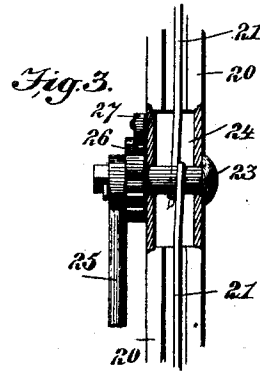
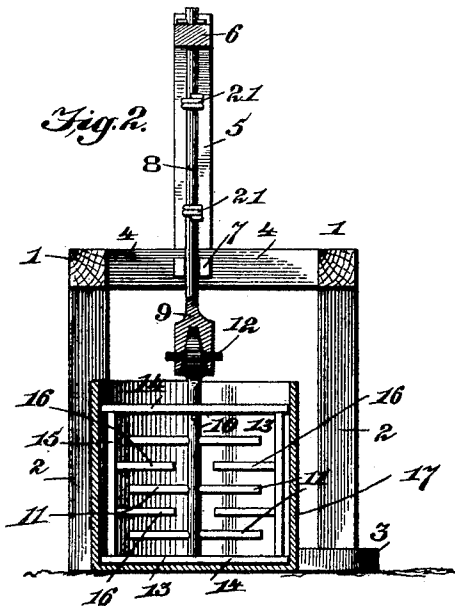
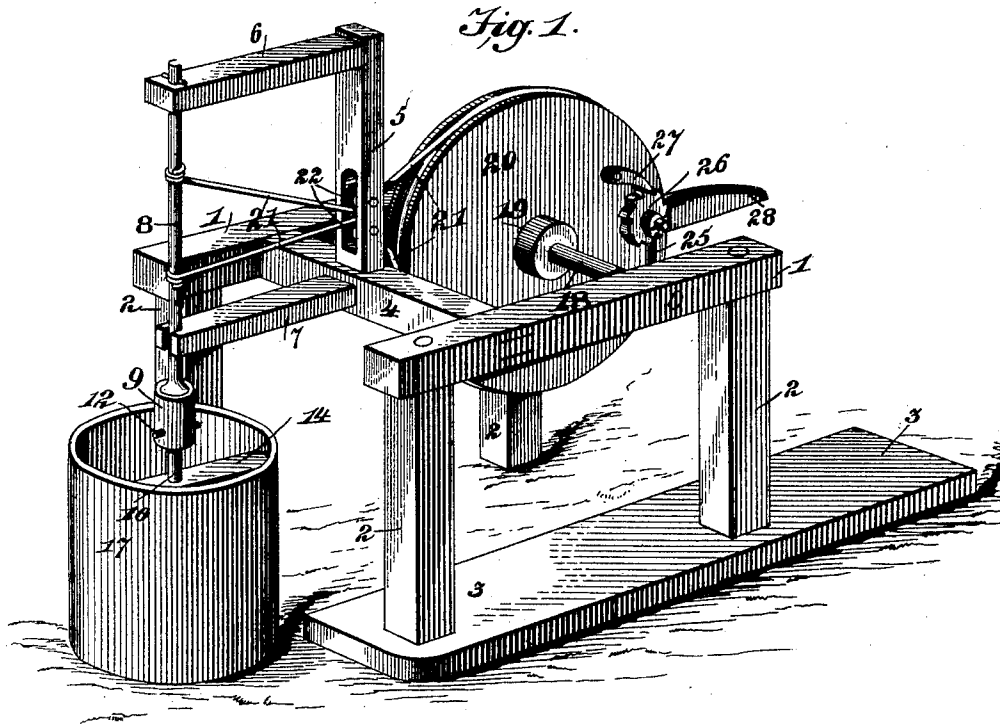


(No Model.)

C. L. MONROE.
CHURN.

No. 586,731.

Patented July 20, 1897.



Inventor

Chalmers L. Monroe,

By his Attorneys,

Witnesses

H. C. Dieterich
O. E. K.

C. L. Monroe

UNITED STATES PATENT OFFICE.

CHALMERS LEE MONROE, OF GENEVA, WEST VIRGINIA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 586,731, dated July 20, 1897.

Application filed July 20, 1896. Serial No. 599,847. (No model.)

To all whom it may concern:

Be it known that I, CHALMERS LEE MONROE, a citizen of the United States, residing at Geneva, in the county of Roane and State of West Virginia, have invented a new and useful Churn, of which the following is a specification.

My invention relates to churn-motors, and has for its object to provide a simple and efficient construction of rotary dasher-operating mechanism.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a churn-motor constructed in accordance with my invention. Fig. 2 is a partial vertical section showing the preferred construction of breaker and cooperating dasher. Fig. 3 is a detail sectional view of the means for adjusting the tension of the belt.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the horizontal side bars of the frame, which are supported by standards 2, the standards at one side of the frame being stepped at their lower extremities in a foot-board or base 3, upon which the operator may stand to prevent tilting or displacement of the motor during operation. Said side bars are connected by a cross-bar 4, from which rises an upright 5, carrying a horizontal arm 6, arranged above the plane of a corresponding arm 7, which projects forwardly from the cross-bar 4. These arms are provided with vertically-registering bearings, in which is mounted a dasher-spindle 8, fitted at its lower extremity with a socket 9 for the reception of the upper end of the dasher-staff 10.

The dasher is preferably provided with lateral arms 11 and is held in place in the socket 9 by means of a transverse pin 12, and in practice I prefer to arrange the dasher to cooperate with an armed breaker 13, consisting of a rectangular frame having upper and lower cross-bars 14 and connecting uprights 15, from the latter of which project the inwardly-extending arms 16. This breaker may be arranged in any ordinary form of churn-recep-

tle 17 and forms an essential part of the dasher, from which it cannot be accidentally displaced.

Mounted upon a transverse shaft 18 between collars 19 thereon is arranged a grooved operating-pulley 20, traversed by the belt 21, which is preferably constructed, as shown in the drawings, of two sections, of which their front extremities are attached to and coiled upon the spindle 8. These belt-sections, after traversing direction-pulleys 22 on the uprights 5, extend in opposite directions around the belt-wheel 20 and are terminally secured to a tension device consisting of a spindle 23, mounted in the walls of a cavity 24 in the belt-wheel and provided at its outer extremity with a handle 25. This tension device also includes a ratchet-wheel 26, engaged to hold the spindle 23 at the desired adjustment (and hence the belt-sections at the desired tension) by a pawl 27.

The belt-wheel is provided with an operating-lever 28, which is adapted to be oscillated to communicate rocking movement to the belt-wheel, and thus rotate the dasher-spindle alternately in opposite directions. The relative diameters of the belt-wheel and spindle regulate the number of revolutions of the spindle to each stroke of the belt-wheel, as will be understood, and any looseness of the belt-sections, due to stretching thereof, may be taken up without checking the operation of the mechanism, inasmuch as the tension device is carried by the belt-wheel and may be grasped and turned by the left hand of the operator.

The extremities of the belt are attached to the dasher-spindle at remote points, and from thence extend in convergent lines toward the upper and lower guide-pulleys 22, between which they pass, said pulleys being arranged contiguous to each other in horizontal planes between those of the said points of attachment, whereby as the portions of the belt are alternately reeled upon the spindle they approach the horizontal planes of the pulleys; but as the angle of the belt is reduced by the approach thereof to a horizontal position the distance from the pulley to the portion of the spindle intersected by the belt is reduced, thus tending to make that portion of the belt slack. The two portions of the belt are,

however, alternately operated, one being reeled as the other is unreeled, and hence as one belt portion is loosened the other is tightened to compensate therefor. This arrangement also secures a uniform application of motion by the belt-wheel to the belt, inasmuch as the belt portions leave the wheel at contiguous points.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

The combination with a vertical dasher-spindle, of a belt-wheel arranged in a common vertical plane with and at one side of the spindle, twin upper and lower axially-horizontal guide-pulleys arranged between the spindle and belt-wheel and in the same vertical plane therewith, said pulleys having their axes arranged parallel with and approximately in the horizontal plane of the axis of

the belt-wheel and spaced closely together at a less distance than the length of the diameter of said wheel, and upper and lower belt portions attached to and extending in opposite directions around the belt-wheel convergently toward the closely adjacent pulleys, carried between and respectively traversing the inner or contiguous sides of the pulleys, extending in divergent lines from the pulleys to the spindle, and attached to the latter at points respectively above and below the planes of the pulleys to reel thereon in opposite directions, each belt portion, when reeling, being adapted to move toward the horizontal plane of the belt-pulleys, substantially as specified.

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

CHALMERS LEE MONROE.

Witnesses:

W. N. LUCAS,
J. V. DAWKINS.