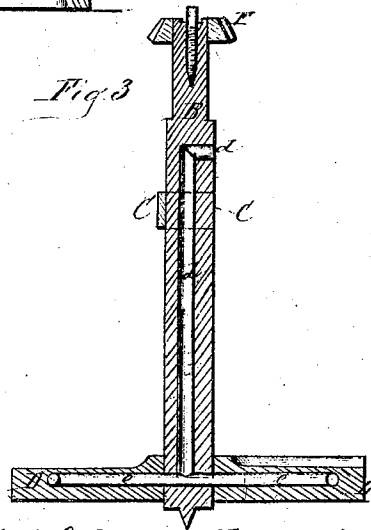
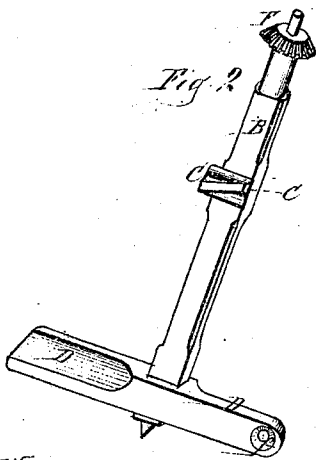
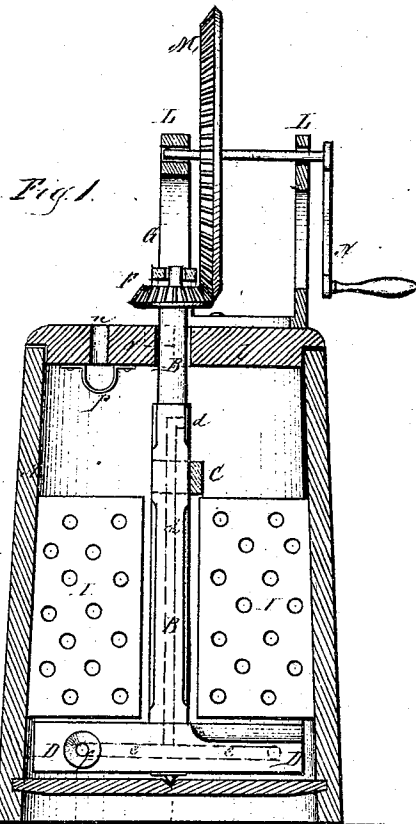


C. A. Boone,

Churn.

No. 102481.

Patented May 3, 1870.



Witnesses
Hugh K. Stoddman
Charles Lauman

Charles A. Boone, Inventor.
by Theodore Mungie, his Attorney.

United States Patent Office.

CHARLES A. BOONE, OF SHICKSHINNY, PENNSYLVANIA.

Letters Patent No. 102,481, dated May 3, 1870.

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, CHARLES A. BOONE, of Shickshinny, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Churns, of which the following is a specification.

Nature and Objects of the Invention.

My invention relates to the combination of a dasher, having a hollow shaft and hollow bottom paddles, with stationary perforated wings fastened to opposite sides of a churn in such a manner as to offer resistance to the cream as it inclines to the motion of the paddles; the objects of the invention being to bring air to the bottom of the churn, and to convert the wings into dashers without expending power for these purposes; and to hasten the operation of churning.

Description of the Drawings.

Figure 1 is a vertical section of a churn embodying my invention.

Figure 2 is a perspective view of the dasher.

Figure 3 is a vertical section of the dasher, showing the openings in the shaft and bottom paddles, through which air is introduced.

General Description.

A is the churn body.

The shaft B has the opening *d*, and is provided with the paddles C and D.

The paddles C are fastened so as not to interfere with the opening *d*; and the paddles D, having the openings *e*, are fastened so that the openings *e* connect with the opening *d*.

The escapes *f* of the paddles D are reamed out, and are two in number, placed near the end of the paddles.

The shaft B has the beveled wheel F at the top.

The upper journal of the shaft B works in the bearing G.

The lower journal works in the metal pit H in the bottom of the churn.

The perforated wings I are fastened to opposite sides of the churn body A.

The paddles D revolve beneath, and the paddles C above, the wings I.

The paddles D are flared so as to press the cream toward the paddles C.

The paddles C are flared so as to press the cream toward the paddles D.

The wings I may be cut in two, and placed so as to leave a space between them, and another set of paddles, C, placed upon the shaft B, to revolve in the space between the wings I.

The lid of the churn is made in two pieces, *l* and *o*. The gearing, consisting of the driving-wheel M, bearings L L and G, and crank N, is fastened to the piece *l* of the lid.

The piece *o* has the hole *n* to admit the air, and the guard *p* to prevent the cream from splashing out.

Motion is communicated to the dasher through the beveled-wheels F and M.

The crank should be turned so that the thin edges of the paddles C and D will go foremost.

When the cream is poured into the churn it will rise in the hollow shaft B of the dasher; but, by rapidly rotating the dasher, a vacuum is caused by the bottom paddles D.

The cream first falls from the shaft into the vacuum; then the air enters the opening *d* near the top of the shaft and fills the vacuum as fast as it is created. The air is, in this manner, introduced into the bottom of the churn, and is distributed through the cream, thus hastening the operation of churning.

The wings I resist the cream as it inclines to the motion of the paddles, and as it strikes the wings it is beaten and broken by being forced through the perforations.

By this mechanism, power is not expended, especially to bring the air to the bottom of the churn, nor to convert the wings I into dashers.

Claim.

I claim as my invention—

The dasher, having the hollow shaft B, hollow paddles D, and paddles C, in combination with the stationary perforated wings I, substantially as and for the purpose hereinbefore specified.

In testimony that I claim the foregoing improvement in churns as above described, I have hereunto set my hand and seal, this 23d day of March, 1870.

CHARLES A. BOONE. [l. s.]

Witnesses:

W. F. KLINE,
SAMUEL MARTIN.