I. NAPPIN.

CHURN.

No. 183,063. Patented Oct. 10, 1876.

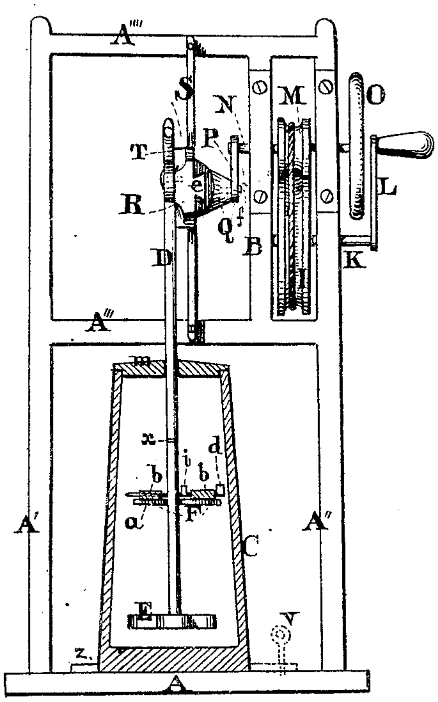

Fig. 1.

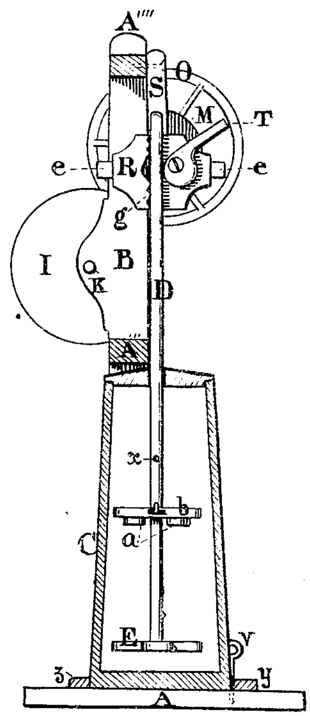

Fig. 2.

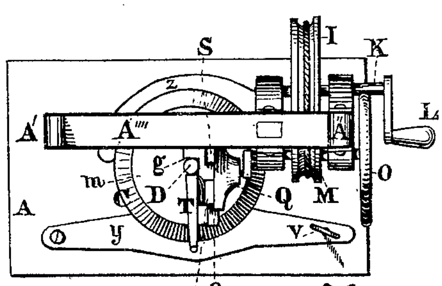

Fig. 3.

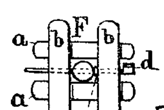

Fig. 4.

Witnessed

[illegible]

[illegible]

Ira Nappin

by E. Thurlow his Atty.

in Fact

_ JAMES R. OSGOOD & CO BOSTON. _

UNITED STATES PATENT OFFICE.

IRA NAPPIN, OF FARMINGTON, ILLINOIS.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **183,063**, dated October 10, 1876; application filed May 2, 1876.

To all whom it may concern:

Be it known that I, IRA NAPPIN, of Farmington, in the county of Fulton, and in the State of Illinois, have invented an Improvement in Churns or Churn-Gearing; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a front elevation; Fig. 2, a vertical cross-section; Fig. 3, a superficial view of sliding block and vertically-sliding block; Fig. 4, a superficial view of upper dasher.

The object of this invention is to abolish, as much as possible, the hard work of churning butter, which labor generally falls to females, or persons who are not strong.

In carrying out this object I use a winch on the axle of a cog or band wheel geared or connected by a band with a smaller or multiplying wheel or pulley set on a shaft, which also carries a balance-wheel, and a crank, which latter is connected, by means of a block provided with a dovetailed or similar groove, which clasps and slides upon a horizontal guide of corresponding section, which, in turn, slides vertically on a stationary guide, to change the rotary motion of said crank into a vertical reciprocating motion for churning. This block carries the churn-rod by means of a readily-adjustable fastening, as, for instance, a cam and a vertical serrated jamb or rib, both forming part of said block.

As a part of the above-mentioned object I first shorten the stroke of said churning by using a second dasher above the one which is generally placed at the lower end of the rod in vertical churns. This dasher, now added, is made movable, in order to slide off the rod for the purpose of cleaning the churn, rod, and dashers.

In the drawings, which represent one of the forms in which this churn is constructed, A represents the base or platform; A′ A′, vertical side standards connected by two cross-bars, A‴ A⁗, one forming the upper end of the frame. These are connected by a vertical brace, B, which, with one of the side posts, supports and furnishes bearings for the axle K of the winch L and band-wheel I, the latter wheel being geared or connected by a band with the multiplying wheel or pulley M above it, set on the shaft N, which carries an auxiliary balance-wheel, O, and crank P at that end nearest to the churn-rod. The crank-pin *f* of said crank is centered in a block, Q, which has on its exterior face toward the churn-rod a dovetailed-shaped (horizontal when attached) groove cut therein across its face, or a groove widest at its bottom, which clasps and slides upon a corresponding rib or guide, *e*, running across a block, R, set upon and sliding on a vertical guide-rod, S, attached above and below to the cross-braces A‴ A⁗. On the face of said block, opposite to the one which carries the rib *e*, and over the center of the churn, is a toothed projection, *g*, at right angles with said face, and opposite to it, on said block, a cam, T, between which latter and said vertical serration *g* is retained the rod D of the churn-dasher, so as to be readily removable.

This churn C is of a very common form, as well as its dasher E and rod D; but the latter carries now a second and loose dasher, F, made of four slats, *b*, fastened together flatwise in a quadrangular form, leaving an interior space large enough to admit the rod D easily, as far as and down to a perforation in which this dasher is secured by horizontal pin *d*, provided with a head at its outer end, and a flat lug or projection, *i*, on one side, which is made to hold the pin in the dasher by being turned sidewise on passing through the admitting-slot in one of the dasher-boards *b*, so threading two side pieces, *b*, of the dasher, and said perforation in the dasher-rod, before mentioned. I also, in place of the band-connection between the wheels I M, use cog-wheels.

The operation of this invention is as follows: The fly-wheel much facilitates the labor of churning with a vertical churn, assisted by the slide-gearing P Q R, and by the union of the two the length of the stroke may be shortened advantageously by diminishing the length of the crank P and adding the extra upper dasher F, which is devised to churn the cream in the upper half of the churn. By these means short quick churning-strokes are produced very favorable for the quick bringing of butter.

The dasher F is easily removed by turning

the tongued pin *d* and extricating it from the rod and the slats *b*.

What I claim as my invention is—

1. In combination with a winch and balance-wheel motors or gearing, substantially as described, the block Q of the crank P, the sliding block R on the rod S, said block R adapted for attachment to the rod of a churn-dasher.

2. The combination, with the shaft N and crank P, of the sliding head-block Q, and sliding cross-head R on guide S, as described.

3. The adjustable dasher F, as shown, in combination with the rod D, blocks R and Q, and crank P, and movable upon the rod to the hole *x* or other point, as described.

4. The dasher F, composed of slats *b*, disposed in quadrangular form, and loosely attached to the rod D by pin *d*, as described.

In testimony that I claim the foregoing churn I have hereunto set my hand this 19th day of April, A. D. 1876.

IRA NAPPIN.

Witnesses:

ALFRED STEENBURG,

A. W. RICHARDS.