Figure 1 is a vertical section through the churn-box, showing the dashers and their mode of operation in side elevation, and Fig. 2 a horizontal section in plane of line *x x*, Fig. 1.

*a a* in the drawings represent the churn-box, made of a square shape and suspended by trunnion-pins *b b* in slots *c c* upon the inside of two parallel standards, *d d*, secured at their lower ends to a supporting-frame, *f*, and with a cross-bar at their upper ends; *h* and *l*, the two dashers, each made in two separate parts, *m m* and *n n*, and of the form of trapezoids, with bottom surfaces flat, and their upper surfaces inclined or rounding toward the sides of the box and fitting loosely within the same, the two parts *m m* of one of which are attached by their smaller sides to the lower ends of two parallel upright rods, *o o*, secured together at their ends *p p* by a short cross-connecting piece, *q*. Between these rods *o o*, and moving on a projecting vertical guiding-strip, *r*, of each the same, are two other parallel vertical rods, *s s*, to the lower ends of which the two parts *n n* of the dasher *l* are attached, the upper ends being secured together by a cross-piece, *t*.

From the above it is apparent that the vertical rods to which the dashers are attached

are free to play up and down upon each other when actuated, as will be presently described.

On the upper end of the dasher-rods are short pins *u u*, on each of which is hung one end of a bent connecting-rod, *v*, secured at their other ends to the crank portions *w w* of the driving-shaft *y*, turning in bearings *z z* of the standards *d d* of the machine. The cranks *w w* of the shaft *y* are diametrically opposite to each other, so that as the driving-shaft is turned one of the dashers shall be moving in an upward direction as the other is traveling downward within the churn, passing freely by each other, their rods bearing and moving against a friction guiding-roller, *a'*, properly placed therefor within the cross-bar *b'* of the standards *d d*.

The milk or cream to be churned is placed within the churn-box and its cover-pieces *d' d'* over the top of the same, and then, turning the driving-shaft, the dashers are moved, through their cranks, up and down within the box, as described, beating and striking against the cream, and thereby churning it into butter, when the box is swung upon its trunnions by which it is hung between the standards sufficiently to allow the buttermilk to be poured out of the same, first, however, having detached the connecting crank-rods from the dashers and unfastened the hook *f'* used for holding the churn-box steady while churning, when the butter can be removed or still further worked, according as may be desired, as before, having previously reconnected the cranks with the dashers and fastened the hook *f'*.

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

1. The use of the two dashers *h* and *l*, made of the form and operated in the manner described.

2. The use of the friction guiding-roller *a'*, arranged with regard to the dasher-rods, as described.

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Witnesses:

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