

R. B. DISBROW.
 COMBINED CHURN AND BUTTER WORKER.
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956,310.

Patented Apr. 26, 1910.

Fig. 2

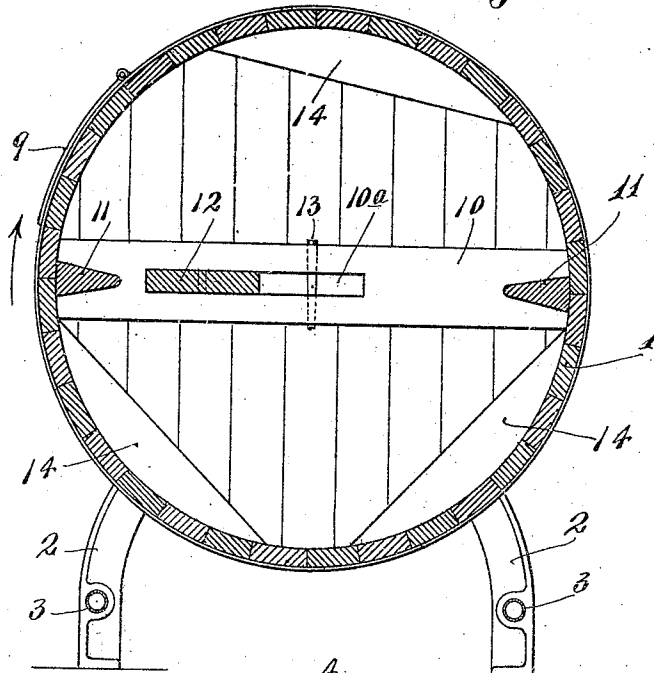
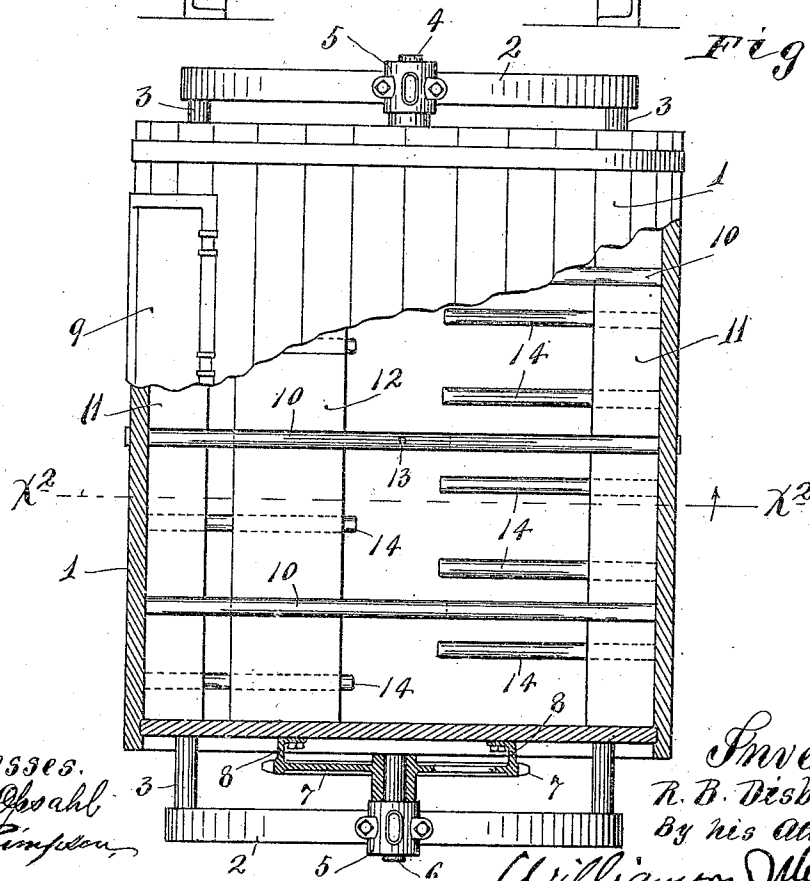


Fig. 1



Witnesses.
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UNITED STATES PATENT OFFICE.

REUBEN B. DISBROW, OF OWATONNA, MINNESOTA.

COMBINED CHURN AND BUTTER-WORKER.

956,310.

Specification of Letters Patent.

Patented Apr. 26, 1910.

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To all whom it may concern:

Be it known that I, REUBEN B. DISBROW, a citizen of the United States, residing at Owatonna, in the county of Steele and State of Minnesota, have invented certain new and useful Improvements in a Combined Churn and Butter-Worker; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its special object to provide an improved combined churn and butter worker.

To the above ends, the invention consists of the novel devices and combination of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view, partly in plan and partly in horizontal section, showing the improved machine; and Fig. 2 is a transverse vertical section taken on the line $x^2 x^2$ of Fig. 1.

The drum 1, which is of woden construction, is horizontally disposed and is journaled in suitable end bearing brackets 2, which, as shown, are rigidly tied together at their lower portions by tie bars or rods 3. One head of the said drum is provided with a trunnion 4, journaled in a suitable bearing 5 on the upper portions of the adjacent bracket 2, and the other head of the drum is provided with a trunnion 6, journaled in another bearing 5 on the bracket 2 adjacent thereto. The trunnion 6 is shown as directly secured to the hub of a large sprocket wheel 7, having laterally projecting lugs 8, that are bolted or otherwise rigidly secured to the adjacent drum head. The drum is provided with one or more peripheral doors 9 which, of course, are closed when the machine is in action. These doors may be of ordinary or of any suitable construction. The drum may be rotated by a power driven sprocket chain which will be run over the sprocket wheel 7.

The whole novelty of this machine will be found in the interior construction of the drum. Rigidly secured within the drum, and extending diametrically thereof, is a multiplicity of so-called parallel laterally spaced dividing bars 10, set edgewise in

vertical planes, there being, as shown, three of said bars, although this number may be varied. A pair of diametrically opposite lifting flights 11 extend from end to end of the drum, radially inward from the cylindrical shell thereof and alined with the longitudinal axis of the dividing bars 10. The dividing bars 10 are provided with longitudinal extended slots 10^a, in which an adjustable table board 12 is mounted with freedom for edgewise adjustments, diametrically of the drum and longitudinally of the said bars 10. The slots 10^a are so extended that the table board 12 may be moved to a central position in the drum or may be moved to one side of the center of said drum, adjacent to a cleat 11 which is nearest to a door 9, as shown in the drawings. The table board is adapted to be secured in its central position by a pin 13 passed through the same and through one of the dividing bars 10.

Secured to the inner surface of the cylindrical shell of the drum are three sets of laterally spaced, circumferentially extended ribs 14. The edges of these ribs 14 and the edges of the dividing bars 10 are preferably rounded or somewhat sharpened so that they will more readily cut the butter in the butter working action.

In churning, the so-called table board 12 will preferably be moved to one side of the axis of the drum, as shown in the drawings, so that it will have a greater agitating action on the cream. In the butter working action, said table board should be set in its central position so as to leave open passages for the butter between both edges thereof and the two lifting flights 11. The drum may be rotated in either direction, both in the churning or in the butter working action, but in the butter working action, it preferably should be rotated in the direction of the arrow mark adjacent thereof, in Fig. 2. In working the butter, the butter will be raised by the flights 11 and by the dividing bars 10, and the latter will cut their way into the butter, thus insuring thorough commingling of the mass of butter. The butter, falling upon the ribs 14, will be found divided thereby and hence will be thoroughly worked. When the butter has been properly worked and the salt mixed therewith, it may be collected by adjusting the table board 12 into its eccentric position, shown in the drawings; and then the collected butter may be raised

and supported in a position where a ready access may be had thereto, when the door 9 is opened, while the drum stands in the position shown in Fig. 2.

5 This machine, while extremely simple in construction, is highly efficient, both as a churn and butter worker. This machine is also well adapted for use as a curd mixer or salter in the manufacture of cheese.

10 What I claim is:

1. In a machine of the kind described, a rotary, horizontally disposed drum, provided within with approximately diametrically extended dividing bars, and a coöperating
15 lifting flight, substantially as described.

2. In a machine of the kind described, a rotary, horizontally disposed drum, provided within with a multiplicity of approximately diametrically extended dividing bars, and
20 coöperating lifting flights located at the ends of said bars, substantially as described.

3. In a machine of the kind described, the combination with a horizontally disposed, rotary drum, provided within with a multi-
25 plicity of laterally spaced, approximately diametrically extended dividing bars, and a table board carried by said dividing bars for the coöperation of said lifting flight, sub-
stantially as described.

30 4. In a machine of the kind described, a horizontally disposed, rotary drum, provided within with a multiplicity of laterally spaced, approximately diametrically extended dividing bars, a lifting flight at one
35 end of said bars, and a table board carried

by said dividing bars and free for adjustments from a position at the axis therefrom into a position adjacent to said lifting flight, substantially as described.

5. In a machine of the kind described, the
40 combination with a horizontally disposed, rotary drum, provided within with a multiplicity of laterally spaced, approximately diametrically extended dividing bars, of a
45 lifting flight at one end of said bars, a table board carried by said bars for coöperation of said flight, and a multiplicity of seg-
mental ribs secured to the shell of said drum and extended circumferentially thereof, sub-
stantially as described. 50

6. In a machine of the kind described, the combination with a horizontally disposed, rotary drum, provided within with a multi-
plicity of laterally spaced, approximately
55 diametrically extended dividing bars, lifting flights at the ends of said bars, a table board carried by said dividing bars and ad-
justable from a position at the axis of the drum into a position adjacent to one of said
60 lifting flights, and several series of laterally spaced ribs, secured to the shell of said drum and extended circumferentially thereof, sub-
stantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

REUBEN B. DISBROW.

Witnesses:

HARRY D. KILGORE,
F. D. MERCHANT.