E. Spaun.

Churn.

No. 82,652. Patented Sept. 29, 1868.

Fig: 1

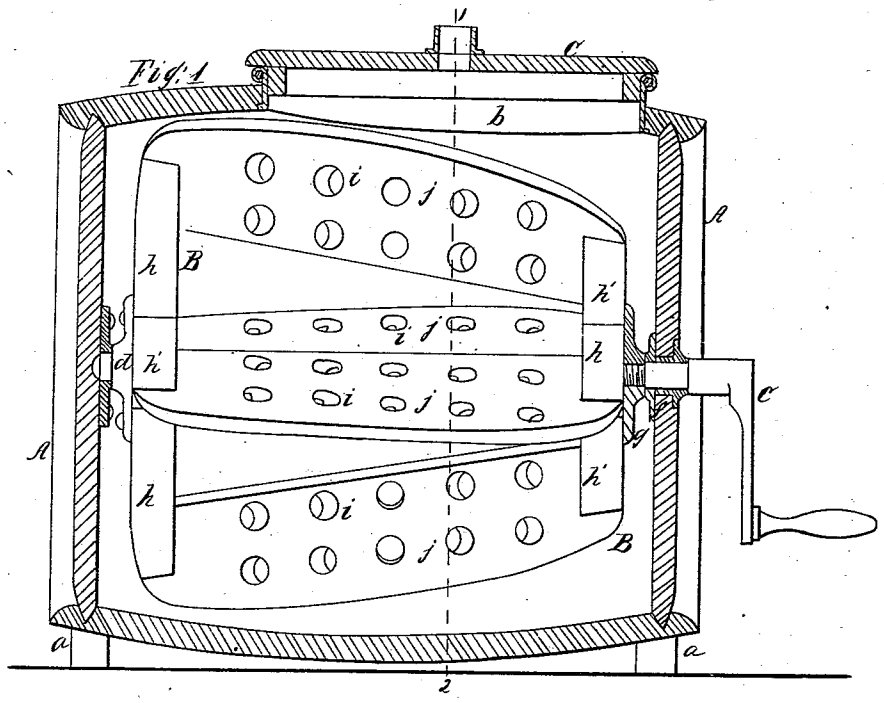


Fig: 2

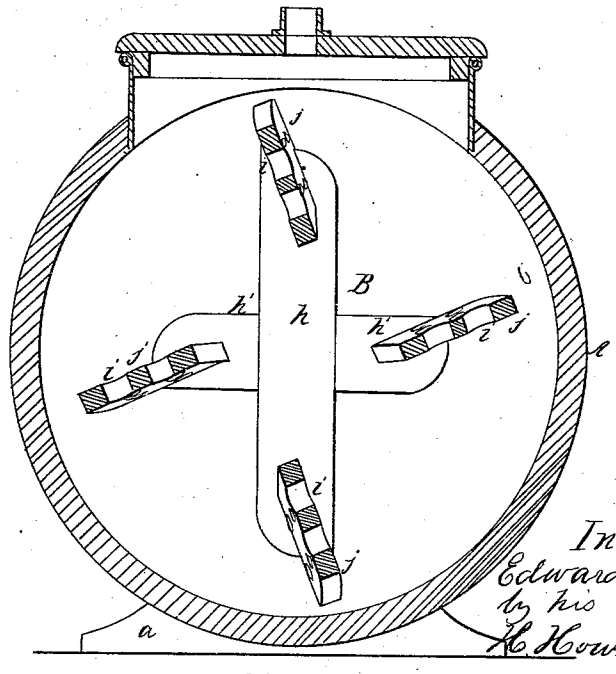
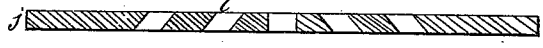


Fig: 3



Witnesses

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United States Patent Office.

EDWARD SPAIN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 82,652, *dated September* 29, 1868.

IMPROVEMENT IN CHURNS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, EDWARD SPAIN, of Philadelphia, Pennsylvania, have invented an Improved Churn; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in the churn for which Letters Patent were granted to me on the 16th day of May, 1848, and extended, April 30, 1862; and the improvements consist, first, of a dasher, having inclined perforated vanes, arranged at an angle with respect to each other, and to the axis of the dasher, as fully described hereafter, so as to effect a thorough agitation and mixing of the mass of cream; and, second, in so perforating the vanes of the dasher that jets of cream which pass through the said perforations shall cross each other, and become thoroughly commingled.

In order to enable others skilled in the art to make and apply my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a longitudinal section of my improved churn.

Figure 2, a transverse vertical section of the same, on the line 1–2, fig. 1; and

Figure 3, a sectional view of a portion of the dasher.

Similar letters refer to similar parts throughout the several views.

The barrel A of the churn is supported on suitable feet *a a*, and has on its upper side a square opening, *b*, closed by a detachable cover, *c*, in the centre of which is a short tube, for the passage of gas from and the introduction of fresh air into the churn.

The dasher B occupies nearly the whole interior of the churn, and (as in my former patent of May 16, 1848) is of such a form that it can be introduced into or withdrawn from the same through the opening *b*.

The dasher has at one end a pivot, *d*, which turns in a bearing secured to one head of the churn, and at its opposite end a nut, *g*, into which is screwed the handled axis C, the latter passing through and turning in a bearing, *f*, on the other head of the churn.

At each end of the dasher are two transverse bars, *h* and *h'*, which cross each other at right angles, and are of different lengths, as shown in fig. 2, the opposite bars being so arranged that the longer ones shall be opposite the shorter, as seen best in fig. 1.

In consequence of this arrangement of the transverse bars, the vanes *j* of the dasher, which are secured to their outer ends, alternately approach and recede from the axis, and are arranged at different angles with respect to each other.

The vanes are also secured to the cross-bars in an inclined position in respect to the axis, as seen in fig. 2, and each vane is perforated with a number of holes, *i*.

Some of these holes are angular, and others straight, they being in the present instance arranged in two rows on each vane; the holes of one row being inclined in directions opposite to that of the corresponding holes of the adjacent row, (see figs. 1 and 3.)

The operation of the dasher upon a mass of cream is somewhat similar to that described in my former patent, the vanes tending to alternately force the mass from end to end of the churn, and at the same time to impart to it a rotary motion.

Besides this compound motion, however, the mass is raised from the bottom and thrown toward the centre of the churn, and the jets of cream, which pass through the perforations *i* of the vanes, cross each other, and become thoroughly mixed.

The mass of cream is thus thoroughly agitated, and is prevented, after the butter begins to form, and becomes thick, from adhering to and merely revolving with the dasher.

The arrangement and angle of the perforations *i* of the vanes may be varied, if desired, so as to render still more perfect the agitation of that portion of the mass which passes through them.

Without, therefore, confining myself to the particular arrangement and angle of the vanes and their perforations,

I claim as my invention,and desire to secure by Letters Patent—

1. A dasher, having inclined perforated vanes, arranged at an angle with respect to each other and to the axis of the dasher, as set forth, for the purpose specified.

2. So perforating the vanes of the dasher that the jets of cream which pass through the said perforations shall be caused to cross each other, as described, for the purpose specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD SPAIN.

Witnesses:

E. H. BAILEY,

C. B. PRICE.