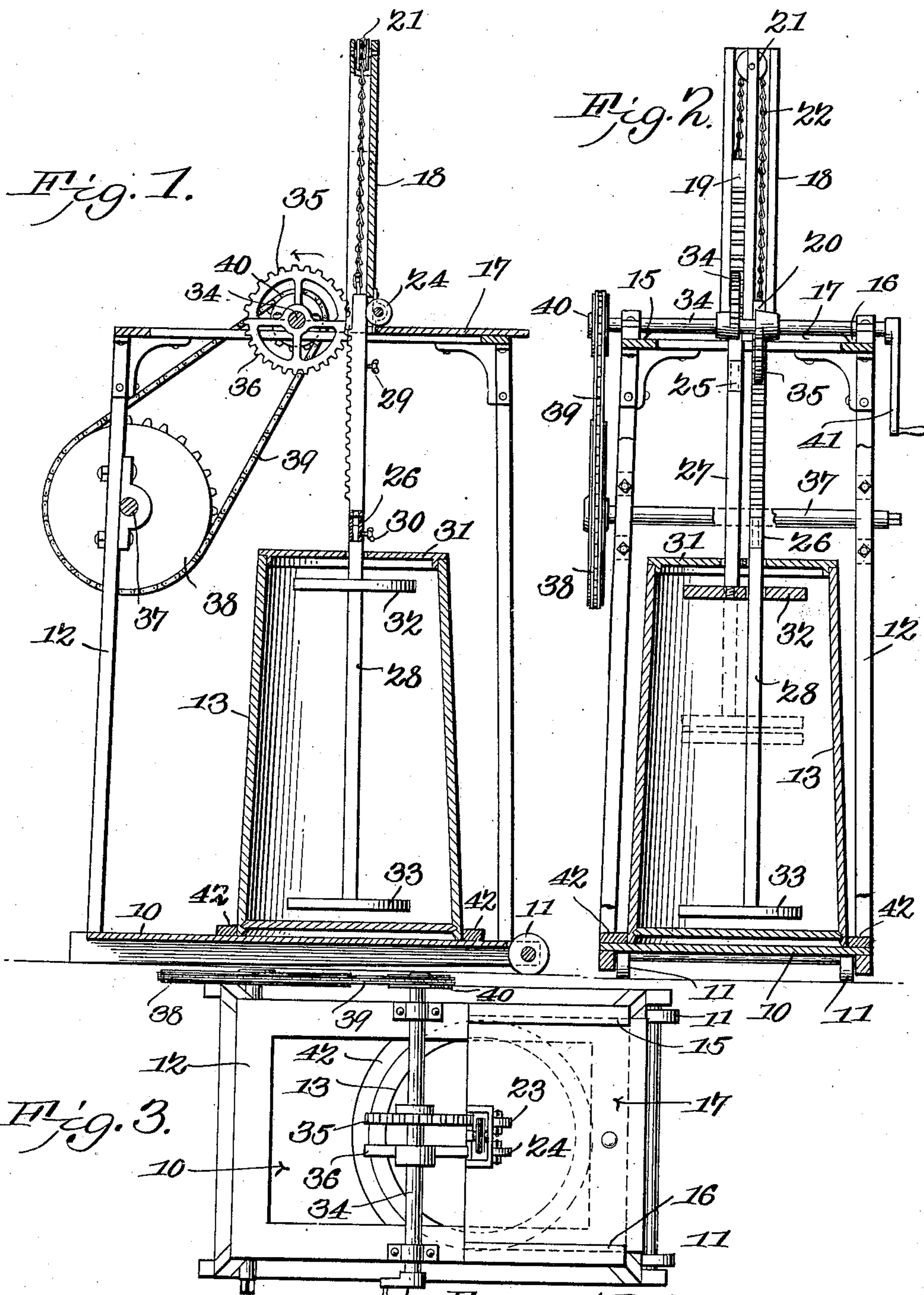


No. 828,366.

PATENTED AUG. 14, 1906.

E. C. BAIN.
CHURN.

APPLICATION FILED APR. 10, 1906.



WITNESSES:

E. C. Bain
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EUGENE C. BAIN, OF CHRISTIANSBURG, VIRGINIA, ASSIGNOR OF ONE-FIFTH TO MARMADUKE H. TOMPKINS, ONE-FIFTH TO BENJAMIN M. HAGAN, ONE-FIFTH TO WOODIE C. PHLEGAR, AND ONE-FIFTH TO ARCHER P. EVANS, OF CHRISTIANSBURG, VIRGINIA.

CHURN.

No. 828,366.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed April 10, 1906. Serial No. 310,996.

To all whom it may concern:

Be it known that I, EUGENE C. BAIN, a citizen of the United States, residing at Christiansburg, in the county of Montgomery and State of Virginia, have invented a new and useful Churn, of which the following is a specification.

This invention relates to improvements in churns, and has for its object to improve the construction and increase the efficiency of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation.

In the drawings, Figure 1 is a sectional side elevation. Fig. 2 is a front elevation, partly in section. Fig. 3 is a plan view of the improved device.

The improved apparatus comprises a base 10, having carrier-wheels 11 at one end to facilitate its transportation, and supports a vertical frame 12, the base 10 forming a platform for supporting the churn body or receptacle 13. Supported by guides 15 16 upon the upper side of the frame 12 is a plate 17, having a standard 18 rising therefrom, the standard formed with parallel guideways, in which two rack-bars 19 20 are adapted to be moved. A chain-guide sheave 21 is supported in the upper end of the standard, and over this guide-sheave a chain 22 is arranged, with the terminals of the chain connected, respectively, to the rack-bars 19 20. By this means when one of the rack-bars is moved upwardly the other is moved downwardly within the guideways of the standard, as will be obvious. Antifriction-rollers 23 24 are arranged upon the standard 18 to bear against the rear sides of the rack-bars and reduce the friction while the bars are being operated. The lower ends of the rack-bars are provided with sockets 25

26, in which dasher-rods 27 28 are detachably secured, as by set-screws 29 30. The dasher-rods extend through apertures in the cover 31 of the churn-body 13 and are provided at their lower ends within the churn-body with dashers 32 33, the dasher 32 of the rod 27 having an aperture through which the dasher-rod 28 passes, as shown in Fig. 2.

The lengths of the guideways in the standard 18, the lengths of the dasher-rods, and the size of the churn-body are so proportioned that when the rack-bars are moved upward and downward within the range of the guideways in the standard the dasher 33 is moved from the bottom of the body upwardly to a point near the center of the same, and the dasher 32 will move downwardly from the top of the churn-body to a point near the center of the same, as represented by dotted lines in Fig. 2.

The plate 17 being arranged between guides 15 16 is movable upon the framework 12 to enable the dasher members and the churn-body to be more readily disconnected and removed from the frame, as hereinafter more fully described.

Mounted for rotation upon the frame 12 is a shaft 34, carrying two half-gears 35 36, adapted to intermittently engage the rack-bars 19 20 as the shaft is continuously rotated. Thus as the shaft 34 is rotated in the direction of the arrow in Fig. 1 the half-gear 35 engages the rack-bar 19 and carries it upward, together with the dasher 32, connected therewith, and at the same time permits the rack-bar 20, together with its dasher 33, to move downwardly through the action of the coupling-chain 22, the blank side of the gear 36 being opposite the rack-bar 20, while the operative side of the half-gear 35 is engaged with the rack-bar 19. At the end of the upward stroke of the half-gear 35 and the rack-bar 19 the half-gear 35 leaves the rack-bar 19, and the half-gear 36 engages the rack-bar 20 and carries it upward, together with its connected dasher 33, the other rack-bar 19 and its dasher 32 moving downwardly by gravity, as will be obvious. By this simple means as the shaft 34 is continuously rotated the rack-bars, together with their connected

dashers, will be alternately moved upwardly and downwardly, and thus accomplish a very effective churning action.

5 The shaft 34 may be operated in any suitable manner, preferably from a drive-shaft 37, mounted upon the frame 12 and carrying a chain-wheel 40 from the shaft 34.

10 The shafts 34 and 37 are provided with square ends or otherwise formed to receive an operating-handle 41, so that the device may be operated by power applied directly to the shaft 34 or indirectly through power applied to the shaft 37 and the chain-wheels and chain, as may be preferred.

15 When it is desired to remove the body or to insert the same in position upon the platform or base 10, the plate 17 is drawn rearwardly, carrying the rack-bars with it and enabling the churn-body to be easily detached by releasing the set-screws 29 30 and uncoupling the dasher-rods 27 28 and removing the cover 31. The body 13 is deposited in position upon the base in the same manner by reversing the movements of the parts,
25 as will be obvious.

The base 10 is provided with stops 42 to hold the churn-body 13 in position upon the base.

Having thus described the invention, what is claimed as new is—

30 In a churn, a supporting-frame, a body bearing upon said frame, a member slidable upon said frame and provided with a vertical standard having spaced guideways and a guide member between the guideways, two stems movable in said guideways and connected by a flexible element operating over said guide member, two dashers superimposed within said body and connected respectively to said stems, one of said dashers having an aperture to receive the stem of the other dasher, and means for alternately actuating said stems. 35 40

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 45

EUGENE C. BAIN

Witnesses:

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E. S. HAGAN.