

(No Model.)

2 Sheets—Sheet 1.

S. A. OTT.

MECHANISM FOR OPERATING CHURNS.

No. 417,935.

Patented Dec. 24, 1889.

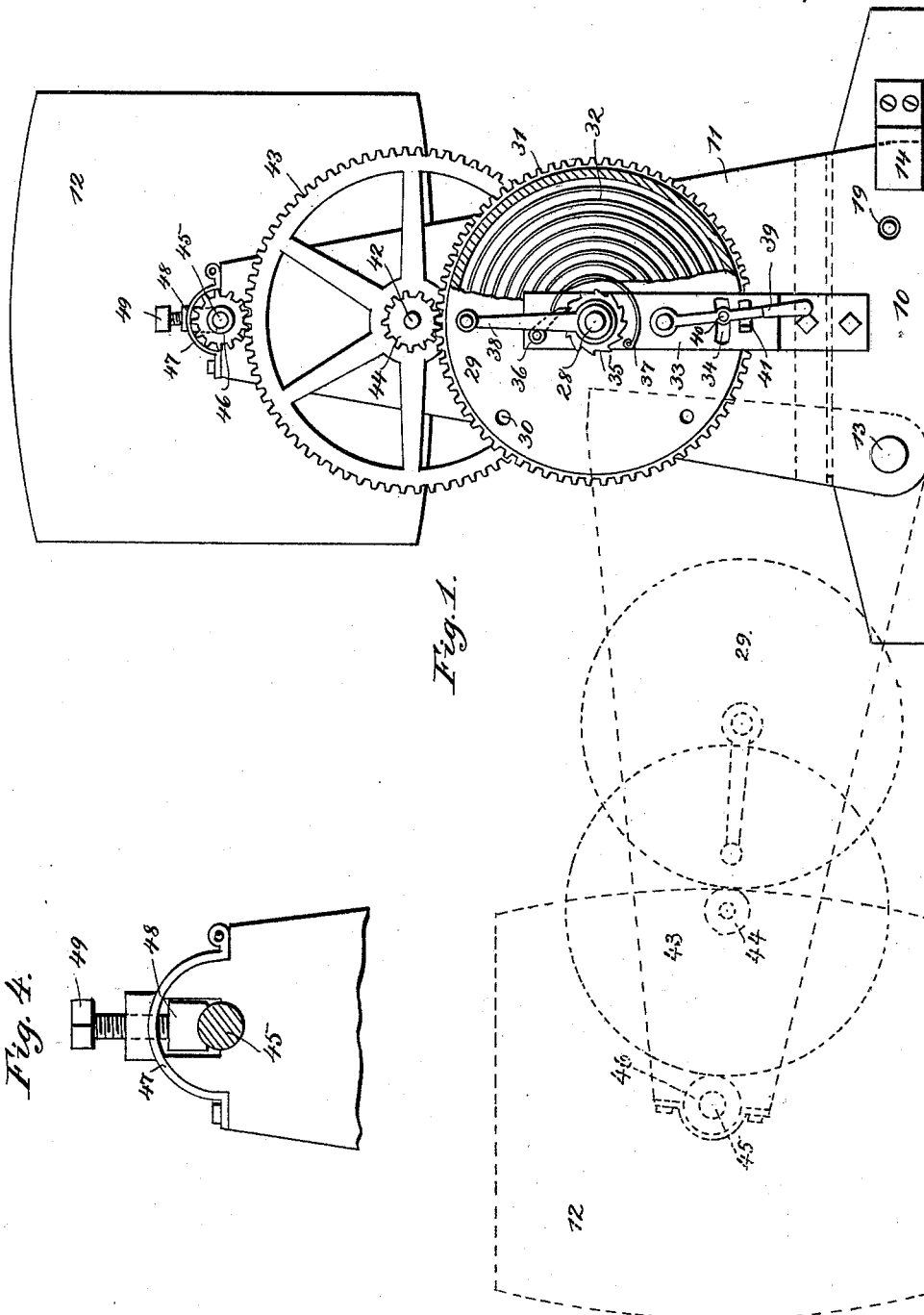


Fig. 4.

Fig. 1.

WITNESSES:

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INVENTOR

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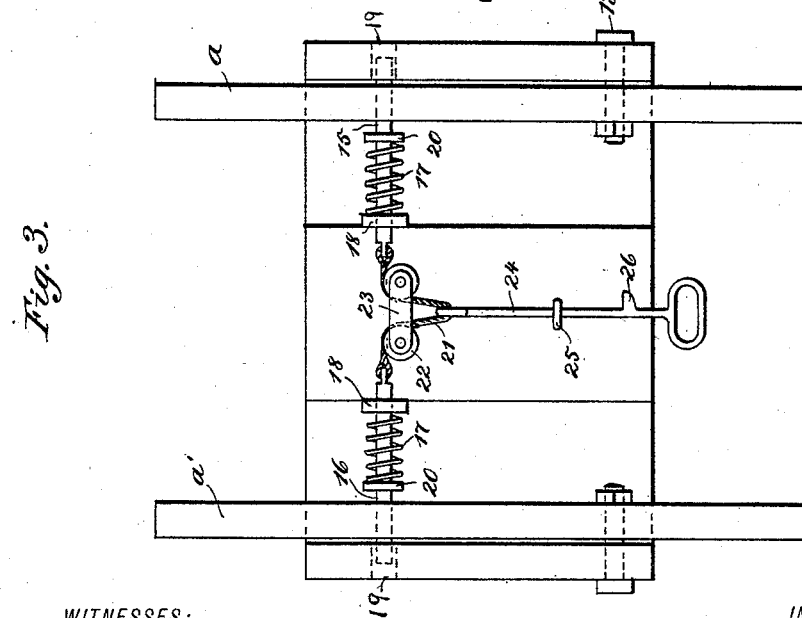
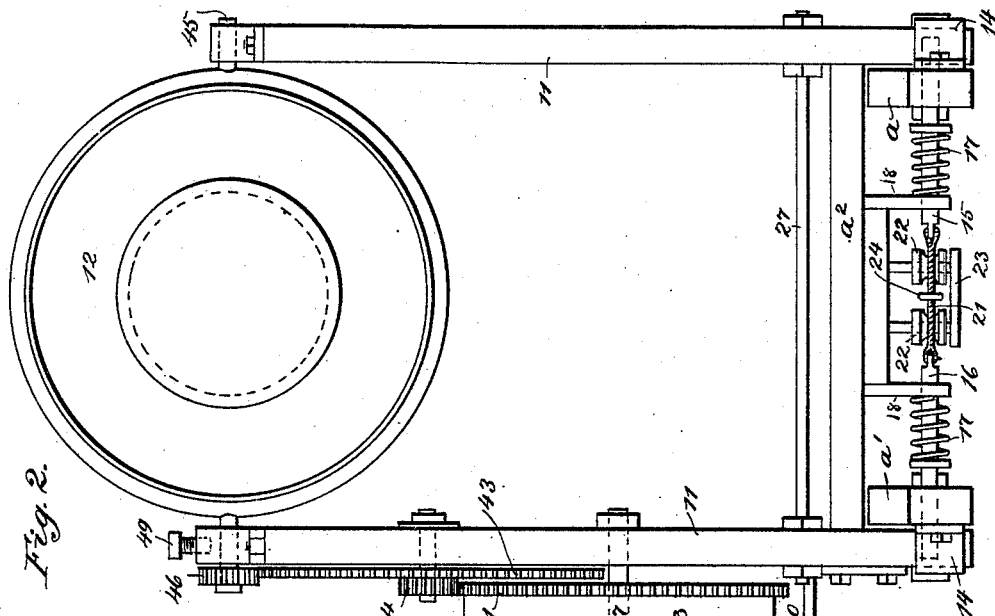
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UNITED STATES PATENT OFFICE.

SAMUEL A. OTT, OF PLOVER, IOWA, ASSIGNOR TO HIMSELF AND LOUIS BRODSKY, OF SAME PLACE.

MECHANISM FOR OPERATING CHURNS.

SPECIFICATION forming part of Letters Patent No. 417,935, dated December 24, 1889.

Application filed April 5, 1889. Serial No. 306,060. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL A. OTT, of Plover, in the county of Pocahontas and State of Iowa, have invented a new and useful
5 Mechanism for Operating Churns, of which the following is a full, clear, and exact description.

My invention has for its object to provide a means whereby a rotary motion may be imparted to a churn, and also whereby the said motion may be regulated at will by the operator.

A further object of the invention is to provide a means whereby when the churn is in
15 motion it is elevated above the floor, ground, or other support sustaining the frame, and when it is necessary to fill or to empty the churn the body thereof may be brought to a vertical position upon the ground or floor
20 without being detached from the frame and without inconvenience to the operator.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth in
25 the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the
30 views.

Figure 1 is a side elevation of the churn and attached mechanism, illustrating in positive lines the churn in position to be rotated and in dotted lines the position of the churn
35 when it is necessary to fill or to empty the same. Fig. 2 is a front elevation. Fig. 3 is a bottom plan view, and Fig. 4 is a detail view illustrating the bearing whereby the movement of the churn-body is regulated.

In carrying out the invention the frame consists of a base 10, comprising two side bars a and a' , adapted to rest upon the ground or other support, and a table a^2 , attached to the said side pieces. Upon each of the side pieces
40 of the base a and a' , near one end, standards 11 are pivotally secured, which standards are adapted to carry the churn or body 12, adapted to contain the material from which the butter is to be made. The standards 11
50 are pivoted one to the outer face of each of

the side pieces a and a' of the base, a pivotal pin 13 being passed through the lower end of each standard at one side, as best illustrated in Figs. 1 and 3, the other side of the standard at the base being preferably recessed
55 to engage with brackets 14, attached to the base, as best shown in Fig. 1.

When the standards 11 are in contact with the brackets 14, they are held in a vertical or perpendicular position, as illustrated in positive lines in Fig. 1, by means of a retaining device secured to the bottom of the base. This retaining device consists of two bolts 15 and 16, each actuated by a coil-spring 17, the said bolts being held to slide at their inner
60 ends in hangers 18, projected from the table a^2 of the base at each side of the center, as best illustrated in Fig. 3. The outer ends of the bolts are made to pass through openings in the side pieces a and a' of the base of the frame and into apertures 19, produced in the standards 11. Thus when the said bolts have been made to pass through the said apertures of the standards the latter are sustained in the vertical position and effectually prevented
70 from moving therefrom, the brackets 14 serving only as guides.

Each bolt 15 and 16 is limited in its outward movement by means of a collar 20, integral therewith, and the said bolts are drawn
80 inward against the pressure of the springs 17 by means of a cord, rope, or chain 21, attached to the inner extremity of each bolt and made to pass over friction-rollers 22, journaled in a yoke or frame 23, attached to the under face
85 of the base-table a^2 at or near the center thereof, and preferably nearer the front than the back. This cord, rope, or chain 21 is manipulated through the medium of a draw-rod 24, attached to a looped portion thereof, 90 as illustrated in Fig. 3, which draw-rod passes beyond the forward end of the base-table a^2 , in contact with the lower side thereof, in suitable bearings 25, and is provided with a lip or lug 26, as is likewise shown in said Fig. 3. 95

When the draw-rod is pulled forward until the lip or lug 26 contacts with the front edge of the table, both bolts 15 and 16 will be drawn far enough inward to disengage from the standards 11 and to permit the said stand- 100

ards to be carried down to the horizontal position illustrated in dotted lines in Fig. 1. The standards 11 are preferably united by a suitable horizontal brace-rod 27.

5 To one of the standards 11, below the center, a shaft 28 is secured, adapted to project horizontally outward therefrom, upon which shaft a drum 29 is journaled, provided with a series of apertures 30 in the inner face near the periphery and a series of teeth 31, extending from
10 the peripheral surface at the inner face. This drum 29 carries a coil-spring 32, one end of said spring being attached to the shaft 28 and the other to the inner face of the periphery of
15 the drum.

The outer end of the shaft 28 is journaled in a bracket 33, attached to the standard in any suitable or approved manner beneath the drum and provided with a transverse slot 34,
20 with which slot the several apertures in the drum register as the latter is revolved.

Upon the outer upper end of the shaft 28 adjacent to the bracket 33 a ratchet-wheel 35 is rigidly secured, which ratchet-wheel is
25 engaged by a dog 36, controlled by a spring 37, and the said shaft 28 is rotated, preferably, by a crank-arm 38, attached to the outer end thereof, as best illustrated in Figs. 1 and 2.

A lock-lever 39 is pivoted at one end upon
30 the bracket 33 above the slot 34, said lever being provided with a stud or pin 40, projecting from the lower face at a right angle thereto and capable of entering or sliding in the slot 34. A projection 41 is formed upon the bracket
35 33 below the slot 34, and when the free end of the lock-lever 39 is in contact with the said projection the pin 40 is so elevated that it is incapable of entering any of the apertures 30 in the drum during the rotation thereof. To
40 stop the movement of the drum, the lock-lever is disengaged from the projection 41, whereupon the pin 40 may be made to engage with any one of the drum-apertures 30 that the operator may desire, and when the pin 40 is
45 thus engaged the drum is effectually prevented from rotating.

Above the drum-shaft 28 a second shaft 42 is secured, upon which a spur-wheel 43 is loosely mounted, carrying a pinion 44, capable
50 of meshing with the teeth 31 of the drum and receiving motion therefrom.

In the upper end of each standard a semi-circular recess is formed, constituting the bearings for the trunnions 45 of the churn-body 12, one trunnion of said churn-body being
55 provided with a pinion 46, meshing with the spur-gear 43, as illustrated in Figs. 1 and 2.

A semicircular strap 47 is made to contact with or to span the upper end of each of the standards 11, and above the trunnion journaled in the standard carrying the gear above
60 described an elastic or flexible block 48, formed preferably of rubber, is located, which block preferably completes the circle of the bearing-recess in said standard and contacts
65 with the trunnion. In the upper central surface of the strap attached to this standard a

set-screw 49 is entered to a bearing upon the said flexible or elastic block 48, whereby when
70 it is necessary or desirable to reduce the speed of the churn-body it may be effected by screwing down the set-screw 49, which causes the brake-block 48 to contact more or less with the trunnion of said body.

It is evident from the foregoing description
75 that when it is necessary to fill or to empty the churn-body 12 by manipulating the mechanism below the base, and thereby releasing the standards, the said standards, together with the body, may readily be carried down-
80 ward, so that the latter may contact with the ground, floor, or other support of the frame of the churn, as illustrated in dotted lines in Fig. 1.

Having thus described my invention, I claim 85 as new and desire to secure by Letters Patent—

1. A churn-operating mechanism consisting of a base, standards adapted to support the churn-body pivoted thereto, one at each end,
90 the pivotal point of the standards being near one side of the same, spring-actuated bolts located beneath the base and capable of contact with the standards, a spring-actuated drum, carrying teeth, held to revolve upon
95 one standard, a pinion attached to one trunnion of the churn-body, and gearing, substantially as shown and described, connecting the said trunnion and drum, as and for the purpose specified.

2. An apparatus comprising a base, a stand-
100 ard pivoted at one side to each end of the base and provided with an aperture in the opposite side, spring-actuated bolts supported beneath the base capable of entering the apertures in the standards, a drum held to revolve upon one standard, provided with an
105 opening in the outer face and teeth integral with the inner face at the periphery, a lock-lever provided with a pin capable of entering the opening in the drum, a pinion attached
110 to one trunnion of the body to be operated, and gearing, substantially as shown and described, connecting the drum and pinion, all combined for operation substantially as and for the purpose specified.

3. A churn-operating mechanism consisting of a base, standards adapted to support the churn-body pivoted at one side to each end
115 of the base and provided with an aperture in the opposite side, spring-actuated bolts supported beneath the base and capable of entering the apertures in the standards, a strap covering the upper extremity of the standards, a flexible block held between one strap and
120 one trunnion of the body to be operated, a set-screw located in the strap and capable of contact with the said flexible block, and means, substantially as shown and described, for rotating the said body, as and for the purpose specified.

4. A churn-operating mechanism consisting of a base, standards adapted to support a
125 churn-body pivoted at one side to each end of the base and provided with an aperture in

the opposite side, spring-actuated bolts supported beneath the base capable of entering the apertures in the standards, a strap covering the upper extremity of the standards, a
5 flexible block held between one strap and one trunnion of the body to be operated, a drum actuated by a coiled spring and journaled upon one standard, said drum provided with apertures or openings in the outer face
10 at the periphery, a stop-lever adapted for

contact with the drum, and gearing, substantially as shown and described, connecting the toothed periphery of the drum and the trunnion of the said body, as and for the purpose specified.

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Witnesses:

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F. BRITTON.