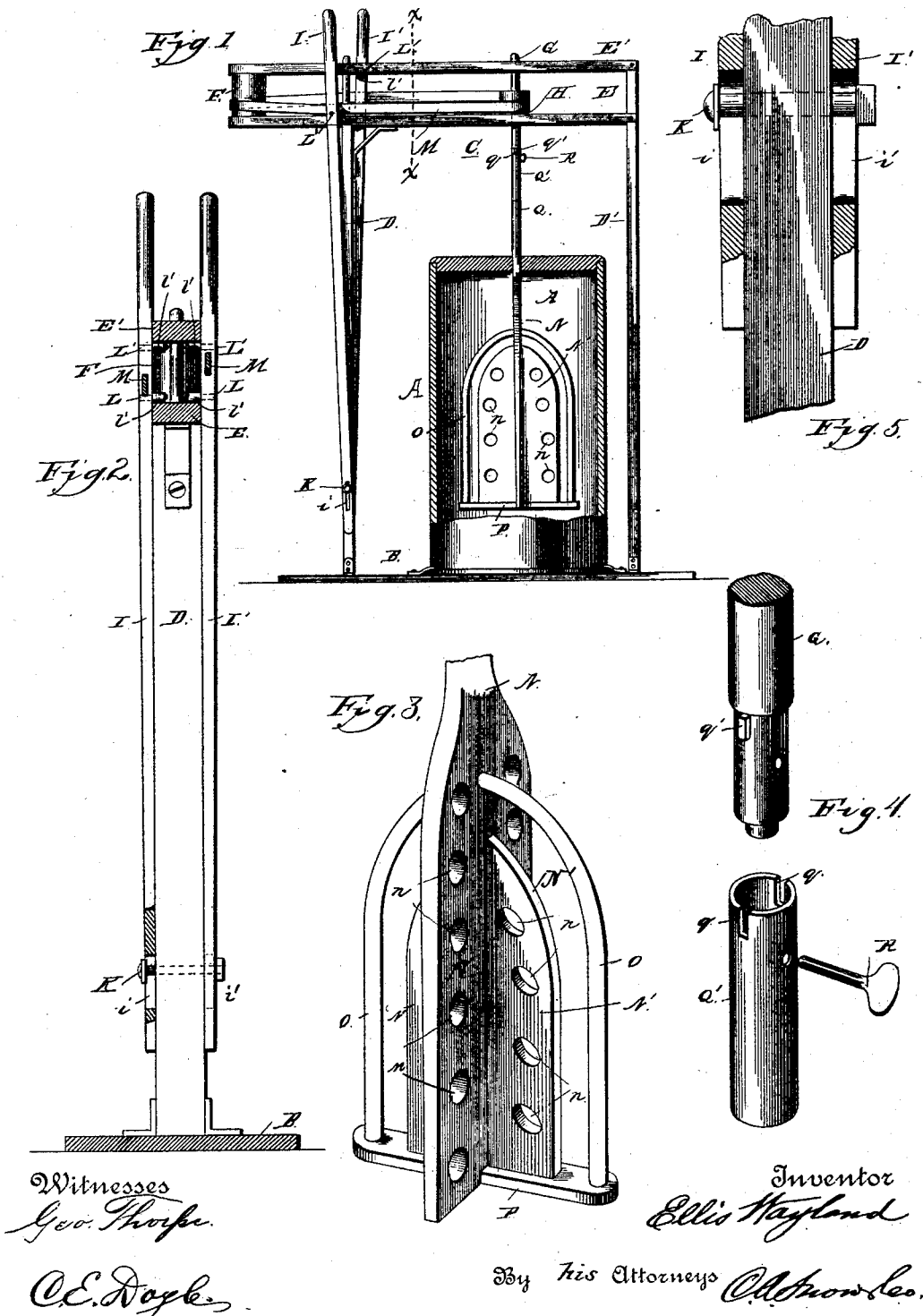


CHURN.

No. 360,636.

Patented Apr. 5, 1887.



UNITED STATES PATENT OFFICE.

ELLIS WAYLAND, OF GEST, KENTUCKY.

CHURN.

SPECIFICATION forming part of Letters Patent No. 360,636, dated April 5, 1887.

Application filed January 20, 1887. Serial No. 224,901. (No model.)

To all whom it may concern:

Be it known that I, ELLIS WAYLAND, a citizen of the United States, residing at Gest, in the county of Henry and State of Kentucky, have invented new and useful Improvements in Churns, of which the following is a specification.

My invention relates to improvements in churns; and it consists in a certain novel construction and arrangement of parts, fully described hereinafter, and specifically pointed out in the appended claims.

The drawings hereto annexed illustrate a churn embodying my improvements, and in which—

Figure 1 is a side elevation showing the churn body or tub in section. Fig. 2 is a section on the line *xx* of Fig. 1. Fig. 3 is a detail perspective view of the dasher. Fig. 4 is a similar view of the coupling for attaching the dasher to the dasher-shaft, with the parts thereof detached. Fig. 5 is a detail sectional view.

Referring to the drawings, in which similar letters denote corresponding parts in all the figures, A designates the ordinary churn-tub placed on the base B of the frame C, between the uprights or standards D D'. Secured to the upper ends of the said standards are the parallel guide-bars E E', which extend some distance beyond the standard D, and between which, at the extreme end, is journaled the hand-pulley F.

G represents the round dasher-shaft journaled in vertical openings in the said guide-bars E E', directly over the center of the removable churn-tub A, and having the circular wheel or windlass H rigidly secured thereto between the said guide-bars.

I I' represent the power levers or handles, having the slots *i i'* in the lower ends, through which passes the bolt K, that secures the lower ends of the levers on opposite sides of the upright D, but allows endwise movement of the said levers or handles by the slots *i i'* sliding on the bolt K. The handles are each provided on the inside with two pins, L L', having friction-rollers *l l'* thereon to extend inwardly between the guide-bars E E' and guide the said handles in a perfectly horizontal motion forward and backward.

It will be seen that as the handles are swung

apart into an inclined position, the upper ends thereof, being guided by the pins between the horizontal bars E E', will remain at the same height, and therefore the lower ends thereof will be raised slightly by the slots *i i'* sliding on the bolt K.

M represents the power-strap, which passes around the pulley F and through transverse openings in the handles I I', and the ends thereof are secured firmly one above the other to the wheel or windlass H, on opposite sides, in such a manner that as the handles are moved back and forth the ends of the said strap will be alternately wound and unwound on the said wheel or windlass, one winding as the other unwinds, thus always keeping the straps taut.

It will be seen that the motion of the upper ends of the handles is always parallel to the length of the strap, which is rigidly secured in the openings in the said handles, and that the windlass will be very effectually rotated alternately in opposite directions, thus similarly moving the dasher-shaft.

To the lower end of the dasher-shaft is secured my improved dasher, having two blades, N N', intersecting at right angles, the blade N being larger than the blade N', and both being provided with perforations *n*. Passing through the upper part of the blade N at right angles thereto, and extending around the blade N' parallel to the outer curved edge thereof, is the bowed cutter O, its lower ends being secured in the transverse flat bar P, that is in turn secured to the bottom of the blade N'. The said dasher is preferably made of wood, and is provided with the short integral shaft Q, having at its upper end the metallic sleeve Q', which fits over the lower end of the dasher-shaft G, the upper edge of said sleeve having the notches *q q* to engage the studs *q'* on the said dasher-shaft G. The pin R is passed through aligned openings in the opposite sides of the said sleeve and in the dasher-shaft G, to firmly and rigidly secure the dasher to the said shaft.

Having thus described the construction of the device, the operation thereof is obvious.

To place the churn-tub in position for use, uncouple the dasher from the shaft G, and after placing the said tub on the base of the frame and securing it from movement, and passing the upper end of the shaft Q through

the opening provided in the lid thereof, close the churn and recouple the dasher to the revoluble shaft as described hereinbefore, and the churn is in readiness for use. The upper ends of the handles are moved back and forth, guided by the friction-rollers moving between the guide-bars, and the dasher-shaft (and consequently the dasher) is revolved rapidly or slowly in opposite directions alternately, producing the desired result in a very short time.

By providing two handles guided horizontally and having the lower ends movably pivoted I am enabled to keep the power-strap drawn very tightly at all points of the swing of the handles, an object unattainable when the lower ends of the handles are journaled on fixed pivots and the upper ends travel in the arc of a circle. Further, I can obtain as long a swing with short handles movably pivoted as I can with long handles secured to a fixed pivot. Further, by making the said handles or levers shorter I am enabled to set the frame lower down, and thus bring the upper ends of the handles within easy reach of a person sitting in an ordinary chair to operate the churn. Further, by providing a dasher having a coupling device, as described, I am enabled to make the frame lower, and consequently stronger, and also can use a lid made in a single piece instead of two, and thus avoid to a great extent the danger of dashing out the contents of the tub.

The herein-described dasher is designed to revolve very close to the bottom of the churn, and the construction thereof is such as to insure the thorough agitation and churning of the said contents of the tub. By making the dasher double instead of single it will be seen that the agitation will be necessarily more violent and regular, and the peculiar construction is such that when the churning is nearly accomplished the butter may be "gathered" into lumps much more easily than with the ordinary shape of dasher.

The entire device is simple and strong in construction, reliable and efficient in operation, and will be found thoroughly adapted to attain the desired result in the best manner.

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

1. In a churn, the combination, with the supporting-frame, of the power-levers having longitudinal slots in their lower ends, a bolt passed through said slots to secure the levers to the frame, the dasher-shaft journaled in the supporting-frame, and intermediate connections between the dasher-shaft and power-levers, the said levers being provided at their upper ends with devices for guiding and causing them to move in horizontal lines, substantially as set forth.

2. The combination, with the uprights and the horizontal guide-bars secured upon the

upper ends of the same, of the power-levers pivotally secured at their lower ends to the opposite sides of one of the uprights and capable of vertical movement on their pivots, friction-rollers journaled upon the inner sides of the power-levers and working between the horizontal guide-bars, the dasher-shaft journaled in the guide-bars, and intermediate connections between the dasher-shaft and the power-levers, substantially as set forth.

3. A churn having the uprights, and the guide-bars secured to the upper ends thereof, the roller F, pivoted between the guide-bars, the dasher-shaft journaled in vertical bearings in the guide-bars between the uprights and having the windlass thereon, the power-levers pivoted on opposite sides of one of the said uprights by a bolt passing through slots in the lower ends of the levers, and the guide-pins on the upper ends of the said levers to operate between the said guide-bars, combined with the power-strap passing through the upper ends of the handles and around the roller F, and firmly secured at the ends to the windlass to alternately rotate it in opposite directions as the handles are moved back and forth, substantially as described, for the purpose set forth.

4. In a churn, the dasher-shaft having studs on its sides, combined with a dasher having a short shaft attached thereto, and provided at the upper end with the sleeve to fit over the lower end of said dasher-shaft, the upper edge of said sleeve having notches to receive the studs on the sides of the said shaft, and the pin to pass through aligned openings in the sleeve and dasher-shaft, substantially as described.

5. The dasher for a churn, comprising a blade, N, a blade, N', at right angles thereto, and a cutter, O, disposed parallel to the peripheral edge of the blade N', the lower ends of the cutter being secured in the horizontal blade or bar P, fastened to the bottom of the blade N', and extending a short distance beyond it on each side, substantially as described.

6. The dasher for a churn, comprising the blades N N', set at right angles to each other, one of which is smaller than the other, and is provided with the cutter O, parallel to the peripheral edge thereof and passing through the larger blade, the lower ends of the said cutter being secured in the projecting ends of the blade P, secured on the under side of the blade N', substantially as and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELLIS WAYLAND.

Witnesses:

ALFRED PARKER,
THOMAS MOORE.