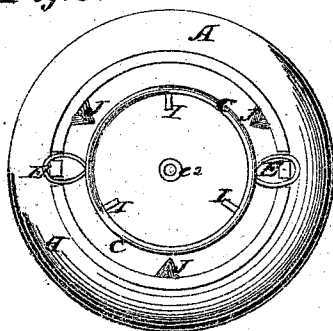


PATENTED AUG 22 1871
Eli Willcox. Churning App^y

Fig. 1.



P. C. Dieterich
Wm. H. L. Smith.

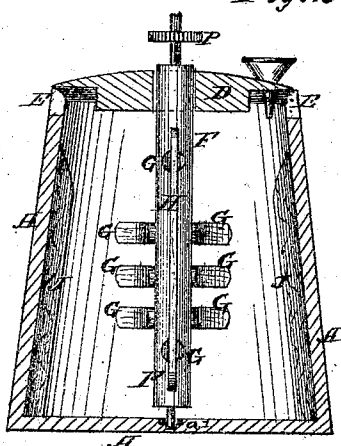


Fig. 2.

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Wm. L.
Attorneys.

UNITED STATES PATENT OFFICE.

ELI WILLCOX, OF HAMBURG, IOWA.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. 118,320, dated August 22, 1871.

To all whom it may concern:

Be it known that I, ELI WILLCOX, of Hamburg, in the county of Fremont and State of Iowa, have invented a new and useful Improvement in Churning Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 is a detail vertical section of my improved churning apparatus. Fig. 2 is a detail sectional view of the same, the inner case being removed. Fig. 3 is a detail top view of the churn-body, the cover and operating mechanism being removed.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved churning apparatus which shall be simple in construction, easily operated, conveniently cleaned, and effective in operation, doing its work quickly and well; and it consists in the construction and combination of various parts of the apparatus, as hereinafter more fully described.

A represents the outer case or body of the churn, which may be supported upon legs B if desired. C is an inner tin case, made of a somewhat less diameter than the outer case A, and provided with short feet c^1 upon its bottom to support the case C at a little distance above the bottom of the outer case A, thus forming a space all around between the cases A C to receive hot or cold water, as the case may be, for tempering the milk or cream in the inner case C. In the center of the bottom of the case C is formed a step, c^2 , to receive the pivot of the dasher-shaft. The step c^2 enters a recess or step, a' , in the center of the bottom of the outer case A, and thus prevents the lower end of the inner case C from moving about upon the bottom of the case A. D is the cover, which is rabbeted around its lower edge, so that its middle part may project into the mouth of the inner case C, and thus serve as a cover to the said inner case at the same time that its rabbeted edge rests upon the upper edge of the outer case A, and thus covers the said outer case securely. To the sides of the upper end of the inner case C are pivoted rings E, which drop into slots in the upper edge of the outer case A to prevent the upper end of the inner case C from moving about when the churning is being done. The rings E also serve as handles

for convenience in handling the case C. F is the dasher-shaft, to the lower end of which is attached or upon it is formed a pivot, which works in the step or recess c^2 in the bottom of the case C or in the step or recess a' in the bottom of the case A when the inner case is not used. To the shaft F are attached cross-bars or arms G, to the ends of which are attached vertical bars or beaters H, which, as the dasher-shaft F is revolved, throws the milk against the sides of the churn. To the sides of the case C are attached vertical ribs I, against which the milk strikes as it is thrown outward by the dasher, and which break up the currents and throw the milk into violent agitation, bringing the butter in a very short time. J are vertical ribs attached to the sides of the outer case A, and which operate in the same manner as the ribs I when the inner case C is not used. The upper end of the dasher-shaft F passes up through a hole in the center of the cover D, and upon its upper end is formed or to it is attached a pivot or journal, which enters and works in a socket in the cross-bar K, which is rigidly attached to the upper ends of the arms L, the lower ends of which are inserted in keepers or sockets M attached to the sides of the case A, where the said arms may be detachably secured in place by pins or other convenient means. To the upper and lower sides of the bar K are attached or upon them are formed flanges k' , which enter grooves in the bars N placed above and below the bar K, and which are connected and held in place upon the bar K by cross-bars attached to them, as shown in dotted lines in Fig. 1. To the lower sliding bar N is attached a toothed rack, O, the teeth of which mesh into the teeth of the small gear-wheel P, attached to the upper end of the dasher-shaft F or to the journal of said shaft. The sliding bars N may be operated to operate the dasher by means of handles Q attached to the upper bar F; or, if desired, the said sliding bars N may be operated by a lever, R, connected with the lower bar N by a connecting bar, S, one end of which is pivoted to the said bar N and the other end of which is pivoted to the said lever R. The lower end of the lever R is pivoted to the lower part of the body A, as shown in Fig. 1.

The apparatus may be operated by hand or power, as may be desired or convenient.

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

1. An improved churning apparatus, consist-

ing of the arms L, bar K, sliding bars N, toothed rack O, gear-wheel P, dasher-shaft F, dasher G H, and ribbed case or body A J, whether the inner case C I be used or not, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

2. The combination of the arms L, bar K, slid-

ing bars N, toothed rack O, gear-wheel P, dasher-shaft F, dasher G H, inner ribbed case C I, and outer ribbed case A J with each other, substantially as herein shown and described, and for the purpose set forth.

Witnesses:

R. K. CRANDAL,
C. H. WYNN.

ELI WILLCOX.