J. NEAL.

Churn.

No. 65,417. Patented June 4, 1867.

Fig. 1.

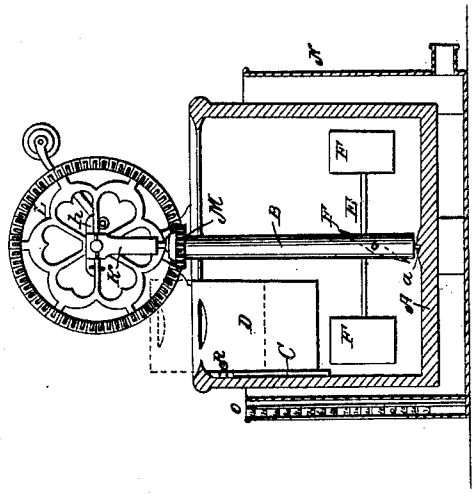


Fig. 3.

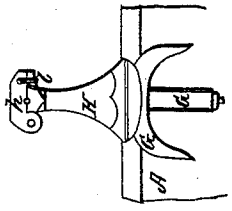
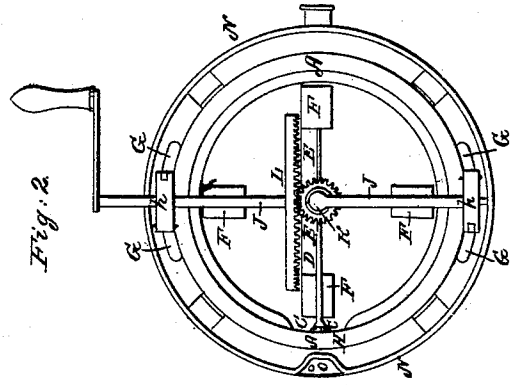


Fig. 2.



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JOHN NEAL, OF SHEBOYGAN, WISCONSIN.

Letters Patent No. 65,417, *dated June* 4, 1867.

CHURN.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN NEAL, of Sheboygan, in the county of Sheboygan, and State of Wisconsin, have invented a new and useful improvement in Churns; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1, vertical longitudinal section of my churn.

Figure 2 is a plan of the same.

Figure 3 is a side elevation of one of the bearing-blocks or posts supporting the bearings of the main shaft.

My invention consists, first, in adapting revolving dashers, operated by mechanism, to an earthen or stone-ware vessel; second, in the device for stripping the surface cream and turning it back upon the dasher-arms; third, in the manner of connecting the metallic bearing-blocks to the earthenware vessel in which the cream is churned; fourth, in the construction of the bearing-block.

That others may understand the construction and operation of my invention, I will particularly describe it.

A is the earthen vessel, which I prefer to use for the purposes of a churn, because it is non-absorbent, and easily cleansed. In the centre of the bottom is a protuberance, *a*, having a smooth circular depression in its middle, which serves as a step for the dasher-shaft B, and at one side, near the top, is made a dove-tailed recess by two projecting ribs, C C, and into this recess is fitted one edge of the sliding stripper D. The dasher-shaft B is provided with four arms, E, projecting laterally from said shaft near its lower end, and at the extremity of each of said arms is a small square-faced dasher, F. Upon each side of the vessel A is an ear, G, through which is made a vertical hole for the reception of the bearing-posts H, the lower ends of which are provided with shanks of suitable size and form. The posts are secured in place by screw-nuts at their lower ends. At the top of the post H is a hinged cap, *h*, pivoted at one of its ends to one side of the post, and secured to the post at its other or free end by a swinging stirrup, *i*. The bearing for the crank-shaft is half in the top of the post and half in the lower side of the cap, as shown in fig. 3. The crank-shaft J has its bearings under the caps *h*. At its centre, or midway between its bearings, is the pendent stud K, the shaft J passing loosely through a proper orifice in its upper end, and being retained in its proper position on said shaft by pins, or their equivalents, inserted through the said shaft. The pendent stud K has a hole bored in its lower end coincident with its axis. Into this hole is inserted the journal or pivot at the upper end of the shaft B, the journal and hole being of sufficient length to give lateral support to each other. Upon the crank-shaft J is the bevel driving gear-wheel L, which meshes with the cogs of its pinion M at the upper end of the shaft B, so that as the crank-shaft J is rotated the dashers F are also rotated. I prefer to use small dashers, located near the bottom of the churn, and to provide a stationary piece, D, which I call a stripper, because it strips, or, as it were, scrapes off the surface cream as the mass revolves within the vessel, and thus adds to the agitation, and causes the part thus stripped off to flow back upon the dasher-arms. The stripper D is adjustable vertically between the ribs C C, and should be so set as to dip into the cream but a short distance, say from one-fourth to half an inch. The stripper is retained in its proper position by friction-corks R placed in the outer edge.

In converting cream into butter, it is necessary, in order to produce the best result, that certain conditions should be observed. A uniform temperature of about 60° F. should be maintained, and the agitation, though brisk, should not be violent. The minute sacks containing the butter globules should be obliterated by friction rather than by concussion; they should be caused to wear away rather than burst by violence. This being the case, small dashers will be more likely to succeed satisfactorily than larger or complicated devices that will produce a violent agitation. And in order to secure the desired temperature, I provide the jacket N, in the bottom of which are placed pieces of wood, so that the hot or cold water surrounding the churn may have free access below it as well as at its sides. A thermometer, O, is for convenience inserted in the side of the jacket, where it will constantly indicate the temperature of the enclosed water. The earthen vessel transmits and retains the warmth of the bath much more uniformly than will any other material. When it is required to cleanse the churn, the operative parts may all be readily removed by turning back the caps *h*, when the shafts B and J may be taken away, and the stripper D may be withdrawn from between the ribs C, leaving the interior of the churn unobstructed.

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

The combination of the earthenware vessel A and the metallic bearing-posts H, substantially as set forth and shown, for the purpose of adapting revolving dashers operated by gearing to an earthenware churn.

In combination with the dashers F, the stripper D, substantially as and for the purposes set forth.

In combination with the posts H and earthen vessel A, the hinged cap *h*, constructed and operated substantially as set forth.

Connecting the bearing-posts H to the earthenware vessel A by passing a shank of the post through a vertical hole in a suitable lug or projection, and securing said shank by a screw-nut, or its equivalent, substantially as set forth.

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Witnesses:

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