

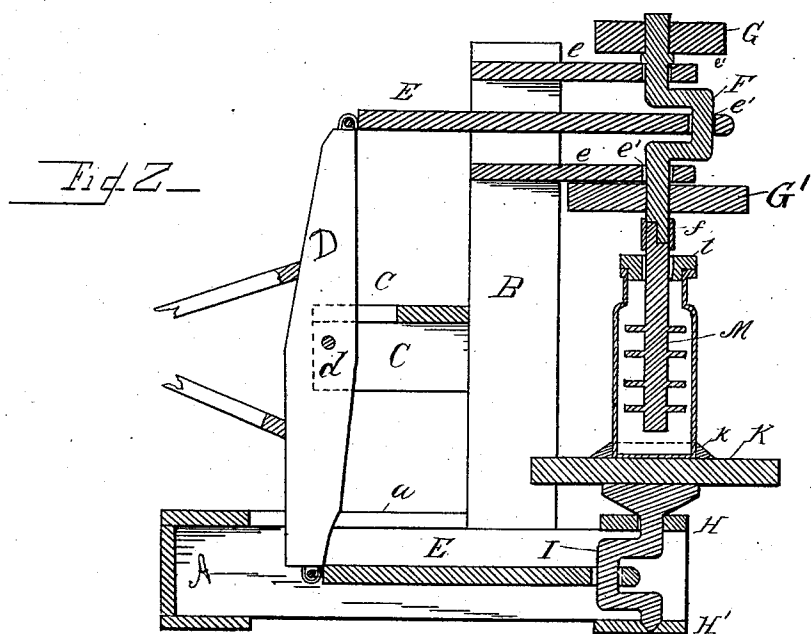
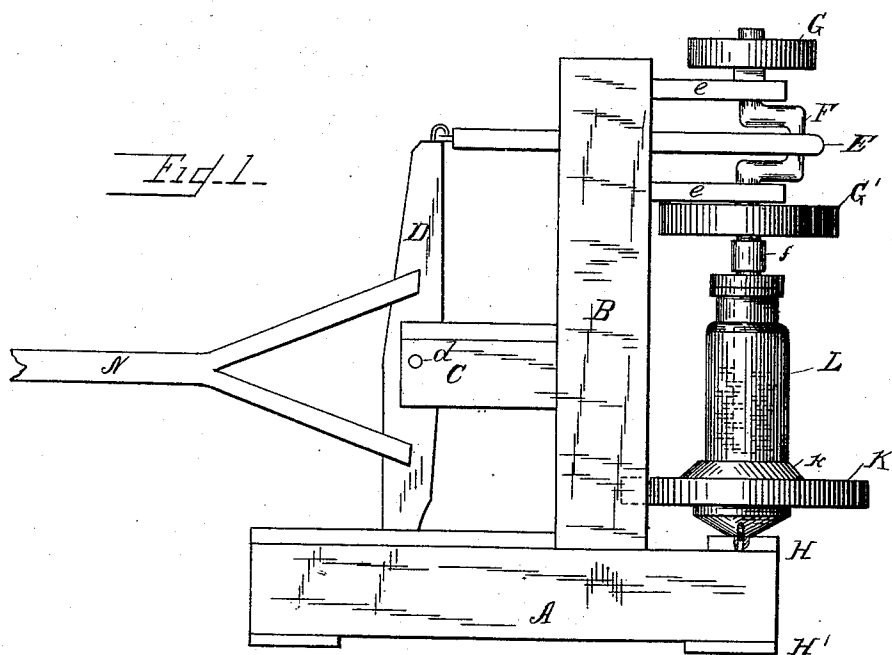
(No Model.)

G. A. STAFFORD.

ROTARY CHURN.

No. 349,371.

Patented Sept. 21, 1886.



Witnesses

J. A. Fauberschmitt

R. E. Fodhunter

Inventor
G. A. Stafford

By his Attorney Wm. H. Bates

UNITED STATES PATENT OFFICE.

GEORGE A. STAFFORD, OF DESDIMONIA, TEXAS.

ROTARY CHURN.

SPECIFICATION forming part of Letters Patent No. 349,371, dated September 21, 1886.

Application filed July 17, 1886. Serial No. 208,248. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. STAFFORD, a citizen of the United States, residing at Desdimonia, in the county of Eastland and State of Texas, have invented certain new and useful Improvements in Rotary Churns; 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

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appertains, to make and use the same.

This invention relates to that class of churns known as "rotary churns," and has for its object to more thoroughly and expeditiously break the globules of the cream or milk and

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release the butter particles therefrom in churning, so as to produce butter very quickly with a minimum expenditure of labor and time; and to this end the invention consists in the novel construction and arrangement of the several parts thereof, as will be hereinafter more particularly described, and specifically pointed out in the claims.

In the accompanying drawings, to which reference is made, and which fully illustrate my invention, Figure 1 is a side elevation, and

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Fig. 2 a sectional view of the same.

A represents a hollow rectangular platform, upon which is cut out at the top and closed portion a slot, *a*. Through this slot *a* plays the lower end of a centrally-pivoted "walking-beam" or lever, which will be hereinafter referred to.

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Upon each side of the platform A, and secured in any suitable manner at their lower ends near the front thereof, are two standards, B B, to the rear of which, at right angles to the same, is secured an upper and smaller platform, C, having cut thereon at its rear end a slot, *c*, the slots *c* and *a* on the platforms C and A being in alignment with each other, whereby I am enabled, by means of a walking-beam or lever, D, to give a rotary motion to the dashers and churn-body simultaneously in opposite directions. This walking-beam D is pivoted

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and has its fulcrum at *d* in the rear part of the platform C, playing in the slot *c* in a manner similar to the lower end of the walking-beam D in the slot *a* of the platform A.

E E are two pitman-rods, each being connected at its rear end to the walking-beam by means of eyes or staples secured therein, and

staples or eyes secured in each end of the walking-beam or lever D.

Secured between the standards B B, near their upper ends are two brackets or pieces, *e e*, projecting in front or forwardly of the standards B B, the front ends of each having bored therein two holes, *e' e'*, said holes being in alignment with each other, and through which the ends of a crank-shaft, F, connecting the forward end of the upper pitman-rod are loosely

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journaled.

Secured to the upper and lower ends of the crank-shaft, and upon the outside of the brackets *e e*, are two balance-wheels, G G', the balance-wheel G being a little smaller in diameter than that of G', secured to the lower end of the crank-shaft F, these wheels serving the purpose of balancing and steadying the motion of the dasher.

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Journaled loosely in bearings in an upper and lower cross-bar, H H', in front of the platform A, is another crank-shaft, I, connecting the front end of the lower pitman-rod E to the lower end of the walking-beam D, the connection being similar to that of the upper pitman-rod. Secured upon the upper end of the crank-shaft I is another and lower balance-wheel, K, still larger in diameter than those previously described. The weight of this balance-wheel being just equal to the weight of the upper balance-wheels, gives an equal and corresponding uniform steady motion to a churn-body, as the upper and smaller balance-wheels do to the dasher. The lower balance-wheel, K, has secured upon its upper face and center a flange, *k*, within which is stepped or placed the churn-body L, having a cover, *l*, and within which body is placed the dasher M, the upper end or rod of which is connected and disconnected to the lower end of the upper crank-shaft, F, by means of a thimble, *f*, by means of which the dasher-rod is securely held when connected to the lower end of the upper crank-shaft, as clearly shown in Figs. 1 and 2 of the drawings.

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The upper front cross-bar, H, of the platform A is made in two parts, one stationary and the other removable, or it can be made as a whole, as shown in the drawings, that part which is removable being held in place upon the platform by means of suitable pins passing through

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holes in each end, the pins being withdrawn when it is deemed necessary to remove the churn-body for refilling the same with cream, or for emptying the contents of the churn when butter is produced, or for cleaning, &c., as occasion requires.

A bifurcated arm or handle, N, is detachably secured to the center of the walking-beam by means of pins or in any suitable manner.

10 If preferred, a hand-hold may be secured to or cut out in the upper end of the walking-beam, by which to operate it in lieu of the handle.

The operation is as follows: The body of the churn being sufficiently filled with cream for churning, it is put in its proper place upon the lower balance-wheel, the bottom fitting snugly down within the flange upon the center of the wheel, and the upper end of the dasher-rod being connected by means of the thimble to the lower end of the upper crank-shaft. The churn-body and dasher are then ready to receive the necessary motion, which is imparted to them by the connecting mechanism, which is done through the medium of the handle working "up and down," thus giving each end of the walking-beam an alternating forward and backward stroke, thereby rotating the crank-shafts with which the pitman-rods are connected, thus giving a continuous rotary motion to the churn-body and dasher simultaneously and in opposite directions, agitating the cream thoroughly from all sides and from top to bottom of the churn-body simultaneously, consequently producing butter in a very short time and with but little expenditure of power.

My churn is easily worked, runs lightly, and

is simple in its construction and cheaply manufactured.

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

1. In a churn, the combination of the supporting-frame, the walking-beam pivoted thereon, the crank-shafts journaled in bearings in the rear part of the frame, pitmen connecting the walking-beam with said crank-shafts, a dasher coupled to one of said shafts, and a churn-body carried by the other shaft and surrounding the dasher, substantially as set forth.

2. The combination of the supporting-frame, the walking-beam, two crank-shafts journaled in the rear part of said frame, means for connecting the walking-beam with said shafts, a balance-wheel and dasher carried by one of said shafts, a larger balance-wheel connected to the other shaft, and a churn-body secured to said balance-wheel, substantially as set forth.

3. The combination of the frame A B C, the walking-beam D, pivoted in the front part of said frame, crank-shaft F, carrying balance-wheels G G', journaled in the rear part of said frame, dasher M, coupled to said shaft, crank-shaft I, carrying balance-wheel K, having flange L, the churn L, secured in said flange, and the pitmen B E, substantially as described.

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

GEORGE A. STAFFORD.

Witnesses:

D. H. GRAVES,

C. M. WERLE.