

1,008,307.

Patented Nov. 14, 1911.

2 SHEETS-SHEET 1.

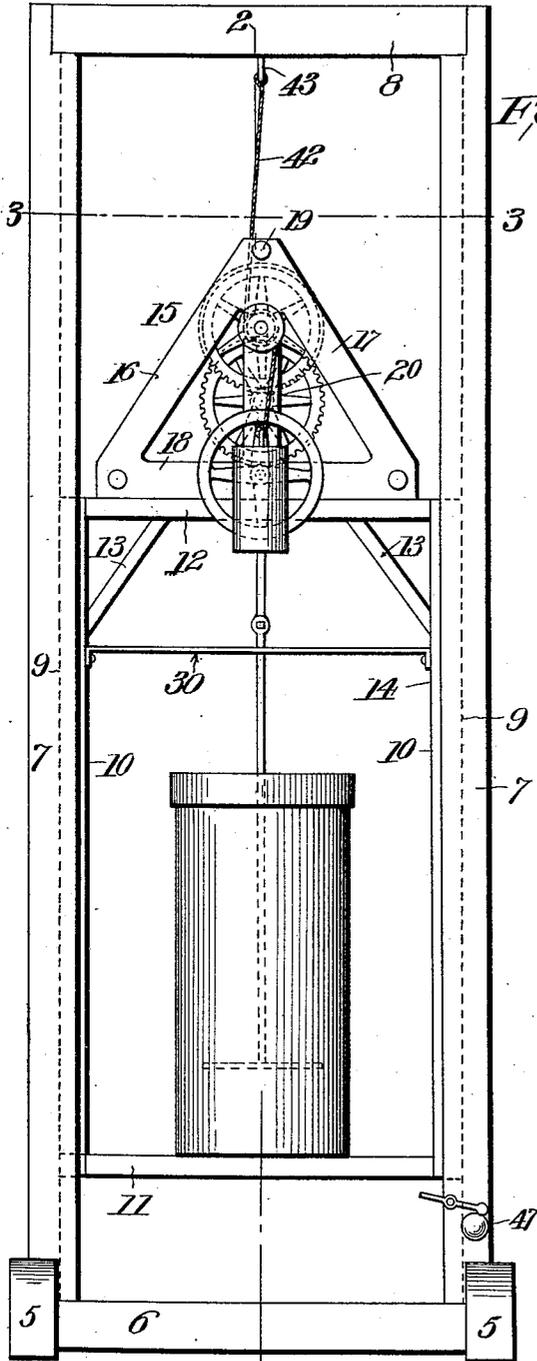


Fig. 1.

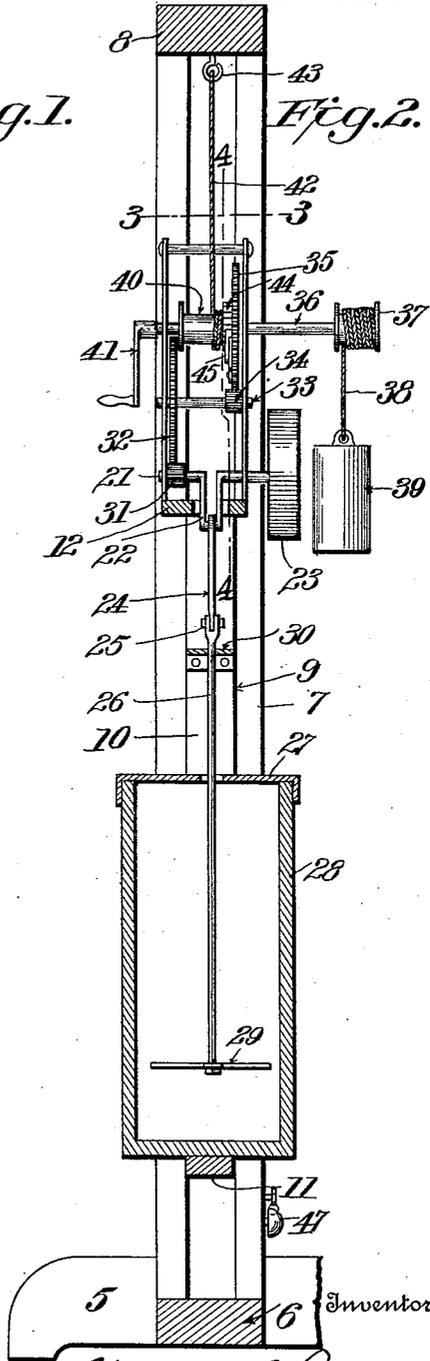


Fig. 2.

Witnesses
 C. Walker
 J. T. Walker

Inventor
 George W. Brewer
 By *[Signature]*
 Attorney

G. W. BREWER.
 MOTOR.
 APPLICATION FILED OCT. 5, 1910.

1,008,307.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 2.

Fig. 3.

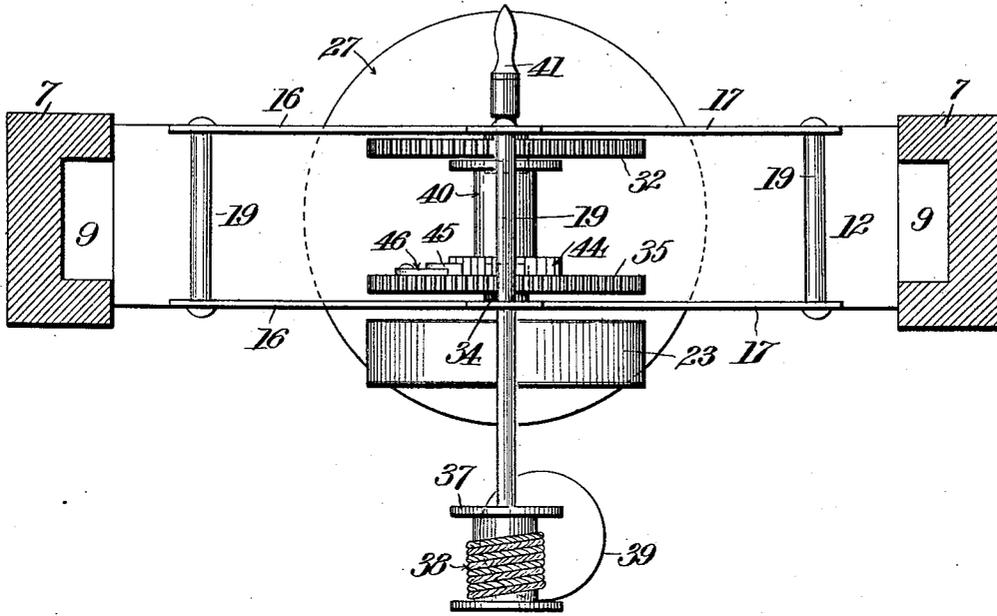
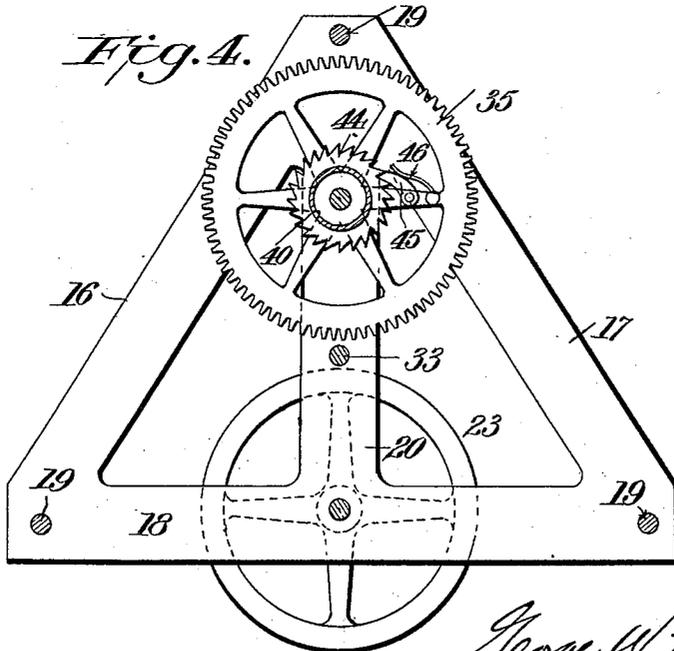


Fig. 4.



Witnesses
J. T. Walker.

Inventor
George W. Brewer

By *J. H. Hoernlein*
 Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. BREWER, OF CLIO, KENTUCKY, ASSIGNOR OF ONE-HALF TO E. N. EARLY,
OF CLIO, KENTUCKY.

MOTOR.

1,008,307.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed October 5, 1910. Serial No. 585,463.

To all whom it may concern:

Be it known that I, GEORGE W. BREWER, a citizen of the United States, residing at Clio, in the county of Whitley and State of Kentucky, have invented certain new and useful Improvements in Motors, of which the following is a specification.

This invention relates broadly to churns, although the working gearing and actuating parts may be applied to many other classes of machinery, such extended uses readily suggesting themselves to the skilled mechanic or operator.

The broad object of the invention is to provide improved operating mechanism for churns or analogous devices, which will decrease the labor required in the operation of the machine, relieve the operator of the necessity of continuously working the machine, and permit the operator to start the machine and then give his attention to other matters until the machine again requires his attention, the machine, in these intervals, being self operating and requiring no attention whatever. With this object in view, the invention consists in the improved construction, arrangement and combination of parts hereinafter fully described and afterward specifically claimed.

In order that others skilled in the art to which my invention appertains may be enabled to readily understand and operate it, I will now proceed to fully describe the construction and operation of a preferred embodiment of the invention, illustrated in the accompanying drawings, in which—

Figure 1 represents a view of the complete device in elevation. Fig. 2 represents a vertical sectional view taken on the plane indicated by the broken line 2—2 of Fig. 1. Fig. 3 represents a transverse sectional view, on an enlarged scale, through the framework on the plane indicated by the broken line 3—3 of Figs. 1 and 2, the parts below this plane being represented in plan view and the cord being omitted from the inner drum, and Fig. 4 represents in elevation, on an enlarged scale, the parts to the right of the plane indicated by the broken line 4—4 of Fig. 2.

Like reference characters mark the same parts wherever they occur in all the figures of the drawing.

Referring specifically to the drawing, 5, 5 indicate strips or feet upon which the frame

of the machine rests, said feet being connected by a cross beam 6 and supporting uprights 7, 7, which are connected by an upper beam 8.

The inner sides of the uprights 7 are provided with vertical grooves 9 which extend from the top to the bottom of the uprights and are adapted to receive the vertical side pieces 10 which are slidably mounted therein, and are connected by a lower cross beam 11 and an upper cross beam 12 and may be suitably braced, as at 13. The uprights 10 and connecting beams 11 and 12, with other braces, form a frame, which I shall designate as the churn supporting frame and which is indicated by the single reference character 14.

Supported upon the upper end of the frame 14 is a gear frame 15 consisting of triangular sides 16, 17 and 18, connected by cross bars 19, vertical side bars 20 connecting the horizontal bar of the triangular frame with the apex thereof at the top on each side. Journaled in the frame 15 is a shaft 21 which is provided with a central crank 22 and with a fly or balance wheel 23, a pitman 24 depending from the crank 22 and pivotally connected at its lower end at 25 to a piston rod 26 which passes through the lid 27 of a churn 28 which is supported upon the bottom cross bar of the sliding frame 14. The piston 26 carries at its lower end, within the churn, a dasher 29, the upper end of the piston, just below its connection with the pitman, passing through an opening in a transverse metal plate 30.

By means of this construction, it will be obvious that whenever the shaft 21 is rotated, the dasher 29 will be reciprocated within the churn, and the shaft 21 and churn 28 being both supported upon the sliding frame, this reciprocation will not be interrupted no matter in what position in the main frame, the sliding frame may be located.

On the shaft 21 is mounted a pinion 31 which meshes with a gear wheel 32, mounted on a shaft 33, which shaft is journaled in the gear frame 15 and carries a pinion 34 which engages a gear wheel 35 mounted on a shaft 36 journaled in the gear frame 15 above the shaft 33.

The shaft 36 carries on one end a drum 37 adapted to receive a cord or cable 38

which depends therefrom and supports at its lower end a weight 39. The shaft 36 also carries a second or inner drum 40 and at its opposite end a crank handle 41. A
 5 cord or cable 42 is wound upon the inner drum 40 in the opposite direction from that in which the cord 38 is wound upon the outer drum 37, the cord 42 passing upward from the inner drum 40 and being secured
 10 to a hook 43 depending from the upper cross beam 8 of the main frame.

From the foregoing it will be obvious that when the sliding frame 14, carrying the churn, moves downward, carrying the shaft
 15 36 with it, the cord 42 will unwind from the drum 40 and cause said drum, and the shaft 36, with the drum 37, also to rotate. This rotation will unwind the cord 42 from the drum 40 and will thus cause the weight
 20 39 to be raised, provided only that the weight of the sliding frame, the churn carried thereby, and its contents are sufficiently heavy to effect this purpose. This same rotation of the shaft 36 will carry with it the
 25 gear wheel 35 and through the chain of gearing, consisting of the pinion 34, gear wheel 32 and pinion 31, will cause the shaft 21 to rotate, which, through the medium of the crank 22, pitman 24 and rod 26, will
 30 cause the dasher 29 to reciprocate within the churn, all of these parts always maintaining their relative position toward each other by virtue of being supported by the one sliding frame 14.

The mechanism thus far described is sufficient to perform the operation of churning, it being only necessary when the sliding frame with the churn thereon shall have reached its lowermost position, at which
 40 time the weight 39 will have reached its highest position, to raise the sliding frame (carrying the churn and gearing) up so that it will again fall by its own weight. The raising of the frame 14 will unwind the
 45 cord 38 from the drum 37 and cause the cord 42 to be wound upon the drum 40, the weight 39 assisting in raising the sliding frame to its initial position ready for another churning operation. After each
 50 churning operation, or when the churning is finished, the churn may be removed from the sliding frame and its contents removed in any usual manner.

The operation of raising the sliding frame could be effected by turning the shaft 36 by means of the crank arm 41 in the proper
 55 direction to wind up the cord 42 on the drum 40 and unwind the cord 38 from the drum 37, but without further mechanism, the restoring of the frame 14 to its upper
 60 position and the moving of the weight 39 to its lower position would cause the gearing to operate, which would render this adjusting operation somewhat laborious and
 65 difficult. I have therefore provided means

whereby this readjustment of the sliding frame may be effected without causing the rotation of the gearing and consequent operation of the churning mechanism. For
 70 this purpose I have loosely mounted the gear 35, on the shaft 36 and rigidly mounted a ratchet wheel 44 thereon and pivoted to the gear wheel 35 a pawl 45 normally pressed into engagement with the teeth of
 75 the ratchet wheel 44 by means of a spring 46. When the motion of the shaft 36 is reversed in the manner hereinbefore described, by raising the frame 14 or rotating the crank arm handle, the shaft 36 will be permitted to rotate so as to wind the cord 42
 80 on the drum 40 and thus permit the sliding frame 14 to move to its highest position, while the weight 39 is moving down to its lowermost position, without turning the gear 35 and its connected gearing. When,
 85 however, the frame 14 again slides downward, the shaft 36 and ratchet wheel 44 will be rotated and this rotation will be transmitted to the whole train of gearing including the churn dasher, by the engagement of the teeth of the ratchet wheel with the pawl 45, and another operation of churning will take place. 90

With the mechanism described, the operator will be required to simply raise the sliding
 95 frame carrying the churn in its high position as set forth, when it will automatically perform one complete operation, continuing until the frame shall have reached the lower end of its stroke, during which time no at-
 100 tention whatever need be given to the churn by the operator. The end of this operation may be audibly indicated by a suitable alarm operated by any moving part of the device, such as the sliding frame 15, as indicated at
 105 47. This alarm may consist of any preferred construction of audible alarms, operated in any known manner, it being only necessary that it shall be operated by the sliding frame or other moving part at the
 110 end of the churning operation. The length of time required to complete a single operation of churning, and consequently the length of time during which the operator will not be required to pay attention to the
 115 machine will depend upon the difference in speed of rotation of the shaft 36 and the shaft 21, which time may be changed at will by altering the relative size of the various gears and pinions of the train of gearing
 120 and I desire it to be understood that my invention is not confined to any particular degree of speed of operation, both of which may be altered to suit the fancy or convenience of the operator. 125

While I have specifically described the construction of the various parts composing this preferred embodiment of my invention, it will be obvious that many changes and variations may be made in the construction 130

of such parts without departing from the spirit and scope of the invention.

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

1. The combination with a sliding article supporting means, a shaft journaled in the sliding article supporting means, two drums carried by the shaft, a cord on one drum extended upward and secured to the upper end of said article supporting means, a cord on the other drum carrying a weight, and a train of gearing connected with the shaft and actuated by the weight of the sliding article supporting means and that which it supports.

2. The combination of a frame, a sliding article supporting means mounted in said frame, a shaft journaled in the sliding article supporting means, two drums carried by said shaft, a cord on one drum which is secured to the upper end of said frame, a cord on the other drum carrying a weight, a crank shaft journaled in the frame, an element having connection with the crank shaft for reciprocation thereby, and gearing connecting the two shafts actuated by the weight of the sliding article supporting means and its contents.

3. The combination of a frame, a sliding article supporting means, a shaft journaled in said means, a drum fixed on said shaft, a cord on the drum connected to the top of the frame, a gear loose on the shaft, a spring pawl pivoted on the gear, a ratchet wheel fixed on the shaft and cooperating with the pawl and a gear mechanism for operating the drum.

4. The combination of a frame, a sliding article supporting means mounted in the frame, a shaft journaled in the sliding article supporting means, a drum on the shaft, a cord on the drum connected to the top of the frame, a gear loose on the shaft, a spring pawl pivoted on the gear, a ratchet wheel fixed on said shaft and cooperating with said pawl, a second drum fixed on the shaft, a cord depending from said drum a weight attached to the cord and a gear mechanism

operable to rotate said shaft to effect sliding movement of the article supporting means.

5. A motor of the character described comprising a frame, a sliding frame mounted in the aforesaid frame, a shaft journaled in the second frame, spaced drums on said shaft, a crank shaft also journaled in the second frame, a cord having connection with one of said drums and the first frame, a cord having connection with the other of said drums, a weight carried by the latter cord and a gear mechanism between said shafts to effect rotation of the shafts.

6. A motor of the character described comprising a frame, a second frame slidably mounted in the first frame, a shaft journaled in the second frame, drums on said shaft, a crank shaft also journaled in the second frame, a reciprocating element carried by the crank shaft and reciprocated thereby, a cord connection between one of said drums and the first connection, a cord having connection with the other of said drums, a weight having connection with the latter cord, and a gear mechanism arranged between said shafts to rotate them under the influence of the weight of the sliding frame and the weight which connects one of said cords.

7. The combination of a frame, a sliding frame mounted in the first frame, a churn body carried by the sliding frame, a motor mechanism disposed on the sliding frame and movable therewith, a connection between the motor mechanism and the first frame, a reciprocating dasher connected with the motor mechanism and extending into the churn body and a weight having connection with the motor mechanism to move the sliding frame and its contents in one direction, the sliding frame and its contents being movable in the opposite direction against the action of said weight.

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

GEORGE W. BREWER.

Witnesses:

CHAS. FINLEY,
R. S. ROSE.