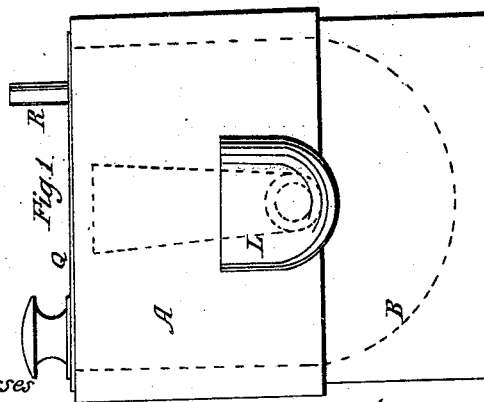
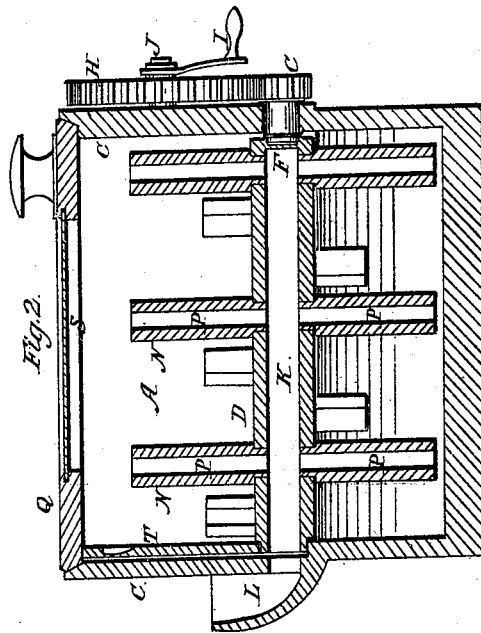


N. CHAPMAN.

Churn.

No. 52,268.

Patented Jan'y 30, 1866.



Witnesses  
J. Dennis  
Chas. Hadaway

Inventor  
Nathan Chapman

# UNITED STATES PATENT OFFICE.

NATHAN CHAPMAN, OF MILFORD, MASSACHUSETTS.

## IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. 52,268, dated January 30, 1866.

### *To all whom it may concern:*

Be it known that I, NATHAN CHAPMAN, of Milford, Worcester county, State of Massachusetts, have invented certain new and useful Improvements in Churns for Making Butter; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The nature of my invention and improvements consist in making a horizontal dash-shaft hollow, and with hollow paddles open at the ends, and a cup or tube on or in the end of the churn-box, to supply air to the end of the shaft, through which it is drawn in and blown out of the outer ends or sides of the paddles into the cream, to aid in agitating it and bringing the butter.

Figure 1 is an elevation of one end of the churn. Fig. 2 is a section of Fig. 1 cut perpendicularly through the center, showing the interior.

In these drawings, A is an oblong rectangular churn-box, which may be made in the form shown, or in such other form as will answer the purpose. The bottom of this box may be made angular or curved to correspond with the rotation of the paddles, as shown in Fig. 1, at B, where it is represented in dotted lines. The ends C C of this box are perforated for the horizontal paddle or dash-shaft D to turn in.

The shaft D is made in two pieces. The right-hand end is a short piece fitted to turn in the end of the box, as shown in Fig. 2, with a collar to fit and turn against the inside of the box, and a small projecting piece, F, with a pin through it to couple it to the other part of the shaft, as shown in the drawings. This short piece of the shaft projects outside of the box and receives the pinion G, which is fastened to it, to turn the shaft by the gear H and crank I, which turn on the pivot J, fastened in the end C of the box, and by this crank and gear the churn is operated.

The shaft D is shown hollow in the section, Fig. 2.

K is the cavity, with the left-hand end opening into the cup L on the outside of the end

of the box, to supply air to the hole in the shaft D, which is perforated radially for the paddles N N, which are fastened in the shaft in some convenient manner, and may be made in the form shown, or in such other form as will answer the purpose. These paddles are perforated through their whole length, as shown at P P, so that the centrifugal force, when the shaft is turned fast, will draw the air down through the cup L into the shaft D and blow it out through the holes P P in the paddles into the cream and agitate it most effectually and aid in bringing the butter.

The cover Q of the churn-box is fitted to a rabbet in the edge of the box and provided with a tube, R, for the air to escape from the box, which is blown out through the paddles in churning. This cover may have a glass in it, as shown at S, if preferred that way.

There is a dovetailing groove in the inside of the end C to put the end of the shaft D down after it is put onto the coupling F, and the slide T is put into this groove after the shaft is put in.

Instead of the cup L, there may be a metal tube bent and applied to the outside of the box, with the end projecting through into the inside of the churn-box, to form a journal for the shaft of the dasher and supply air at the same time; or a metal bracket, made hollow or with a cavity behind it and a tubular projection on it to form a pivot for the shaft, may be fastened to the inside of the box so as to supply air to the shaft when the churn is worked.

This churn may be washed with great facility by pouring water into the cup L and turning the churn fast to wash out the holes in the shaft and paddles.

What I claim as my invention and improvements in churns is—

Making a horizontal dash-shaft hollow, with hollow paddles open at their outer ends and communicating with the hole in the shaft, in combination with a cup or tube at the end of the shaft, to supply air to the shaft and paddles when the churn is in operation, substantially as described.

NATHAN CHAPMAN.

Witnesses:

J. DENNIS, Jr.,  
CHAS. HADAWAY.