4 Sheets—Sheet 1.

B. T. DANIELS.

CHURN.

No. 186,117. Patented Jan. 9, 1877.

Fig. 2.

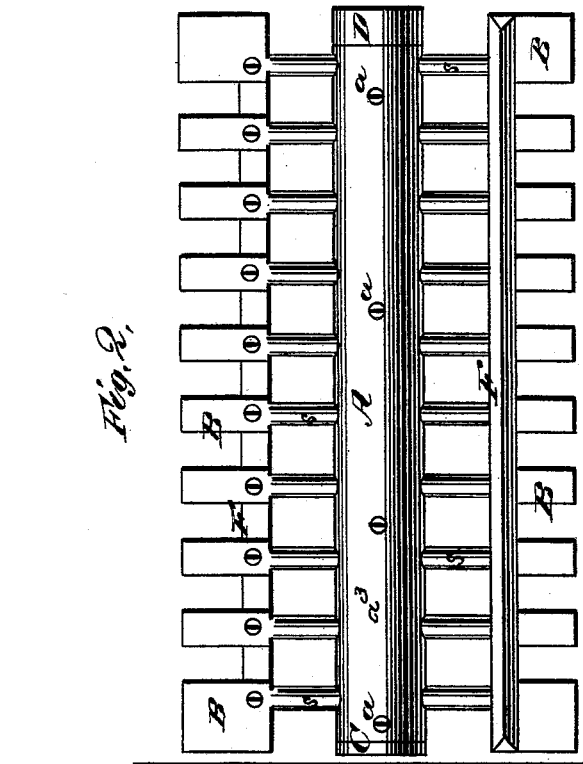
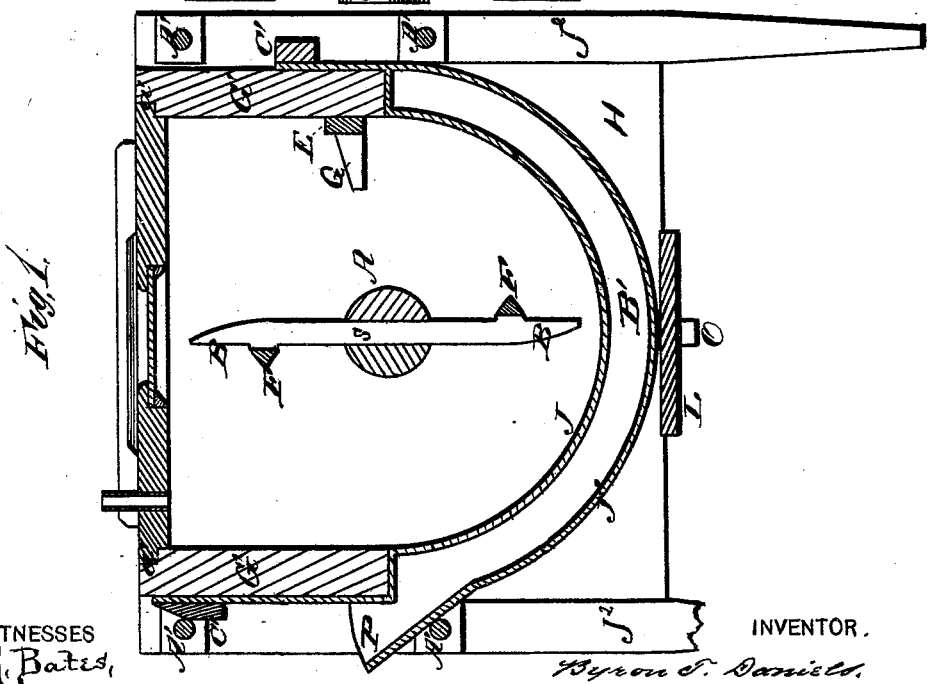


Fig. 1.



WITNESSES

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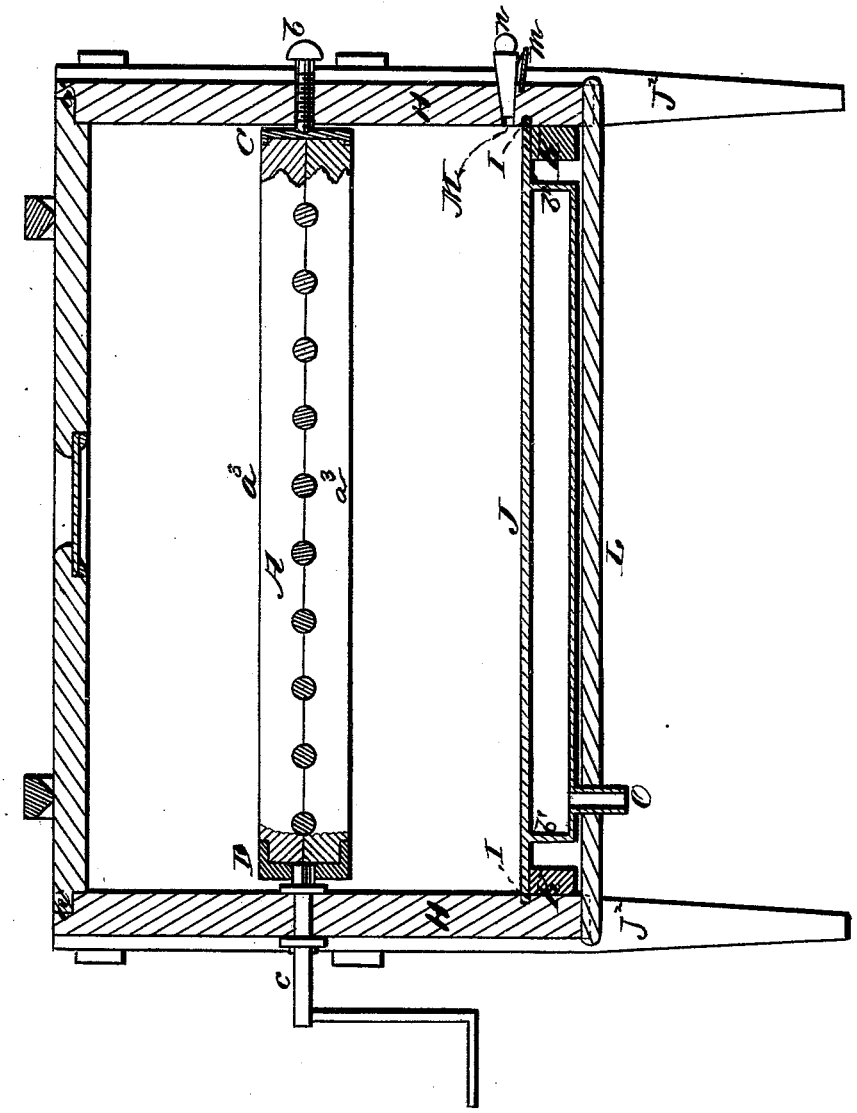

Fig. 2.

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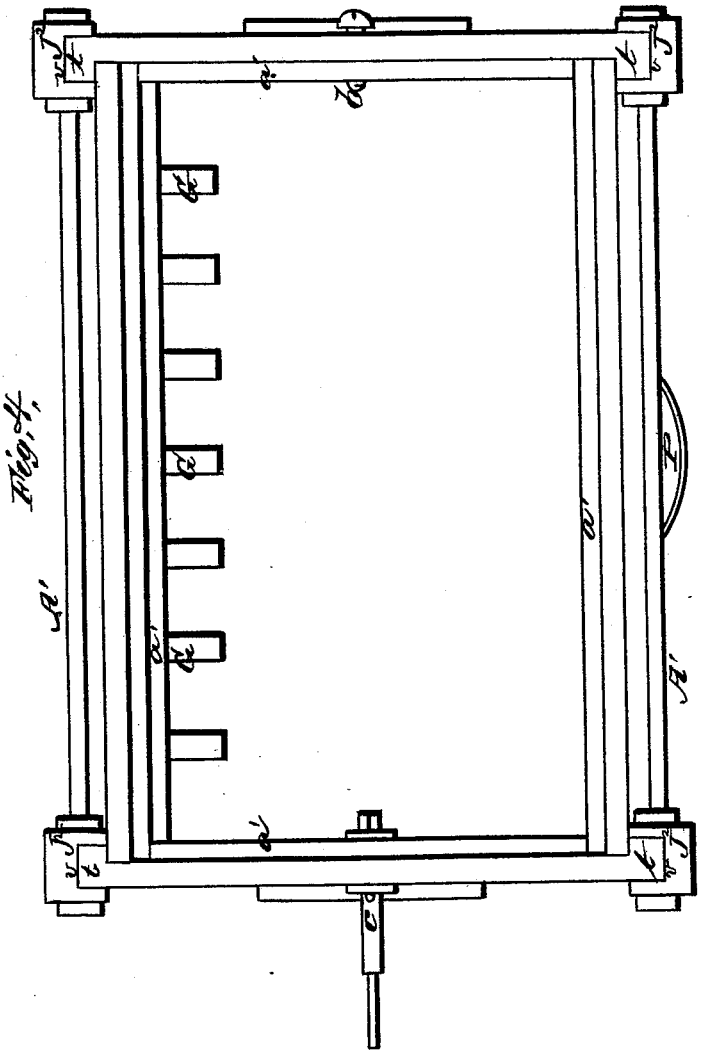

Fig. 4.

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CHURN.

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Fig. 5.

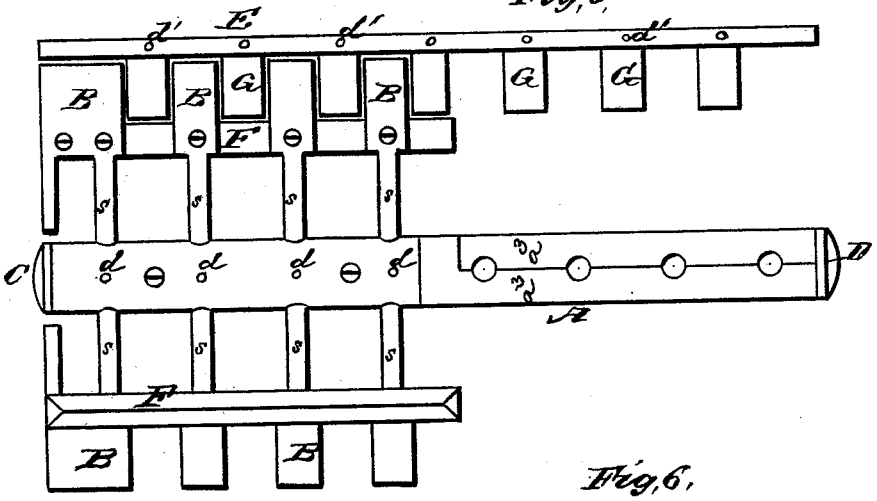
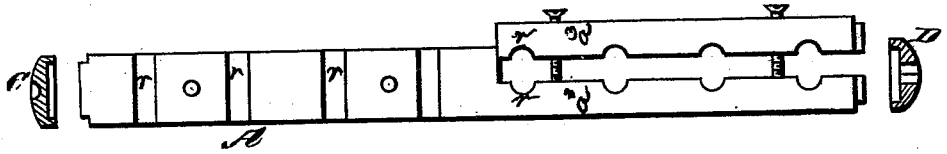


Fig. 6.



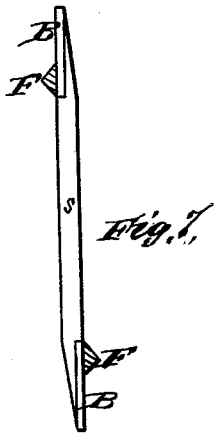


Fig. 7.

WITNESSES.
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ATTORNEYS

UNITED STATES PATENT OFFICE.

BYRON T. DANIELS, OF UTICA, NEW YORK.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **186,117**, dated January 9, 1877; application filed November 18, 1876.

To all whom it may concern:

Be it known that I, BYRON T. DANIELS, of Utica, in the county of Oneida and State of New York, have invented a new and valuable Improvement in Churns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a transverse sectional view of my churn, and Fig. 2 is a detail view. Fig. 3 is a longitudinal vertical sectional view, and Fig. 4 plan view, of the churn without the dash. Figs. 5, 6, and 7 are detail views thereof.

This invention relates to new and useful improvements in rotary churns; and it consists in certain improvements therein, as will be hereinafter more fully set forth.

On the annexed drawings, A represents a cylindrical shaft, which is made in two or more parts, a^3 a^3. In each of these parts are semicircular recesses *r*, which receive the shanks *s* of the paddles B. Said paddles are made of one piece. The two parts a^3 of the shaft A are secured to each other by bolts *a*, and caps C and D. The cap C is recessed so as to receive the point of the thumb-screw *b*, which acts as a bearing for shaft A. The cap D is also provided with a recess, which is adapted to receive the end of the shaft *c*, to which the crank is attached. The opposite paddles B B are made of one piece, and are secured to each other by rods F, and to the shaft by pins *d*.

The paddles B are rounded on one side, while the side which is intended to beat the cream is left flat.

These paddles may be secured to the shaft A so as to have the paddles at right angles with those on the other side.

Attached to the churn-box, by means of bolts, is a longitudinal strip, E, to which are attached breakers G by means of pins *d'*, which pins pass through the shank of the breakers G. The breakers are arranged on strip E so as to mesh into the paddles B.

Dashers and breakers constructed in this manner may be easily removed from the churn for cleansing, the breakers being detached by removing the screws which attach the strip E to the side of the churn. To remove the dasher, the screws *a*, which unite the two parts of the dasher-shaft, are removed, when the dasher can be detached from its shaft to to be cleansed, or for other purposes.

The sides of the churn-box are made of wood, and are provided with grooves a^1 in their upper parts, which are adapted to receive the cover. These sides G' extend down below the breakers E, as shown on Fig. 1 of the annexed drawings. The end pieces H are also provided with grooves *a'*. The end pieces H have vertical grooves in their sides, near their ends, into which the side pieces G' fit. The ends H of the churn-body extend out, and at their ends are provided with tenons, (see Fig. 4,) which fit into vertical grooves *v* in the legs J^2 which support the churn, and are also provided with semicircular recesses I, into which the sheet-metal bottom J fits. The bottom J is also supported by semicircular strips K, which are secured rigidly to the ends H. To the bottom of the ends H is attached the re-enforcing strip L. Through one of the ends H, near the bottom J, is placed an outlet-hole, M, which is provided with a suitable stopper, *n*. Under this outlet-hole is placed a trough, *m*. This aperture is for the purpose of drawing off the buttermilk or other liquids from the churn.

The legs and sides of this churn are secured to each other by bolts A', by which means, whenever the parts may be shrunk, they may be drawn together by the adjusting-nuts with which the bolts A' are provided, and leaks from this cause may be effectually prevented.

This churn is also provided with a heating or cooling chamber, B', which is constructed of sheet metal. The inner wall J, which forms the bottom of the churn-box, is secured to the outer side of wall G' by means of strips C'. The lower wall J^1 is secured to the bottom of the churn-box J by solder or other suitable means, and extends nearly to the walls H H. The ends of the lower wall of the cooling-tank are secured to the bottom of the churn-box by the semicircular strips *b'*. The tank B' is provided with an inlet-opening, P, and exit-pipe

O. By means of the tank B′, which receives the heating or cooling liquid, the cream can be kept at the proper temperature for churning.

What I claim as new, and desire to secure by Letters Patent, is—

1. The dasher-shaft A, made in two or more parts, a^3 a^3, detachably connected together, and provided with recesses *r* to receive the paddle-shanks *s*, substantially as described, and for the purpose set forth.

2. The recessed dasher-shaft A, made in two or more parts, a^3 a^3, in combination with the paddles B, having shanks *s*, and connecting-rods F, substantially as described, and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

BYRON T. DANIELS.

Witnesses:
HENRY W. ROOT,
NORTON J. NOWLT.