

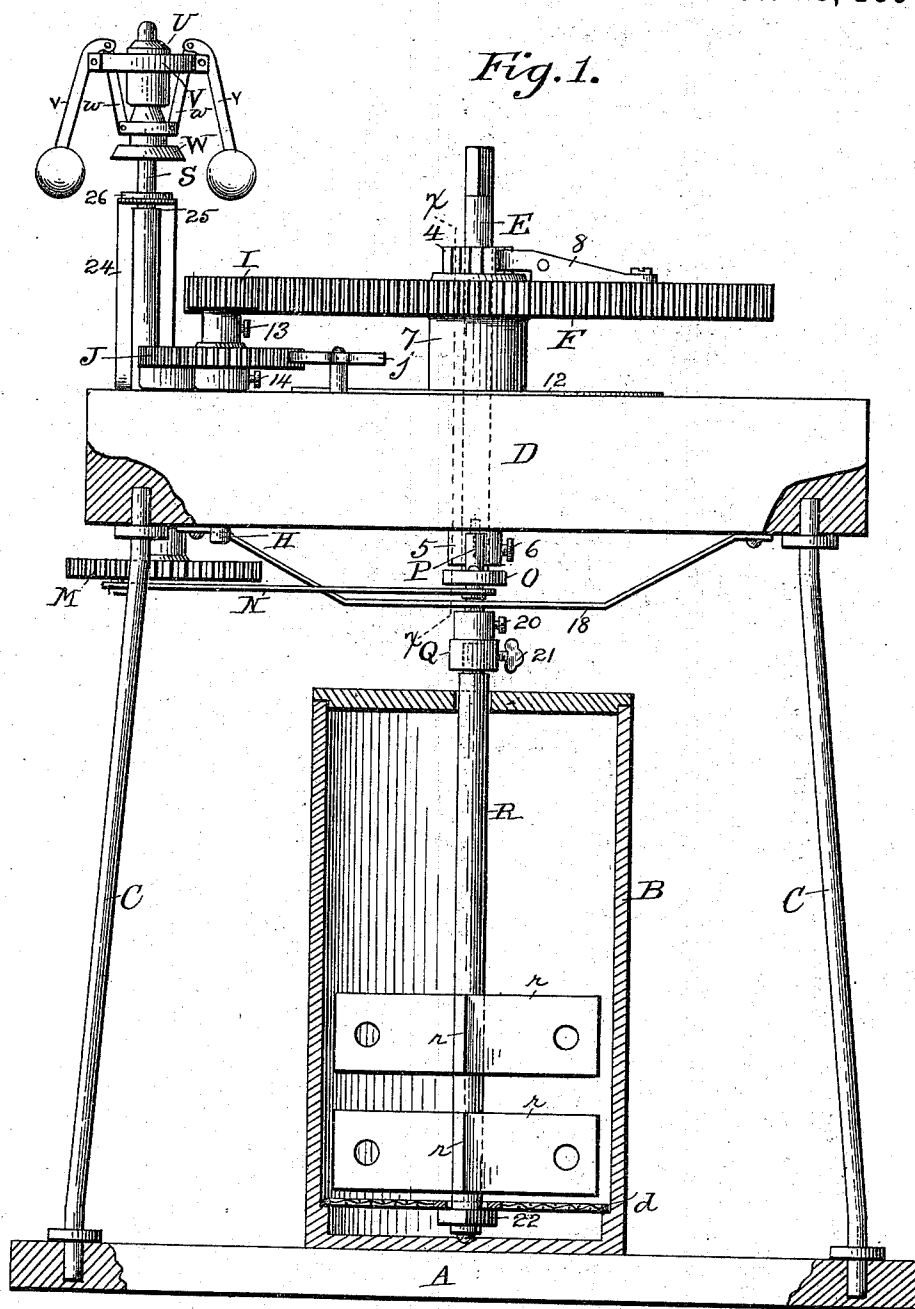
(No Model.)

M. M. MONTGOMERY.
CHURN.

3 Sheets—Sheet 1.

No. 528,129.

Patented Oct. 23, 1894.



Witnesses:

Josh Blackwood
David S. Gould

Inventor.

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Mamie M. Montgomery
By Wm Hunter Myers,
Attorney.

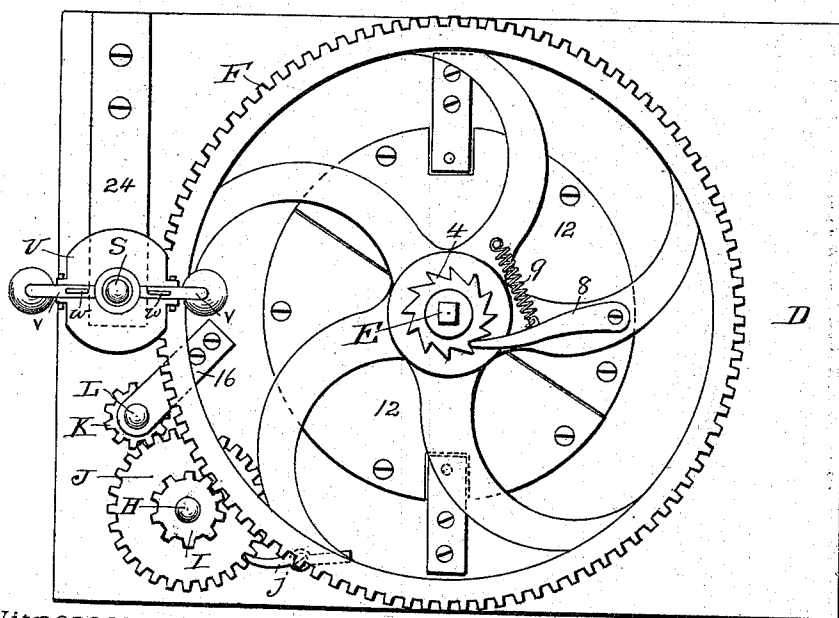
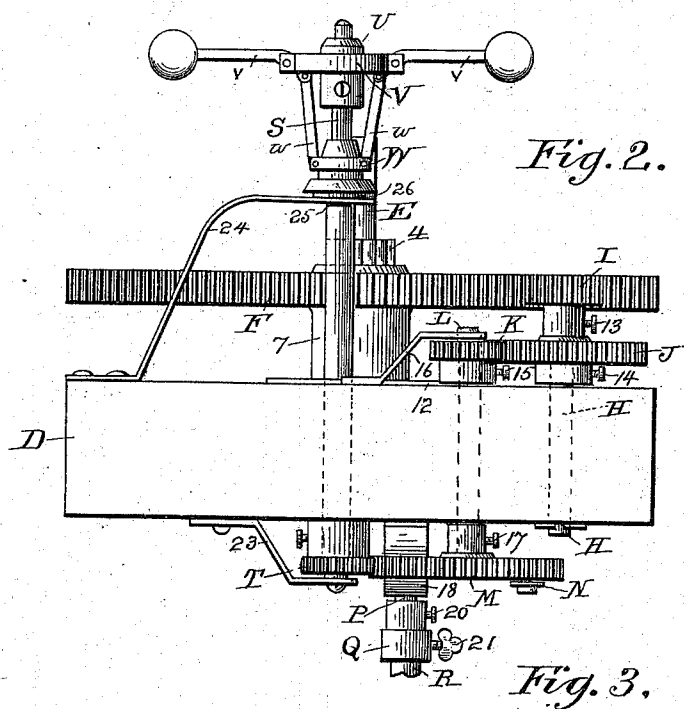
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M. M. MONTGOMERY
CHURN.

3 Sheets—Sheet 2.

No. 528,129.

Patented Oct. 23, 1894.



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(No Model.)

M. M. MONTGOMERY.
CHURN.

3 Sheets—Sheet 3.

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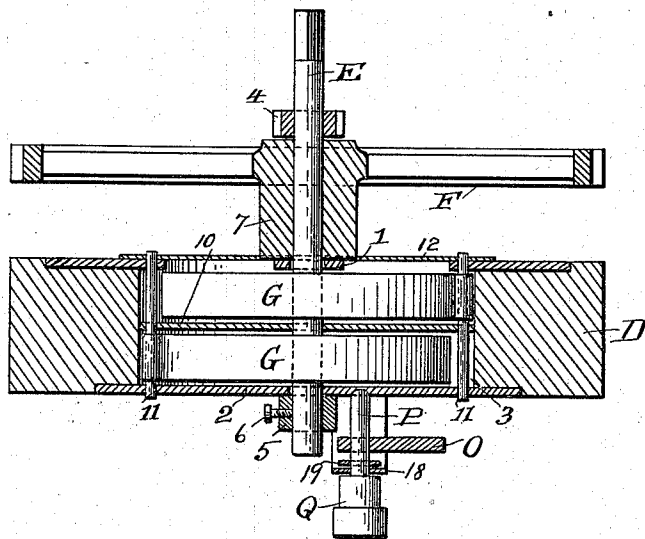


Fig. 4.

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UNITED STATES PATENT OFFICE.

MAMIE M. MONTGOMERY, OF GOWENSVILLE, SOUTH CAROLINA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 528,129, dated October 23, 1894.

Application filed April 6, 1894. Serial No. 506,600. (No model.)

To all whom it may concern:

Be it known that I, MAMIE M. MONTGOMERY, a citizen of the United States, residing at Gowensville, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Churns, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved churn, in which the dasher-shaft is automatically actuated in such a manner as to impart to it an oscillatory rotary movement, the rapidity of which movement is automatically controlled and regulated, and also in which the structural parts are separable and capable of being closely packed for shipment.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claim.

Figure 1 is a front elevation, partly in section, of the churn. Fig. 2 is a side elevation of the dasher-operating mechanism carried by the cap-plate. Fig. 3 is a plan view of the same. Fig. 4 is a vertical cross-section on the line *x x*, Fig. 1.

The structural parts of my churn (the churn being of the knock-down variety) consist of a base-plate A, on which the cream-receptacle B is set; four standards C, removably secured in the respective corners of the base-plate; and a cap-plate D, supported by the standards, this cap-plate carrying the dasher-operating mechanism, which I will now describe.

E is the main shaft, vertically journaled in two bearings 1 and 2 on the upper and lower sides, respectively, of the cap-plate, and spanning at right angles to each other a large circular opening 3 in said plate. The upper end of this shaft is squared for the reception of a socket-wrench, and below this squared portion is a ratchet 4, rigidly secured to the shaft. On the lower end of said shaft is a thimble 5, provided with a set-screw 6, for preventing upward movement of the shaft.

F is the main gear-wheel, loosely mounted on the main shaft immediately below the ratchet 4, and provided on its lower side with a hub 7, which rests on the upper shaft-bearing 1. This wheel carries a pawl 8, pivoted thereto, and normally held in engagement with the ratchet 4 by a spiral spring 9.

The opening 3 in the cap-plate is divided centrally by a horizontal plate 10, and in said opening, on each side of this plate, is located one of two coil-springs G, the outer end of each of which is secured to one of two vertical pins 11 secured at the sides of the opening, while the inner end of each spring is secured to the main shaft. The opening in the cap-plate is preferably covered by a shield 12, in two parts. In one corner of the cap-plate is mounted a shaft H, which carries at its upper end a pinion I, sleeved thereon and secured by a set-screw 13, said pinion engaging with the main wheel. Below said pinion is a gear-wheel J, sleeved on shaft H and secured thereto by a set-screw 14. A pawl j, pivoted to the cap-plate, is adapted to engage with the wheel J, serving, when desired, to stop the mechanism. Gear-wheel J meshes with another pinion K, sleeved on shaft L, and held in place by a set-screw 15, said shaft being mounted in the cap-plate, and supported at its upper end by a bracket 16. On the lower end of said shaft L is sleeved a gear-crank-wheel M, rigidly fixed to the shaft by a set-screw 17. To this wheel M is pivoted one end of a pitman N, the other end of which is pivoted to a crank-arm O, rigidly secured to a short independent spindle P, supported by a bracket 18, secured to the under side of the cap-plate, and held in said bracket by a collar 19. On the lower end of this spindle is sleeved a dasher-socket Q, secured thereon by a set-screw 20, this socket being adapted to receive the squared upper end of the dasher-shaft R, which is secured therein by a thumb-screw 21, the lower end of this shaft being rounded and seated in a depression in the bottom of the receptacle B. The shaft R is provided with angular blades *r*; and below the lower blade there is a wire disk *d*, loosely mounted on the shaft, and held thereon by a nut 22, this disk being for the purpose of raising the butter from the receptacle.

S is the governor-shaft, mounted in one end of the cap-plate, carrying near its lower end a fixed pinion T, in gear with the crank-wheel M, the lower end of the shaft being steadied by a bracket 23 secured to the cap-plate. Secured to the upper side of the cap-plate is another bracket 24, of thin spring metal, through which the governor-shaft passes, there being

a shoulder 25 on the shaft slightly below the normal position of the upper end of the bracket. On the shaft and resting on the bracket is a washer 26. On the upper end of the shaft S is adjustably secured a governor U, which consists of two sleeved disks V and W, with the latter of which are pivotally connected the lower ends of two links *w*, the upper ends of which are pivotally connected to two ball-carrying arms *v*, pivoted to the upper sleeved disk V.

The operation of my churn will be obvious from the description and drawings; but it may be well to remark that when the main shaft is turned sufficiently to wind the springs, and the pawl *j* is thrown out of engagement with the wheel J, the main shaft will be put in revolution, and, by reason of the pawl 8 being in engagement with the fixed ratchet 4, the main wheel will likewise be put in motion, thereby, through the intermediate gearing, turning the crank-wheel, and thus operating the crank-arm in a manner to impart oscillatory rotary motion to the dasher, this motion being deemed superior to the full revolution of the dasher, in that the tendency of the cream to flow in one direction is thereby constantly interrupted, resulting in more readily separating the oily globules from the other parts of the cream. The speed of rotation is controlled and regulated by the governor, for, as the speed of revolution of the shaft increases, the governor-arms are thrown upward by centrifugal force, thereby causing the lower disk W of the governor to bear, with more or less pressure, on the bracket 24, which in turn likewise bears on the shoulder 25 of the governor-shaft, thereby retarding the revolution of said shaft, and, through the

intermediate mechanism, also the revolution of the main shaft.

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

In a churn of the class described, the combination, with a base-plate, standards removably secured therein, a cream-receptacle on the base-plate, a dasher therein, and a removable cap-plate supported by said standards, of a main shaft extending through the cap-plate, spring mechanism located within the cap-plate and adapted to impart rotary motion to said shaft, a main gear-wheel mounted on the main shaft above the cap-plate and adapted to revolve therewith in one direction only, a governor for regulating the speed of revolution of the main wheel, a shaft extending through the cap-plate and carrying a pinion on its upper end and a crank-wheel on its lower end, said crank-wheel engaging with a pinion on the governor-shaft, a short shaft mounted in the upper side of the cap-plate and carrying a pinion and a gear-wheel, which respectively engage with the main wheel and the pinion on the crank-wheel shaft, a stop-pawl adapted to engage with one of the gear-wheels, an independent spindle journaled beneath the cap-plate and provided with a crank-arm and a socket, the latter adapted to receive one end of a dasher-shaft, and a pitman connecting the crank-wheel and crank-arm.

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

MAMIE M. MONTGOMERY.

Witnesses:

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J. B. COX.