C. Matheny,

Churn.

No. 109,919. Patented Dec. 6, 1870.

Fig. 1.

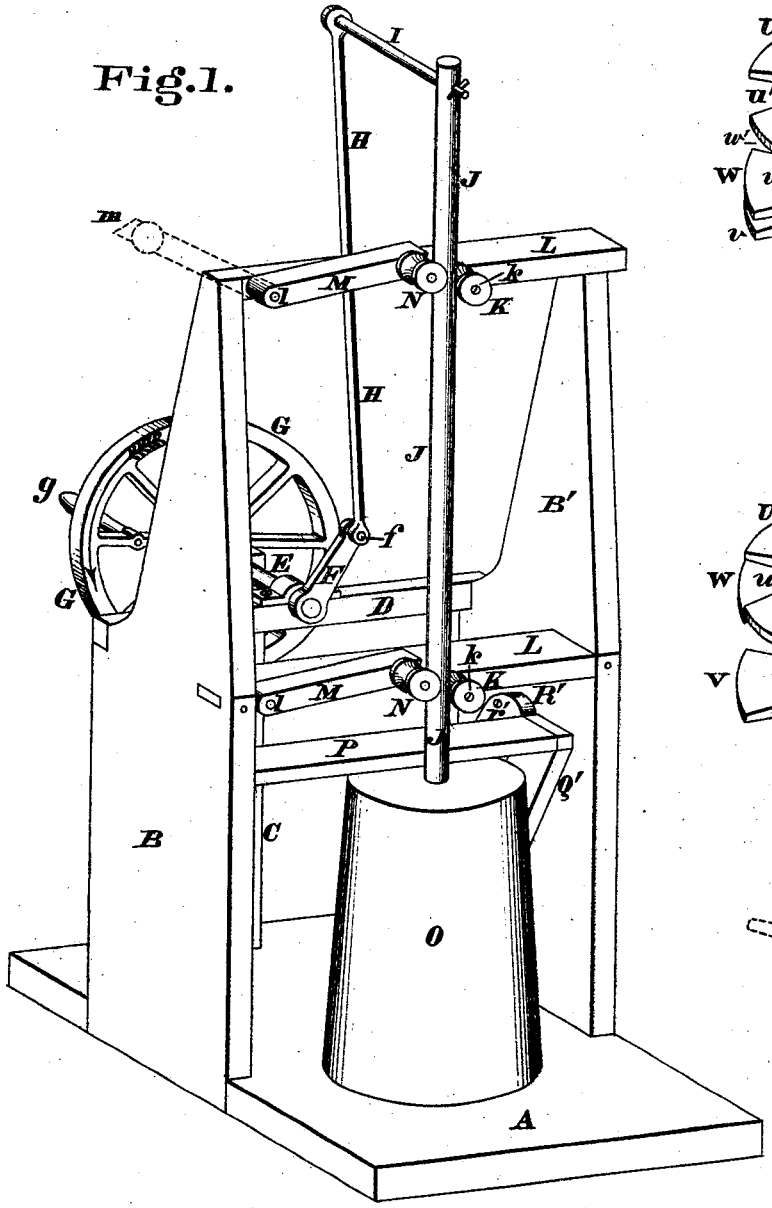


Fig. 2.

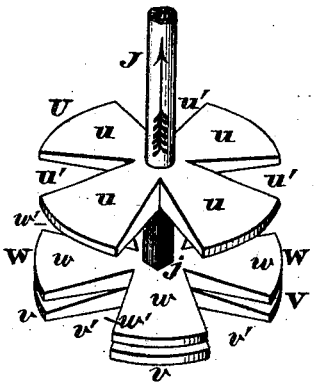


Fig. 3.

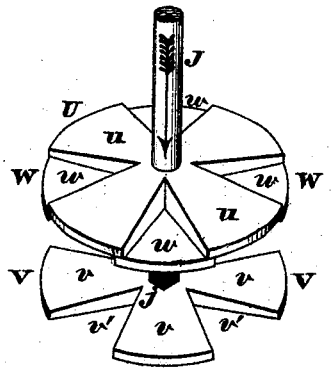


Fig. 4.

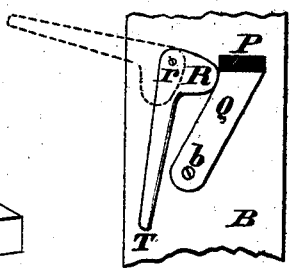
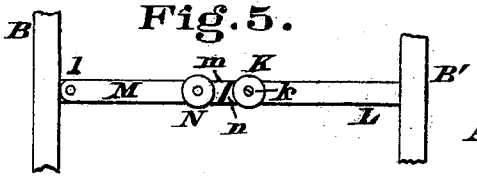


Fig. 5.



Attest.

Jas. A. Layman,

Wm Bauer

INVENTOR.

C. Matheny

By Burroughs & Co

atty

United States Patent Office.

CHELTON MATHENY, OF GREENSBURG, INDIANA.

Letters Patent No. 109,919, dated December 6, 1870.

IMPROVEMENT IN CHURNS.

The Schedule referred to in these Letters Patent and making part of the same.

I, CHELTON MATHENY, of Greensburg, Decatur county, Indiana, have invented new and useful Improvements in Churns, of which the following is a specification.

Nature and Objects of the Invention.

This invention relates to the class of devices in which the churn proper is secured to a suitable frame-work that also supports the fly-wheel, crank-shaft, pitman, and other devices for imparting a vertical reciprocating movement to the churn-dasher.

The first part of my improvements relates to superior friction-roller guides for the dasher-rod, and consists in journaling one or more of the aforesaid rollers in a gravitating arm, that is pivoted to the frame-work in such a manner as to permit of it being thrown back so as to insert the dash-rod between the rollers, and this provision of pivoted and gravitating arm also allows dash-rods of various diameters being used in the same frame-work.

The second part of my improvements relates to a swinging frame, which is operated by eccentrics in such a manner as to secure churns of various heights within the main frame of the machine.

The third part of my improvements relates to the dash proper, whose construction and operation will be hereafter fully described.

General Description with reference to the Drawing.

Figure 1 is a perspective view of a churn-power embodying my improvements.

Figure 2 is a perspective view, showing the position of the different members of the dash when the dash-rod is elevated.

Figure 3 is a perspective view, showing the position of the aforesaid members when the dash-rod is depressed.

Figure 4 represents the swinging frame and its eccentric.

Figure 5 is an elevation of a portion of the main frame, showing two of the guiding-rollers, with the dash-rod removed from between them.

A represents the base or bed-plate of the machine, from which there projects vertically, on two opposite sides, the principal members B B′ of the frame-work which supports the operative mechanism.

Journaled in a post, C, and also in the brace D, is the driving-shaft E whose inner end is provided with a crank, F, and whose outer end carries a fly-wheel, G, having a winch, *g*, by which it is rotated.

Attached to the wrist-pin *f* of crank F is one end of a pitman, H, whose other end is secured to a bar, I, that is connected to the dash-rod J.

In order to confine the dash-rod to a vertical path, and at the same time diminish the friction, I provide rollers, K, which rotate upon bearings, *k*, that project from the fixed cross-beams L of the main frame.

These bearings should be screw-threaded, or otherwise arranged so as to permit the ready removal of the rollers for the purpose of placing the dash-rod in position; but when it is desired to use the machine for operating churns whose dash-rods are of various diameters, I prefer the following arrangement of parts:

Pivoted to the fixed beams L, as at *l*, are gravitating arms, M, whose free ends have journaled within them anti-friction rollers, N, which are maintained in contact with the dash-rod by the weight of said arm.

By this means the dash-rod can be readily inserted between the rollers, as it is only necessary to throw back said gravitating arm, as indicated by dotted lines in fig. 1, place the rod in position, and restore said arms to their original condition.

This arrangement of gravitating arm and roller not only admits dash-rods of various diameters, but it also automatically adjusts itself to any irregularities in said rod or rods.

These arms are prevented dropping too far by their inclined ends *m* being brought in contact with shoulders *n* of the beams L, as shown in fig. 5.

The churn-barrel O is secured in position by a swinging frame, which consists of a board, P, that is secured to the free ends of two arms, Q Q, which latter are pivoted at *b* to the uprights B B′.

These arms are operated so as to bring the board P to bear firmly upon the top of churn-barrel O, by the eccentrics R R′, which are pivoted to the uprights B B′ at *r r′*.

These eccentrics are operated by levers T, and, when said levers are elevated to the position shown by dotted lines in fig. 4, the devices P Q Q′ can be thrown back, so as to permit the withdrawal of the churn from under the board P.

The arrangement of adjusting devices P Q Q′ R R′ greatly enhances the value of my machine, as it enables churns of various heights being employed without altering any part of the apparatus.

The dash of the churn is composed of an upper member, U, and a lower one, V, both of which are immovably secured to the dash-rod or handle J, and said members consist of radial blades *u v*, having openings *u′ v′* between them. These dashers are attached to the rod in such a manner that the openings *u′* of the upper one is directly above the blades *v* of the lower one.

Located between the upper and lower dash is an intermediate and movable one, W, having arms *w* and openings *w′*, which are in the same plane as the arms and openings of the lower member V.

This intermediate dash is adapted to play up and

down between the ones U and V, whenever the rod J is depressed and elevated, as shown in figs. 2 and 3, and its rotation is prevented by the non-circular portion *j* of said rod. When the rod J is elevated, as shown in fig. 2, the intermediate dash W drops, and is supported upon the lower one V, thereby leaving the openings *u'* unobstructed, so as to avoid lifting the entire body of cream; but when said rod is depressed, as shown in fig. 3, the dash W ascends and closes the said openings *u'*. In this elevated position of dash W the cream cannot pass through the openings *u'*, but is compelled to circulate between the outer edge of the dash and the inner side of the churn-barrel, which act causes a thorough agitation of the cream, and enables the production of a superior article of butter with very little exertion on the part of the operator.

The peripheries of all the rollers should be grooved, in order that they may fit more snugly around the dash-rod J.

Claims.

I claim as new and of my invention—

1. In combination with the described elements A B B' E F *f* G *g* H J K *k* L, the pivoted and gravitating arm M, with its roller N, for the purpose herein explained.

2. The pivoted yoke or loop P Q Q' and the eccentric clamps R *r* R' *r'*, constructed, combined, and arranged as represented and described, for the purpose set forth.

3. The dash apparatus J *j* V *v v'* U *u u'* W' *w w'*, when arranged to operate as herein explained.

In testimony of which invention, I hereunto set my hand.

CHELTON MATHENY.

Witnesses:

WM. BAUER,

JAMES H. LAYMAN.