

(No Model.)

Z. A. TAYLOR.
CHURN OPERATING MECHANISM.

No. 567,519.

Patented Sept. 8, 1896.

Fig. 2.

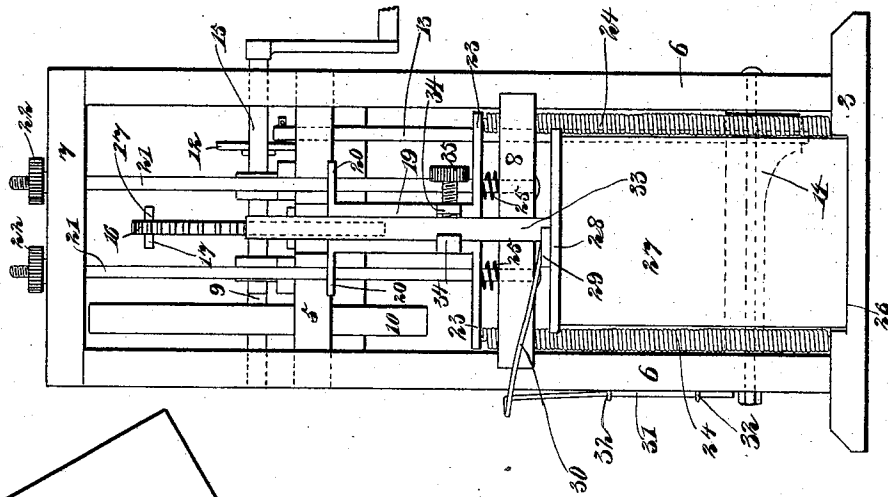
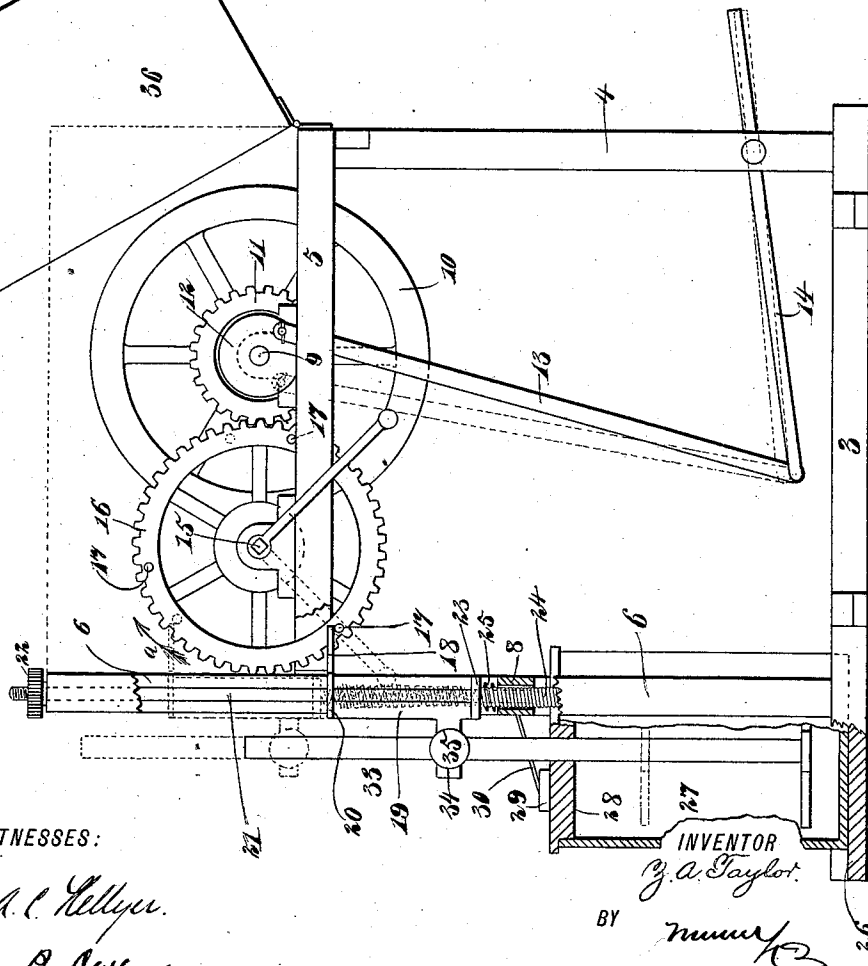


Fig. 1.



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ZACHARIAH A. TAYLOR, OF STEVENSON, ALABAMA, ASSIGNOR OF ONE-HALF TO JOHN M. PORTER, OF SAME PLACE.

CHURN-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 567,519, dated September 8, 1896.

Application filed May 19, 1896. Serial No. 592,164. (No model.)

To all whom it may concern:

Be it known that I, ZACHARIAH A. TAYLOR, of Stevenson, in the county of Jackson and State of Alabama, have invented a new and Improved Churn-Operating Mechanism, of which the following is a full, clear, and exact description.

The object of this invention is to provide superior churn-operating mechanism of that class in which the churn-dasher is vertically movable and provided with means for regularly applying this movement. I attain this end by employing a suitably-mounted drive-shaft geared with a counter-shaft, the gear of the latter carrying a series of pins juxtaposed to a vertically-movable cross-head, so that upon the revolution of the gear the pins will raise the cross-head, springs being provided for quickly returning the cross-head, and the cross-head being in connection with the churn-dasher.

The invention will be fully described hereinafter, and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification; in which similar characters of reference indicate corresponding parts in both figures.

Fig. 1 is a side elevation of my invention, parts being broken away; and Fig. 2 is a front elevation thereof.

In an apparatus constructed after the manner of my invention the base 3 of the frame has two standards 4 rising from its rear end and supporting the rear portion of a table 5, such table extending forwardly and horizontally and being supported at its forward end by two standards 6, such standards rising from the front of the base 3 and extending above the table 5. The standards 6 are connected at their upper ends by a cross-bar 7 and provided at a point below the table 5 with a cross-brace 8.

Revolubly mounted in suitable bearings on the table 5 is a shaft 9, to which a balance-wheel 10 is fixed. The shaft 9 also carries a spur-gear 11, and is provided at its left-hand end with a crank-disk 12, to which a pitman 13 is pivotally connected, the lower end of the pitman being pivotally connected to a treadle 14, pivoted between the rear standards 4. By

these means the shaft 9 is given a continuous rotary movement.

Revolubly mounted on the table 5 and forward of the shaft 9 is a counter-shaft 15, the left-hand end of which is squared so that the shaft may be provided with a crank for operating the machine instead of operating by the treadle 14. Fixed to the shaft 15 is a spur-gear 16, which meshes with the pinion 11, and by which the shaft 15 is driven from the shaft 9.

Projecting oppositely and laterally from the periphery of the gear 16 is a series of pins 17, and the lower forward periphery of the gear-wheel 16 passes through a slot formed in the rearwardly-projecting arm 18 of the vertically-elongated cross-head 19, whereby upon the revolution of the gear 16 in the direction of the arrow *a* in Fig. 1 the pins 17 will engage with the arm 18, respectively, on each side of the slot and raise the cross-head 19. The cross-head 19 is provided at its upper end with two oppositely-projecting ears 20, perforated to respectively receive the guide-rods 21, which pass vertically and parallel with each other through the cross-brace 8 and bar 7, and which are provided at their upper ends with tightening-nuts 22.

The lower end of the cross-head 19 is provided with two ears 23, also projecting horizontally and oppositely and perforated to slidably receive the guide-rods 21. The ears 23 extend beyond the guide-rods 21, and have their outer extremities respectively connected with the retractile springs 24, which pass through openings respectively formed in the ends of the cross-brace 8, and which are connected to the base 3, as may be seen in Fig. 2. Embracing the lower portions of the guide-rods 21, and resting on the cross-brace 8, are two short expansive springs 25, which serve to cushion the engagement between the cross-head 19 and the cross-brace 8 upon the descent of the cross-brace.

Seated in a depression 26, formed in the forward extremity of the base 3, is a cream-receptacle 27, provided with a lid 28, normally engaged by a rubber plate 29, carried on an arm 30 of a vertically-extending rod 31, movable and friction-tight in staples 32, carried

by the left-hand standard 6, and by the adjustment of the rod 31 the plate 29 may be made to bear upon the cover 28 with the proper force so as to hold the cover in place. Vertically movable through the cover 28 is a dasher-rod 33, which passes upwardly and through the space inclosed by the arms 34, projecting forwardly from the cross-head 19, the dasher-rod being held by means of a set-screw 35.

Hingedly carried at the rear portion of the table 5 is a box 36, which serves as a cover for the gearing on the table, inclosing the same and preventing the accumulation of dust, as well as relieving the attendant from the danger of being injured by the gearing. The forward side of the box 36 is open, exposing the gearing from the front side, as seen in Fig. 2.

It will be apparent that upon the operation of the treadle 14 the shaft 9 will be revolved, and will impart its movement to the shaft 15, causing the pins 17 to engage the arm 18 and raise the cross-head 19 against the tension of the springs 24, whereupon, as the pair of pins 17 which is engaged with the arm 18 leave said arm, as the dotted lines in Fig. 1 show, the springs 24 will react and quickly return the cross-head to its lowered position, bringing downward the rod 33 and the attached dasher. Immediately after the parts assume this position a second pair of pins will engage the arm 18 and repeat the operation described. By these means the butter may be quickly and efficiently churned, and owing to the regularity of the stroke the cream will not be splashed or wasted in other ways.

Various changes may be made in the form and embodiment of my invention without departing from the spirit and scope thereof. Hence I desire it understood that I consider myself entitled to all such changes. Among these are the substitution for the table 5 of a series of longitudinal bars carrying the bearings for the shafts 9 and 15, the use of a crank on the shaft 15 in place of the treadle 14 and pitman 13, and the formation of an integral crank-arm on the shaft 9 in place of the crank-disk shown in the drawings. Also, it will be understood that the portions here shown may be changed if the occasion requires.

In practice the springs 24 may be shorter and fastened to the respective standards 6.

The plate 29 is not necessarily constructed of rubber, as any suitable material may be used. The springs 25 may be made of rubber.

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

1. The combination with a frame having two standards provided with an upper and lower cross-brace, of two guide-rods running vertically between the standards from one cross-brace to the other, a cross-head having two oppositely-extending ears at each end, the ears at each side respectively sliding on the guide-rods and the lower ears being projected beyond the respective guide-rods, a retractile spring connected to the outer end of each lower ear and drawing the cross-head downward, a slotted arm projecting rearwardly from the upper end of the cross-head, and a wheel having a portion passing through the slot of the arm and provided with pins arranged to engage the arm and to lift the same against the tensions of the retractile springs, substantially as described.

2. The combination with a frame having two standards provided with an upper and lower cross-bar, a cream-receptacle juxtaposed to the standards, a dasher movable in the cream-receptacle, two guide-rods running longitudinally between the standards and connected to the cross-braces, a cross-head having two oppositely-projecting ears at each end, the ears respectively sliding on the guide-rods and the lower ears being extended beyond the guide-rods, two retractile springs respectively connected to the ends of the lower ears and drawing the cross-head downward, an expansive spring embracing the lower portion of each guide-rod, the expansive springs cushioning the downward movement of the cross-head, a slotted arm projecting rearwardly from the upper end of the cross-head, a shaft revolubly mounted in the frame, and a gear fixed to the shaft and having a portion moving through the slot of the arm, the gear having pins engaging the under side of the arm to raise the cross-head against the tension of the retractile springs, substantially as described.

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Witnesses:

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A. P. JOYNER.