B. F. PRICE.

Churn.

No. 162,308. Patented April 20, 1875.

Fig. 1.

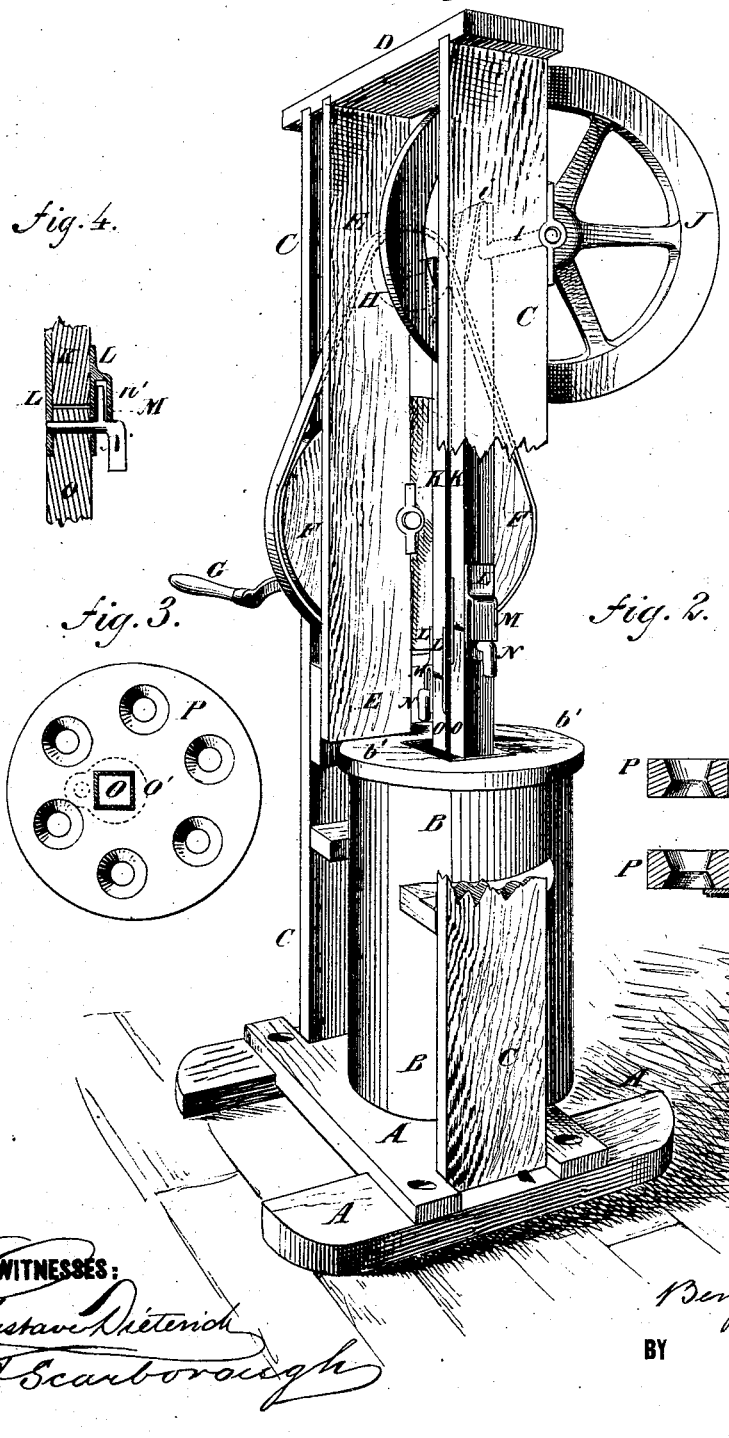
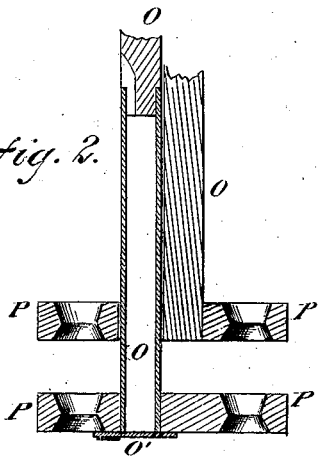


Fig. 4.

Fig. 3.

Fig. 2.



WITNESSES:

Gustave Dietenich

J. H. Scarborough

INVENTOR:

Benj. F. Price

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN F. PRICE, OF MOUNT STERLING, ILLINOIS, ASSIGNOR TO HIMSELF AND A. A. HILL, OF SAME PLACE.

IMPROVEMENTS IN CHURNS.

Specification forming part of Letters Patent No. **162,308**, dated April 20, 1875; application filed March 6, 1875.

To all whom it may concern:

Be it known that I, BENJAMIN F. PRICE, of Mount Sterling, in the county of Brown and State of Illinois, have invented a new and useful Improvement in Churning Apparatus, of which the following is a specification:

Figure 1 is a perspective view of my improved churning apparatus, part of the frame being broken away. Fig. 2 is a detail vertical section of the dashers. Fig. 3 is a top view of the lower dasher, the hollow shaft being shown in cross-section. Fig. 4 is a detail sectional view of the coupling.

Similar letters of reference indicate corresponding parts.

The invention is an improvement in a well-known class of reciprocating churns.

The improvement relates more particularly to the dasher-shafts and the devices coupling them to the bars which connect with the crank-shaft, as hereinafter described.

A is the base-frame or platform, upon which the churn-body B stands, the sill of which upon the side where the operator stands should be made wide, so that the operator may place his foot upon it, and thus hold the machine steady while being used. To the side parts of the base-frame A are attached the lower ends of two uprights, C, between which the churn-body B stands, and the upper ends of which are connected by a cross-bar, D. Upon the inner side of one of the uprights C, and at such a distance from it as to give a sufficient space for the gearing, is placed an upright, E, the upper end of which is secured to the cross-bar D, and its lower end extends down to the cover b' of the churn B, where it is secured to a block interposed between it and the upright C. The lower end of the upright E thus serves as a stop to hold the churn-cover b' in place while the churning is being done. F is a wheel, placed in the space between the uprights C and E, and the journals of which revolve in bearings attached to said uprights. The outer journal of the wheel F projects, and to it is attached the crank G, by which the machine is operated. The wheel F is geared to the wheel H by a belt, as shown in Fig. 1, and this construction is preferred as being noiseless, or by teeth, as may be desired. The wheel H is attached to a shaft, I, which revolves in bearings attached to the uprights C E C, and to it, near its other end, is attached a fly-wheel, J. Upon the shaft I, directly over the center of the churn B, is formed a double crank, i', projecting upon opposite sides of the said shaft I, and to which are pivoted the upper ends of two bars, K. To the opposite sides of the lower ends of the bars K are attached plates L, upon the outer one of each pair of which is formed, or to it is attached, a catch-plate, M, so as to leave a space between it and the plate L for the toe n' of the coupling-pin N to enter. The ends of the plates L project below the ends of the bars K, to receive the upper ends of the dasher-shafts O, and have holes formed through them to receive the coupling-pins N, which also pass through holes in the said shafts O. The outer ends of the coupling-pins N are bent at right angles, and are made heavy, so as to always hang down when the machine is in use. Upon the coupling-pins N, near their angles, and projecting in the opposite direction from said outer ends, are formed toes n', which enter the space between the plates L and the the catch-plates M, and thus keep the coupling-pins N from working out. The coupling L M N enables the dasher-shafts O to move up and down in vertical lines while the upper ends of the connecting-rods K move through the arcs of circles. The dasher-shafts O pass down side by side through a single hole in the center of the churn-cover b'. P are the dashers, which are placed the one directly above the other, and are attached eccentrically to the lower ends of the shafts O, the shafts O of the lower dasher P passing through a hole in the upper dasher P, and being made a little longer than the shaft O of the said upper dasher P. In the dashers P are formed a number of holes, which flare upward and downward from the central plane of said dasher, as shown in Fig. 2, so that more milk may enter said holes than can pass through freely, which subjects the milk to great friction, and brings the butter very quickly. The shaft O of the lower dasher P is made hollow from a point above the cover

b' to its lower end, at which point an opening leads out through the side of the shaft. The lower end of the hollow shaft O is closed by a valve, o', which opens downward, and which closes as the dasher P moves downward, and prevents the milk from entering the hollow shaft.

As the dasher moves upward the valve o' opens and allows air to draw through the hollow shaft into the milk, which facilitates the bringing of the butter. It will be observed that the dashers are always moving in opposite directions.

To the inner sides of the lower parts of the uprights C are attached blocks Q, the inner edges of which are concaved to fit upon the sides of the churn-body B, and one of which is hinged to the said uprights, so that it may be turned up to allow the churn to be conveniently inserted and removed.

Having thus described the features of my invention, together with such other mechanism as is necessary to form a complete churning apparatus, what I claim is—

In a churning apparatus, the dasher-shafts O O and crank-rods K K, connected by the flexible joint or coupling formed of the plates L M, pins N, having toes n' and weighted or drop handles, all combined as shown and described.

BENJAMIN F. PRICE.

Witnesses:
W. L. TAYLOR,
JAMES P. BIGGS.