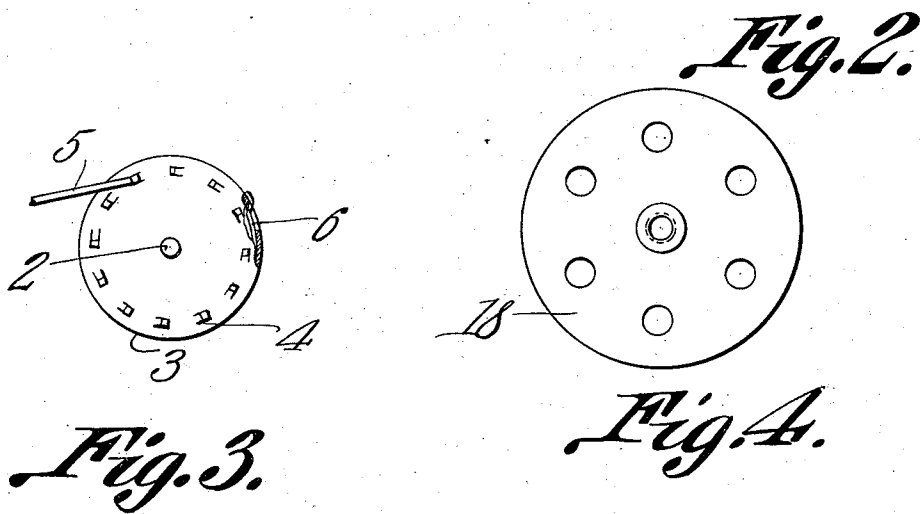
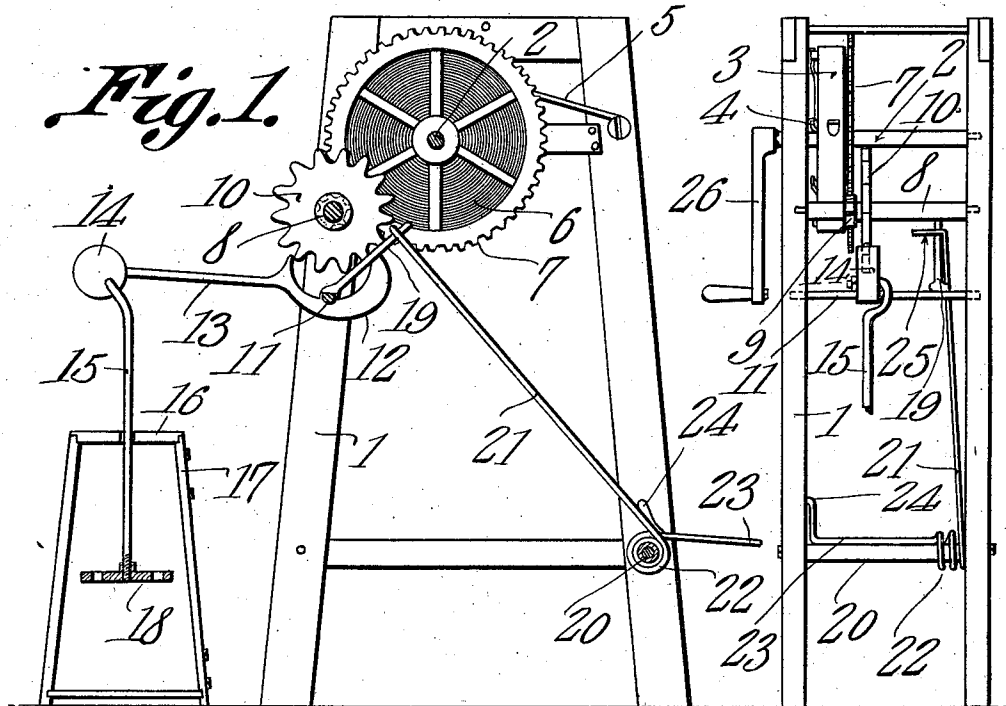


J. F. MURDOCK.
CHURN MOTOR.
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1,010,299.

Patented Nov. 28, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN F. MURDOCK, OF GRAPELAND, TEXAS.

CHURN-MOTOR.

1,010,299.

Specification of Letters Patent.

Patented Nov. 28, 1911.

Application filed March 14, 1910. Serial No. 549,071.

To all whom it may concern:

Be it known that I, JOHN F. MURDOCK, a citizen of the United States, residing at Grapeland, in the county of Houston and State of Texas, have invented a new and useful Churn-Motor, of which the following is a specification.

This invention relates to a churn motor and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide a simple and effective spring motor especially adapted to be used for operating churns and which includes means especially adapted to be manipulated to interrupt or stop the operation of the motor.

A further object of the invention is to so assemble the parts that it is not necessary to employ a pendulum to govern the operation of the motor proper, but in lieu thereof a weighted arm is employed which not only governs the motor proper but adds sufficient momentum to the active parts of the churn to facilitate the churning operation.

In the accompanying drawings,—Figure 1 is a vertical sectional view of the churn motor connected with a churn. Fig. 2 is an edge elevation of the churn motor. Fig. 3 is a detail side view of a portion of the spring motor. Fig. 4 is a detail plan view of a dasher forming a portion of the churn mechanism.

The churn motor comprises a frame 1 in which is journaled an arbor 2. A barrel 3 is journaled for rotation upon the said arbor and is provided upon one side with a series of teeth 4. A pawl 5 is mounted upon the frame 1 and at its free end is adapted to engage the teeth 4 upon the barrel 3. A spring 6 is located within the barrel 3 and is connected with the same and the arbor 2 in the usual manner. A gear wheel 7 is journaled for rotation upon the arbor 2 and is attached to one side of the barrel 3 as is usual in such construction. A shaft 8 is also journaled in the frame 1 and is provided with a gear wheel 9 which meshes with the gear wheel 7. A star wheel 10 is fixed to the shaft 8. A bar 11 is pivoted in the frame 1 below the shaft 8 and an escapement yoke 12 is fixed to the said bar. The ends of the yoke 12 are adapted to engage or enter the spaces between the peripheral points of the star wheel 10 in the usual manner. At one side the yoke 12 is continued into

an arm 13 which carries at its outer free end a fixed weight 14. A dasher rod 15 is pivotally connected with the weight 14 and passes through a top 16 of a churn barrel 17. A dasher 18 is screw-threaded upon the lower end of the dasher rods 15 and is normally located within the barrel 17.

A radially disposed arm 19 is fixed to the pivoted bar 11. A bar 20 is fixed at its ends to the opposite sides of the frame 1 and a spring rod 21 is coiled as at 22 around a portion of the bar 20. From the coil 22 the rod 21 is outwardly disposed as at 23 and one end of the said rod 21 is carried back and fixed to one side of the frame 1 at a point to one side of the bar 20 as at 24. The other end of the rod 21 is extended laterally in the form of a stop or catch 25 which at times is adapted to engage the arm 19 and hold the same so that the bar 11 cannot swing upon its pivot. Any suitable means as for instance a crank handle 26 may be provided for rotating the arbor 2 to wind the spring 6 within the barrel 3.

In operation when the spring 6 is wound up and the catch extremity 25 of the rod 21 is disengaged from the arm 19 and the churn is connected with the weight 14 as described, rotary movement is transmitted from the wheel 7 through the wheel 9 to the shaft 8. As the said shaft 8 rotates the star wheel 10 is carried around and the points thereof engaging the extremities of the escapement yoke 12 will cause the said yoke to rock the pivoted bar 11. As the said yoke rocks with the bar the extremity 13 will reciprocate the weight 14 vertically and through the said weight the dasher rod 15 and dasher 18 will be reciprocated vertically. By reason of the fact that the weight 14 is provided at the outer free extremity of the extension 13 of the yoke 12 it is not necessary to provide a pendulum or other means for regulating the action of the spring 6 upon the connected train of gear wheels and furthermore by reason of the location of the said weight 14 at its outer free extremity of the extension 13, sufficient momentum is added to the mechanism to facilitate the churning operation. The rod 21 is under tension sufficiently to hold the catch extremity 25 thereof away from the arm 19 when the said catch is disengaged from the said arm. This is by reason of the fact that the said rod 21 is provided with a coiled section 22 which passes around the

bar 20 and the lower end of the rod is attached to one side of the frame at a point to one side of the said bar 20. When however, the portion 23 of the rod 21 is raised so that the portion of the rod 21 carrying the catch extremity 25 is swung about the bar 20, the said catch extremity 25 is moved into the path of movement of the arm 19 and will engage the upper edge thereof. This will bring the arm 19 to a state of rest and will hold the extremities of the escapement yoke 12 in the spaces between the peripheral points of the star wheel 10 and will stop the movement of the said star wheel. As the weight 14 tends to gravitate and is located beyond one side of the bar 11 from that to which the arm 19 extends, the said weight will hold the said arm 19 in frictional engagement with the catch extension 25 of the rod 21 and thus the said extension 25 will be held in engagement with the arm 19 against the natural tendency of the rod 21, by reason of its mounting and its tension, to move the catch extremity 25 away from the said arm 19.

To disengage the extremity 25 of the rod 21 from the arm 19 it is necessary only to lift the outer portion of the extension 13 of the yoke 12 when the said rod 21 will move back or may be moved back out of engagement with the said arm 19.

Having described the invention what I

claim as new and desire to secure by Letters Patent is;—

A motor comprising a frame, a spring actuated motion transmitting means located thereon and terminating in a star wheel, a bar pivotally mounted upon the frame, an escapement yoke fixed to the bar and arranged to engage the peripheral points of the star wheel, said yoke having at one side an extension, a weight fixed to the free end of the extension, an arm fixed to the bar and extending beyond that side thereof which is opposite the side beyond which the yoke extension projects, a cross bar attached to the frame, a resilient rod having a coiled section which surrounds the cross bar, said rod from said coiled section being outwardly disposed and having one end attached to the frame at a point at one side of said cross bar, said rod having at its other end a laterally disposed catch adapted to be projected into the path of movement of the arm upon the pivoted bar and when in engagement with said arm adapted to hold the same at a state of rest.

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

JOHN F. MURDOCK.

Witnesses:

OLON W. DAVIS,
JOHN N. PARKER.