

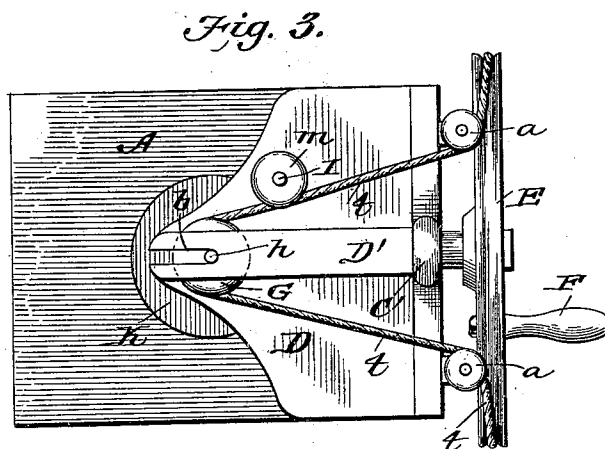
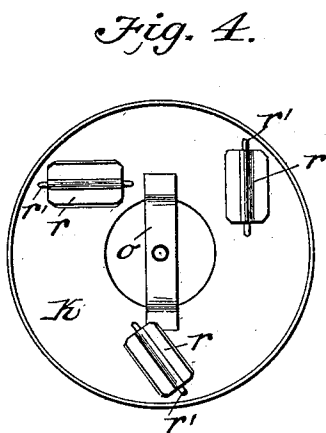
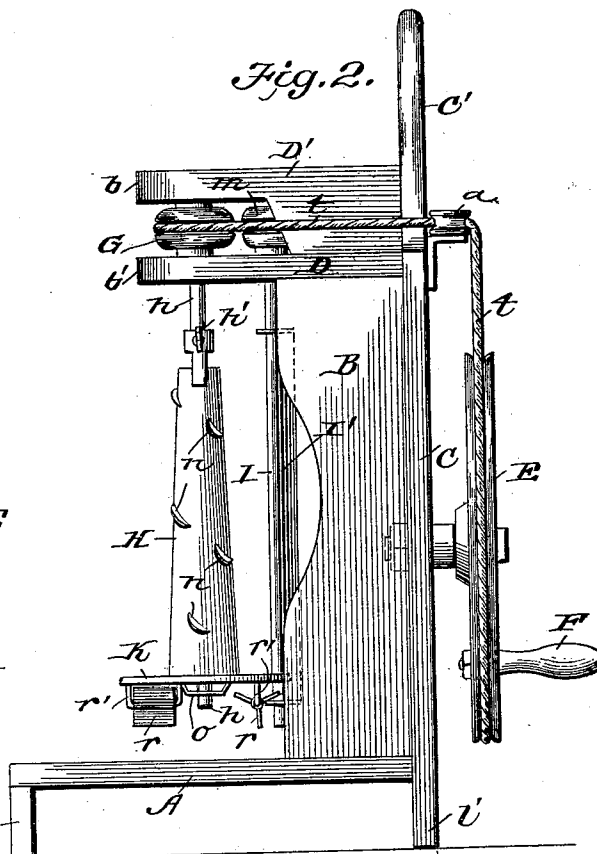
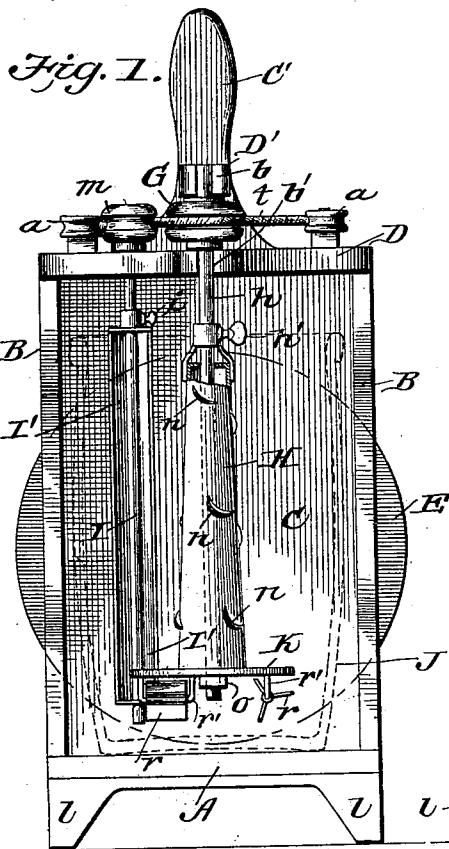
No. 626,623.

Patented June 6, 1899.

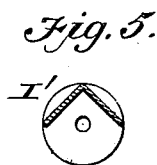
M. O'MARROW.  
CHURN.

(Application filed June 25, 1898.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

MATTIE O'MARROW, OF PARIS, TEXAS.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 626,623, dated June 6, 1899.

Application filed June 25, 1898. Serial No. 684,464. (No model.)

*To all whom it may concern:*

Be it known that I, MATTIE O'MARROW, of Paris, in the county of Lamar and State of Texas, have invented a new and useful Improvement in Churns, of which the following is a specification.

The object of my invention is to provide a simple and effective churn-operating mechanism which does not need any particular form of receptacle to hold the cream, but which is designed to be applicable for churning butter in a bowl, a jar, a bucket, or any other receptacle in which the cream may be contained.

A further object is also to provide such a construction as may be easily made and repaired by any carpenter or farmer without having to rely upon the manufactories of cities.

My invention operates upon the principle of aerating and cooling the cream at the same time it is being churned and also of obstructing the centrifugal action of the cream by a breaker; and it consists in the peculiar construction and arrangement of parts which I will now proceed to fully describe with reference to the drawings, in which—

Figure 1 is a front view with a stone jar shown in dotted lines as a receptacle for holding the cream. Fig. 2 is a side view. Fig. 3 is a top plan view. Fig. 4 is an under side view of the aerator, and Fig. 5 is a cross-section of the current-breaker.

In the drawings, A represents a base having short legs or strips *l* in front for supporting it a short distance from the floor or table. B B are two vertical side pieces. C is a vertical back piece, and D a top piece, all of which parts may be conveniently made of wood securely nailed or screwed together. The base A forms a table upon which is supported the detachable receptacle J (shown in dotted lines) for containing the cream to be churned. This receptacle may be an earthenware jar, a bucket, pail, tub, crock, or any other convenient receptacle. The side pieces B B are preferably cut away with a semicircular opening on the side to give more room for the hands in placing the receptacle J in position or taking it out. The back piece C has its lower part formed into short legs *l' l'* and its top part extended above the piece D

in the form of a handle C' for moving the churn or steadying it while being operated. On the top piece D and in the angle between it and the handle C' is secured a short arm D'. The front end of this arm is slotted vertically to form a bearing *b*, and the front end of top piece D is also slotted vertically to form a bearing *b'*, in which two bearings there revolves and is supported from its upper end alone a revolving shaft *h*, having rigidly attached to the same between the bearings *b* and *b'* a grooved pulley G. To the lower end of the revolving shaft *h* is detachably secured by a set-screw *h'* an aerator and beater H. This consists of a tapered tube smallest at the top, which is closed, and largest at the bottom, where it is provided with a horizontal disk K. The tapered tubular portion of the aerator is provided along its sides with a series of curved openings *n*, having flanged edges, and to the under side of the bottom of the disk is attached a bridge-piece *o*, which is perforated to receive the shaft *h* and hold the aerator concentric. To the under side of the disk there are attached a set of three, more or less, revolving wing beaters *r* and mounted to revolve freely upon loop-shaped axes *r'*, extending down from the disk.

I is a vertical shaft extending through a bearing in the top piece D of the framework. This has rigidly attached on its upper end, above the piece D, a grooved pulley *m*, and below the piece has a detachable current-breaker I', formed of a V-shaped piece of metal arranged longitudinally on the shaft I and detachably connected thereto by a set-screw *i*. This current-breaker, like the aerator, is supported only at its upper end and has no bearing at its lower end, but simply dips down into the cream to arrest and break up the circular or centrifugal action of the cream as caused by the revolving beater and aerator.

On the rear side of the vertical back piece C of the main frame there is mounted a short axial bearing, upon which is supported and turns a large grooved wheel E, having a turning crank or handle F. Around the peripheral groove of this wheel there passes an endless cord or belt *t*, which passes over two guide-rollers *a a* at the upper edge of the framework and then extends horizontally

around the pulley G of the aerator-shaft, and as it passes around this pulley one side of said belt bears against a pulley *m* on the current-breaker shaft I.

- 5 The operation of my churn is as follows: Any receptacle containing the cream is placed on the base or table A and the aerator-shaft and aerator and the current-breaker shaft, with current-breaker, are let down into the  
 10 cream. To do this, the set-screw securing the current-breaker is first loosened, the current-breaker inserted in the cream-receptacle, and the shaft I is then slipped through the top piece D and is then connected to the current-  
 15 breaker I' by means of the set-screw. The aerator-shaft, with aerator, is inserted into the receptacle and is then adjusted laterally into the bearings *b b'*, and the belt *t* is then extended around the pulley G and in contact  
 20 with *m*. Now as the wheel E is turned by its handle F it imparts a very rapid revolution to the aerator and beater, air is distributed through the cream, and the revolving beaters on the lower side of the disk cause a rapid  
 25 and violent agitation of the cream, that has a tendency to set it whirling; but this whirling motion is broken up by the rotation of the V-shaped current-breaker I'. The general ef-

fect is to cause a rapid churning of the butter in a very short space of time, producing a 30 high grade of butter and a large yield of the same.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A combined aerator and beater for a rotary churn, consisting of a pendent shaft supported wholly at its upper end and having a tapered tube H with flanged and curved openings in its sides, and having at its bottom a 40 horizontal disk with bridge-pieces and rotating wing beaters arranged upon horizontal axes attached to the under side of said disk, substantially as and for the purpose described.

2. A current-breaker for a rotary churn consisting of a vertical and pendent shaft supported wholly at its upper end, and a piece V-shaped in cross-section inclosing said shaft and extending longitudinally thereon and means for detachably connecting it to the 50 shaft and rotating the shaft, substantially as shown and described.

MATTIE O'MARROW.

Witnesses:

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