P. EMBREE.

Butter-Worker.

No. 167,084. Patented Aug. 24, 1875.

Fig. 1.

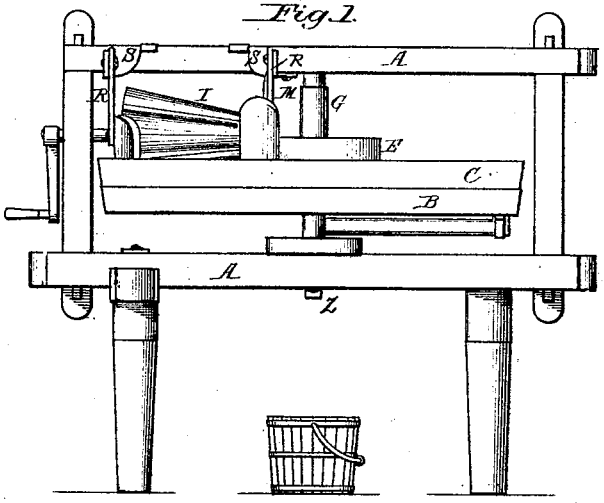


Fig. 2.

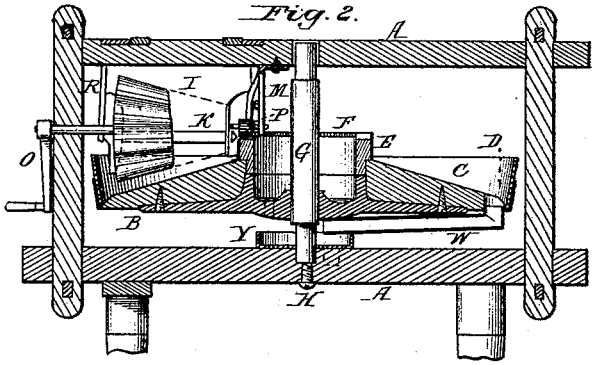
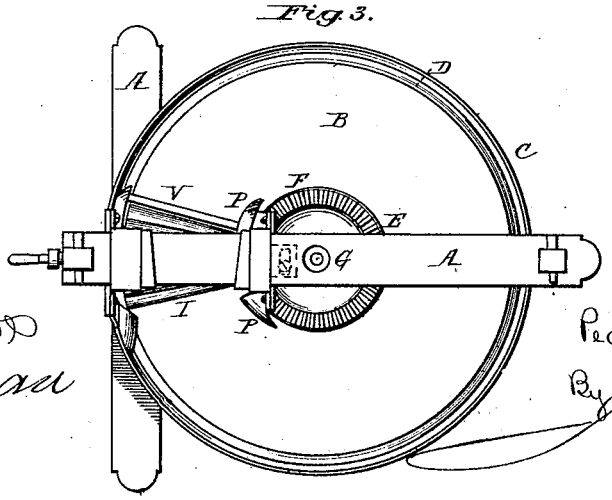


Fig. 3.



Witnesses:

J. L. Norris

B. Hassan

Inventor:

Pearson Embree

By James L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

PEARSON EMBREE, OF WEST CHESTER, PENNSYLVANIA.

IMPROVEMENT IN BUTTER-WORKERS.

Specification forming part of Letters Patent No. **167,084**, dated August 24, 1875; application filed July 8, 1875.

To all whom it may concern:

Be it known that I, PEARSON EMBREE, of West Chester, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Butter-Workers, of which the following is a specification:

This invention relates to certain improvements in that class of machines for working butter in which a revolving roller, in combination with a rotating table, is employed to express the buttermilk and fluid portions from the butter.

The object of this invention is to produce a machine in which the butter, while being worked, will be automatically thrown up toward the center of the rotating table by the action of the butter-working roller, so as to keep the channel for the buttermilk at the periphery of the table free and clear for the escape of the buttermilk, and thus dispense with the paddles and other devices hitherto used for the purpose; and also to provide for the adjustment of the table with respect to the butter-working roller, for the purpose of regulating the amount of butter carried or thrown up by the action of the roller; and, further, to adjust the butter guides or shields with respect to the table, so as to keep them free from the same, in order to prevent the rubbing or trituration of the butter between the two, which would tend to make the butter oily and unpalatable.

My invention consists, first, in the combination, with a rotating table having a conical face for supporting and carrying the butter, and a central driving gear-wheel, of a fluted conical roller, the two being connected together by means of differential gearing, for the purpose of rotating the same at different velocities, as hereinafter more fully described; second, in the combination, with the rotating table, of a fluted conical roller, journaled at one end in a fixed bearing, and at the other to an adjustable hanger, by which it may be thrown out of the radial line of the table, for the purpose of working the butter toward the center of the same, as hereinafter more fully described; third, in combination with the table and fluted roller, of a pair of butter-guides, suspended from adjustable hangers, by means of which the distance of the same from the table can be regulated, for the purpose of preventing the trituration of the butter, which would render it oily; and, fourth, in the combination, with the butter-guides and rotating table, having a central gear-wheel, of a fluted roller and a discharge-spout leading from the groove constructed on or near the periphery of the table, for discharging the buttermilk.

In the drawing, Figure 1 represents a perspective view of my improved apparatus; Fig. 2, a transverse vertical section of the same, and Fig. 3 a top view of the apparatus.

The letter A indicates a frame-work of wood or other suitable material, in which the various working parts of the apparatus are supported. B represents a conical rotating table or bed rising toward the center, and having a narrow rim, C, and a channel, D, for the buttermilk, at its periphery. To the upper face of said table, around its center, is secured a short cylinder, E, surmounted by a crown-gear wheel, F, whereby is formed a driving gear-wheel and a chamber for collecting the milk that may be thrown toward the center by the action of the rotating table and fluted roller. The table is supported upon a vertical shaft, G, which passes through its center, its lower end being stepped or journaled in the ends of an adjustable set-screw, H, which is secured in the frame-work A, the upper end being loosely journaled in the upper part of said frame-work. I represents a conical fluted roller mounted upon a shaft or axis, K, which is journaled at one end in the frame-work A, and at the other to an adjustable hanger, M, which is adapted to be shifted laterally, so as to throw the axis out of line in a position at an angle to, or obliquely to, the radius of the rotating bed. Said hanger is suspended from the frame-work A by means of a set-screw, N, passing through a slot in said hanger, admitting of ready adjustment of the same. On the outer end of said shaft is mounted a crank, O, by which the apparatus is put in motion, and on the inner end a small pinion-wheel, P, which gears into the crown-wheel F, for the purpose of imparting motion to the table. P′ P′ represent butter-guides suspended at each end of the fluted roller, directly at the front and rear of the same, for the purpose of keeping the butter away from the rim C and the cylinder

E when the machine is in operation, and guiding it properly under the roller. These shields are supported upon adjustable hangers R R, which are secured, by set-screws S S, to the ends of the cross-pieces T T secured to the frame-work A above the table. Said hangers are slotted at their ends, the set-screws passing through said slots, providing a means of adjusting said hangers and the butter-guides, which they carry. Between the front butter-guides is secured a doctor, V, which sits across the front of the fluted roller, for the purpose of clearing the same of any butter which may become attached to the same. The table is provided with a tube, W, leading below from the buttermilk-channel C to a basin, Y, which is provided with an escape-tube, Z, for carrying it off.

To put the machine in operation, the butter is first spread upon the rotating table, and motion is imparted by turning the crank attached to the shaft of the fluted roller. This imparts a slower motion to the rotating table, carrying the butter under the butter-working roller, which, during its revolution, presses the butter at the same time, by reason of its being out of the line of the radius of the table, thus automatically working the butter up toward the center of the table, away from the buttermilk-channel. The corrugations of the roller will form corresponding corrugations in the mass of butter, extending radially along the face of the table, which will form gutters or channels for conducting the buttermilk to the channel around the periphery of the table.

The amount of butter thrown up toward the center of the table will depend upon the distance between the roller and table, and in order to regulate this amount with precision the table is made adjustable by means of the set-screw in which its journal is stepped.

In order to keep the butter-guides clear of the table, so as not to triturate and render the butter oily, the hangers upon which they are suspended may be adjusted or set higher as the table is raised.

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

1. The combination, substantially as hereinbefore set forth, of the rotating table, for supporting and carrying the butter to be worked, having the crown-wheel forming part of the sides of the central milk-collecting chamber, with the fluted conical roller, the table and roller being connected together by gearing, as set forth.

2. The combination, substantially as hereinbefore set forth, of the rotating table having a central gear-wheel, with the fluted conical roller journaled at one end in a fixed bearing, and at the other in an adjustable hanger, as described, whereby said roller may be moved and adjusted from a radial line with respect to the table, for the purpose of working the butter automatically toward the center of the table.

3. The combination, with the rotating table having a central gear-wheel and milk-collecting chamber, of the butter-guides suspended from adjustable hangers at each end of the roller, whereby the said guides can be moved with the roller and the distance between said guides and the table regulated to prevent the trituration of the butter, substantially as described.

4. The combination of the rotating table having the central gear-wheel, the adjustable butter-guides, fluted adjustable roller, and discharge-spout leading from the peripheral groove, substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

PEARSON EMBREE.

Witnesses:
JAMES L. NORRIS,
A. H. NORRIS.