B. S. FLETCHER.

Churn.

No. 54,878. Patented May 22, 1866.

Fig. 3

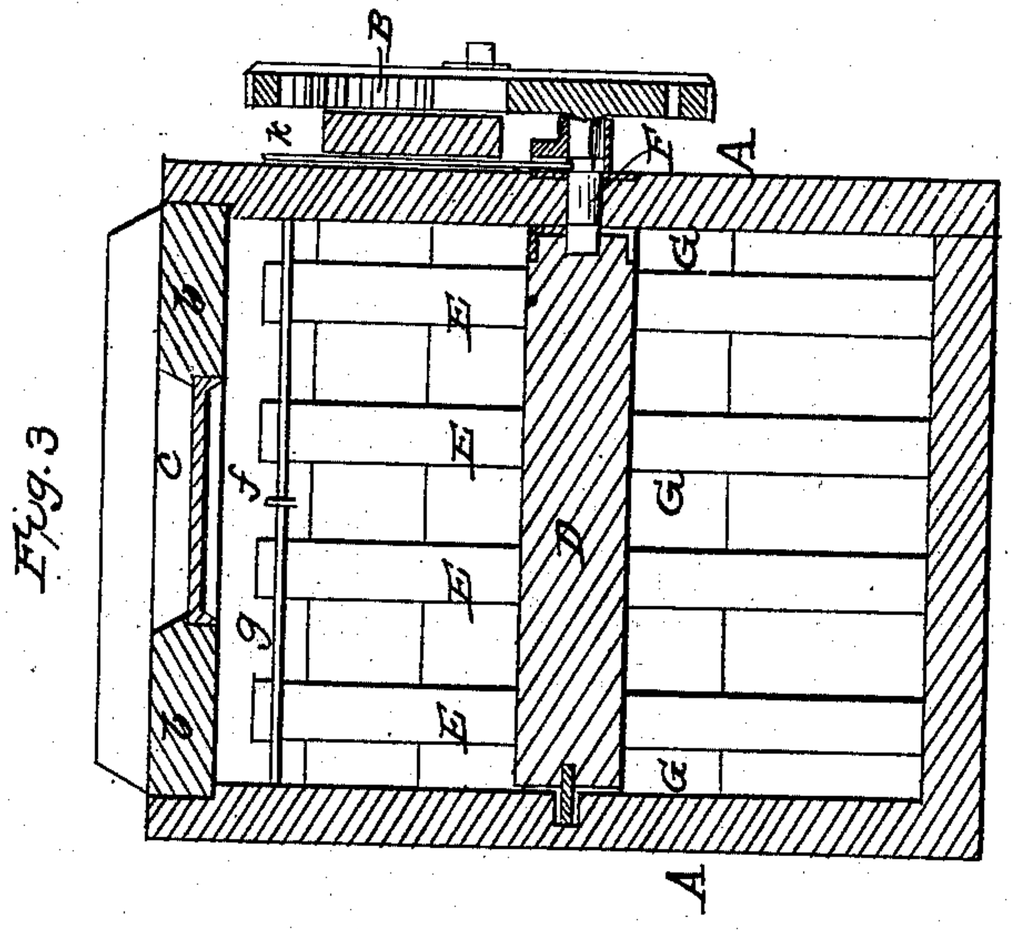


Fig. 4

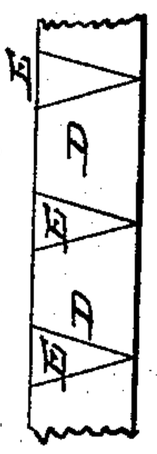


Fig. 2

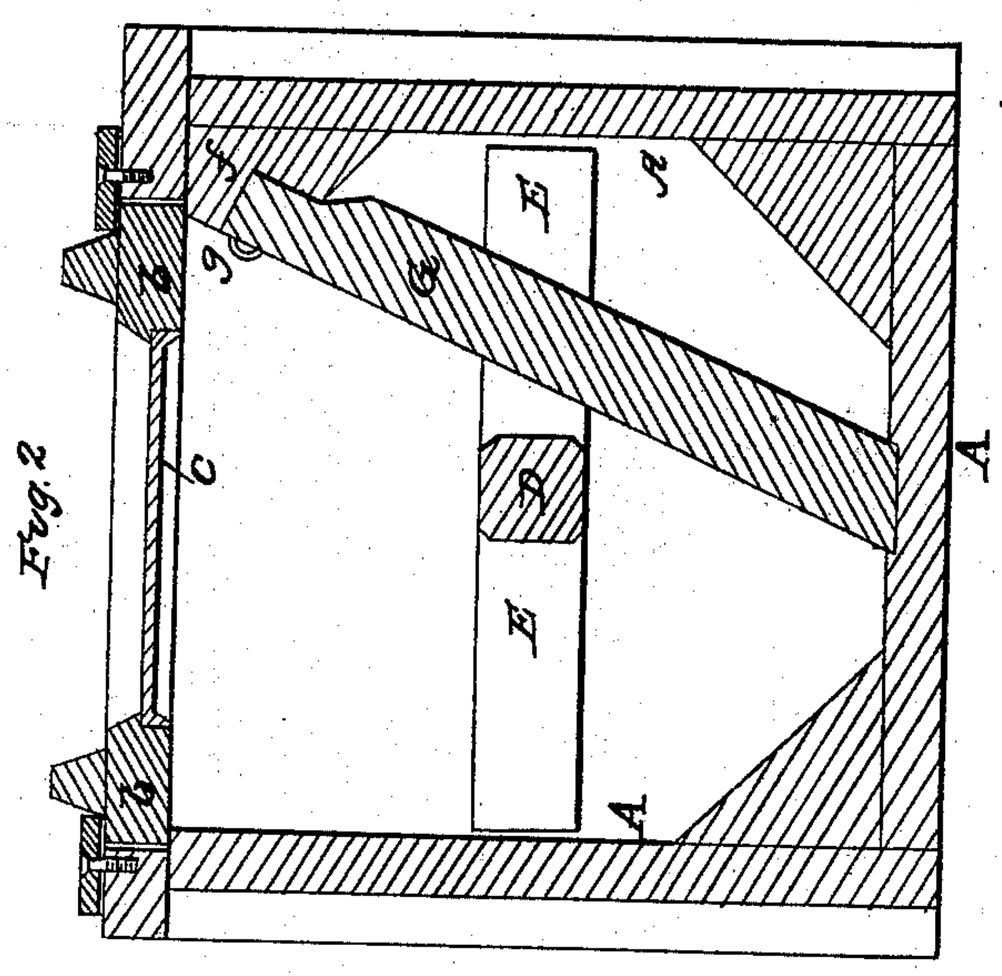
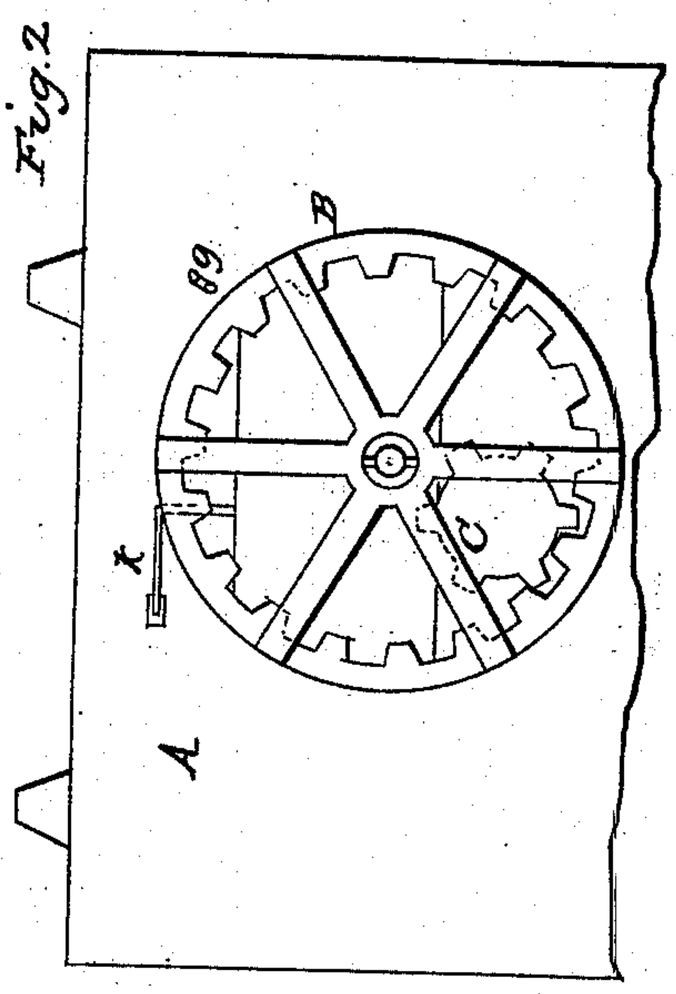


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN S. FLETCHER, OF CORNISH, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF AND SYLVESTER DAVIS.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **54,878**, dated May 22, 1866.

To all whom it may concern:

Be it known that I, BENJAMIN S. FLETCHER, of Cornish, in the county of Sullivan and State of New Hampshire, have invented a new and useful Improvement in Churns; and I hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 is a broken side view. Fig. 2 is a longitudinal sectional view. Fig. 3 is a cross-sectional view; and Fig. 4 is a view of a portion of a shaft, showing an end view of the breakers.

I am aware that there are other churns patented and in use which, in some respects, are similar to mine, yet in other respects mine is essentially different from any yet patented, especially in the form, position, and operation of the dashers and breakers.

I construct my churn of wood or any other suitable material, of a square form, with a detachable lid or cover, nearly as large as the top of the churn, which is held in its place by buttons. Within the lid is a glass plate, through which the process of churning may be observed, enabling the operator to know when the operation is completed without removing the lid. Within the churn is a shaft extending horizontally from side to side, and which is furnished with flies or dashers. There is also within the churn a series of breakers, between which the dashers pass as they revolve. The lower ends of said breakers rest in depressions in the bottom of the churn, corresponding in shape and size with the ends thereof. On the upper ends of the breakers necks are constructed, which rest in collars in a cross-piece across one of the upper ends of the churn. Said breakers are held in place by a rod which passes through the upper part of the churn from side to side and across the necks thereof, but they may be removed from the churn by withdrawing the rod. When in the churn they rest at an angle of about sixty-five degrees.

The transverse form of the dashers and breakers is that of an isosceles triangle, and their distance apart is a little more than the length of the short angle, and as the dashers revolve with the long angles in front they work together easily and press the cream closely. On one end of the shaft on which are fixed the dashers is a journal which works in a journal-box placed in the side of the churn near the center. In the other end of the shaft is a square socket, which is adapted to the inner end of a short metallic shaft which extends through the side of the churn, and on the outer end of which is fixed a pinion which gears into a larger encycloidal wheel revolving on a pivot fixed firmly to a cleat attached to the side of the churn. To the large wheel is attached a handle forming a crank by which the machinery is operated. Around the short metallic shaft is a groove which admits the point of a small metallic rod, which passes up through the cleat to which the pivot on which the large wheel revolves is fixed. This rod constitutes a key, which prevents the short shaft from slipping out while the machinery is in operation and becoming detached from the shaft on which the dashers are fixed; but it may be withdrawn when it is desired to withdraw the shaft for the purpose of removing the dashers from the churn.

A A, Figs. 1, 2, and 3, represents the body of the churn; *b b*, the cover, and *c* the glass plate in the cover.

B, Figs. 1 and 3, represents the encycloidal wheel gearing with the pinion C, Fig. 1.

D, Figs. 2 and 3, is the shaft on which is fixed the flies or dashers E E. On one end of this shaft is the journal *a*, Fig. 3, which revolves in the journal-box *e*. In the other end of said shaft is a socket adapted to the square and of the short shaft F. *i* is the groove in said shaft, in which rests the key *k*, Figs. 1 end 3.

G G, Figs. 2 and 3, are the breakers, the necks of which are held in the collars in the cross-piece *f* by the rod *g*.

My churn may be constructed so that a crank may be attached to the outer end of the shaft F when a slow motion of the dashers is desired; or the wheels may be dispensed with entirely.

In operating my churn the form of the dashers is such that they enter the cream easily and press it closely in passing between the breakers, causing a sharp current and a rapid

breaking of the oily globules, and thus completing the churning in a short time.

After the churning is completed the shaft D may be removed from the churn by removing the wheel B from the pivot and raising the key *k* and removing the pinion C.

The breakers G G may be removed by withdrawing the rod *g*, when there will be no obstruction to the gathering of the butter or the cleansing of the churn.

The points of difference between my churn and others patented is in the form of the dashers E E and the breakers G G, and the position and manner in which said breakers are placed within the churn.

It is simple and cheaply constructed, is easily operated, performs the work with great rapidity, and can be readily cleansed.

Instead of arranging the dashers E E in a straight line on the shaft D, I may arrange them in a zigzag or spiral form.

What I claim as new in my invention, and desire to secure by Letters Patent, is—

The form and arrangement of the dashers E E and the breakers G G.

BENJAMIN S. FLETCHER.

Witnesses:

NELLIE C. DAVIS,

E. MARIA DAVIS.