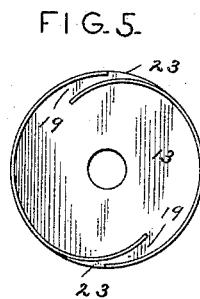
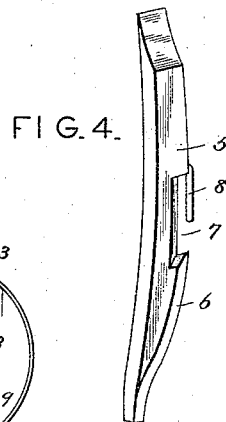
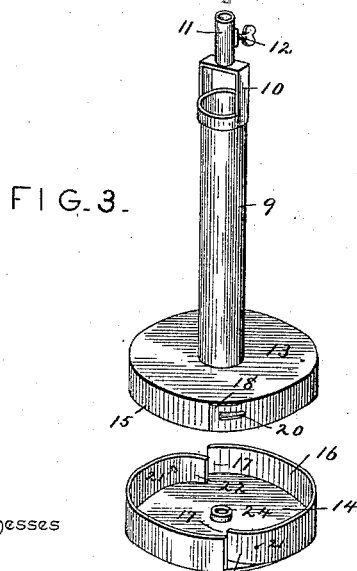
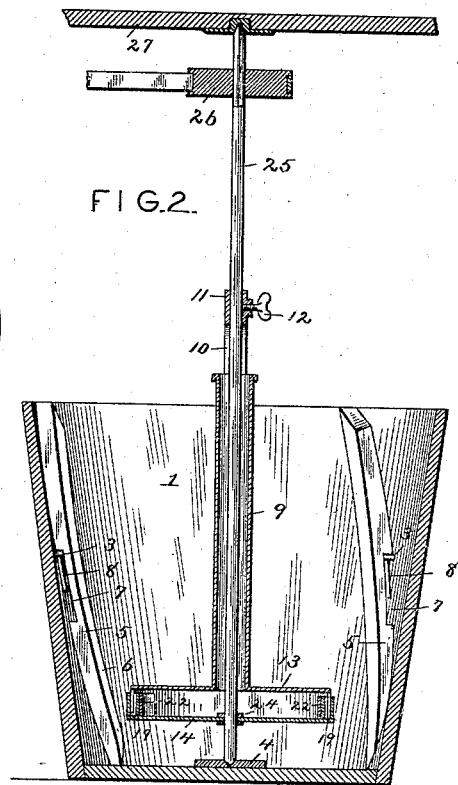
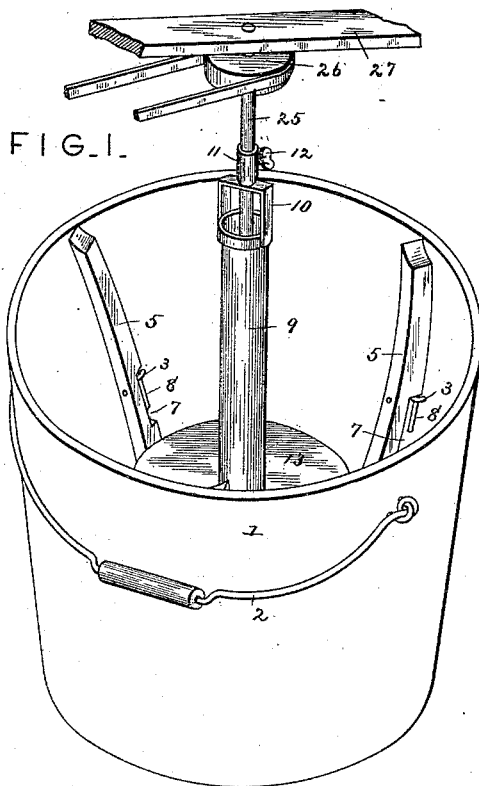


(No Model.)

N. MONDAY.  
CHURN.

No. 489,872.

Patented Jan. 10, 1893.



Witnesses

Harry L. Amer.

By his Attorneys,

Chas. S. Hyer

Inventor

Newton Monday.

# UNITED STATES PATENT OFFICE.

NEWTON MONDAY, OF LATHROP, MISSOURI, ASSIGNOR OF ONE-HALF TO  
JAMES M. O'CARR, OF SAME PLACE.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 489,872, dated January 10, 1893.

Application filed April 15, 1892. Serial No. 429,341. (No model.)

*To all whom it may concern:*

Be it known that I, NEWTON MONDAY, a citizen of the United States, residing at Lathrop, in the county of Clinton and State of Missouri, have invented a new and useful Improvement in Churns, of which the following is a specification.

This invention relates to certain new and useful improvements in churns, and consists of the construction and arrangement of the parts thereof as will be more fully hereinafter described and claimed.

The object of this invention is to provide a churn equipped in such manner as to introduce a current of air and force the same by centrifugal action through the particles of the cream to materially assist in breaking the same and the globules thereof, thereby facilitating the formation of butter.

In the drawings—Figure 1 is a perspective view of the churn embodying the invention. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a detail perspective view of the air feeding device removed and showing the chamber or head thereof separated. Fig. 4 is a detail perspective view of one of the breakers. Fig. 5 is a bottom plan view of a portion of the air-feeding device.

Similar numerals refer to corresponding parts in the several figures.

Referring to the drawings, the numeral 1 designates a tub or churn body which may be provided with a suitable bail 2 and having on the interior surface thereof a series of eyes 3 arranged at an angle of inclination. On the interior surface and centrally located in the bottom of the said tub or body 1, is a step 4 for purpose which will be more fully hereinafter referred to.

Breakers 5 are secured to the inner surface of the churn, and are arranged diagonally or spirally. These breakers consist of strips of suitable material having outer faces 6 beveled and curved to conform to the inner surface of the tub or body 1, and are formed with slots 7 to permit the passage therethrough of the cream dashed upward there against, when said cream flows downward toward the bottom of the tub or body 1. The opposite faces of these breakers are parallel and stand at an angle to the tub or body, and the lower end

of each of the breakers is tapered in order to avoid unnecessary projection when mounted in position in the tub or body. The breakers are removably connected to the said tub or body and are provided with catch pins 8 adapted to engage the eyes 3. The cream dashed against the projecting faces of the breakers will be forced backward as said breakers are located in line of the whirl of the cream.

The centrifugal air device is composed of a tube 9 having a yoke 10 at its upper end carrying a sleeve 11 through which extends a set screw 12. The upper end of the said tube is open and clear for the admission of air therein, and the lower end thereof is formed, or has attached thereto the upper section 13 of an air chamber. The lower section 14 of said air chamber is a counterpart of said upper section, and is slightly larger in diametric cross-section so as to embrace said upper section. Both of the sections 13 and 14 are constructed in the form of disks with flanges 15 and 16 respectively formed with each. The lower end of the tube 9 opens into the upper section 13, and the flanges of this section are extended inwardly as at 17 eccentrically to the center of the said section. Between said inwardly extended portion of the flange 15 and the main body of said flange exit openings 18 are provided in successive position, and between the main part of the flange 15 and the inwardly extended portion 17 air passages 19 are provided. Adjacent to the exit openings of the air passages 19 horizontally disposed slots 20 are formed in the main body of the flange 15, and are adapted to receive studs 21 carried by inwardly bent portions 22 of the flange 16 on the section 14, to thereby lock the sections 13 and 14 of the air chamber in removable engagement with each other. Between the inwardly bent portion 22 of the flange 16 and the main body of said flange exit openings 23 are also provided, which align with the exit openings of the air passage 19 of the section 13 when the two sections 13 and 14 are united. The said lower section 14 of the air chamber is also formed with a central opening or aperture 24, which will be surrounded by a suitable gland or air tight packing as desired.

Extending centrally through the device is a shaft 25 having a belt pulley 26 keyed to the upper end thereof, the said shaft passing downward through the sleeve 11, the tube 9, the opening in the lower section 14 of the air chamber and into the step 4 in the bottom of the tub or body 1. By means of the set screw 12, the air feeding device is securely fastened to the shaft 25 and rapidly revolved thereby through the medium of the belt pulley 26 which is adapted to be encircled by a suitable belt from a motor or other suitable power. The upper end of the shaft 25 may be suitably supported in a framework 27 located above the churn.

The air drawn inward through the tube 9 by the rapid rotation of the same, will be carried down into the air chamber and forced out of the peripheral openings thereof centrifugally thereby striking the cream and thoroughly penetrating the same will break the particles or globules thereof and force it against the side of the tub or body. The whirl or motion of the cream will be greatly increased, and the tendency will be to drive the same outward from the air chamber, and against the breakers 5 by which operation the process of making butter is exceptionally facilitated and quickened.

By means of the adjustability of the air-chamber and the tube on the shaft which passes centrally through the same, the said air-chamber and tube may be raised or lowered to adjust the same to a larger or smaller amount of cream or milk.

Having thus described the invention, what is claimed as new is—

1. In a churn, the combination of a body of cylindrical form, and breakers removably secured to the inner side thereof in diagonal

lines approximating a vertical plane and having slots in the rear portions of the same intermediate of the length thereof, the lower ends of each the said breakers being tapered to form a close fitting at the bottom of the body and avoid too much projection, a series of eyes secured to the inner sides of the said body, and catch-pins depending from the upper portions of said slots in the breakers and adapted to removably engage the aforesaid eyes, said pins being so arranged as to closely hold the breakers against the inner side of the said body, substantially as described.

2. In a churn, the combination of a body and a centrifugal air feeding device mounted therein and consisting of a tube with an upper open end, and having an air chamber at the lower end thereof constructed of separable sections with peripheral openings therein, situated diametrically opposite to each other and having a part thereof arranged in each section in such manner as to align and open in reverse directions, substantially as described.

3. In a churn, the combination of a centrifugal air feeding device having a tube open at its upper end and formed with an air chamber at its lower end having peripheral air openings, and interlocking pins and slots in the opposite parts thereof, and a shaft extending centrally through said air feeding device and secured thereto for the purpose of rotating the same, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NEWTON MONDAY.

Witnesses:

THOMAS R. STURGEON,  
EZRA W. SHINN.