(No Model.)

A. B. TALBOTT.

CHURN MOTOR.

No. 588,193. Patented Aug. 17, 1897.

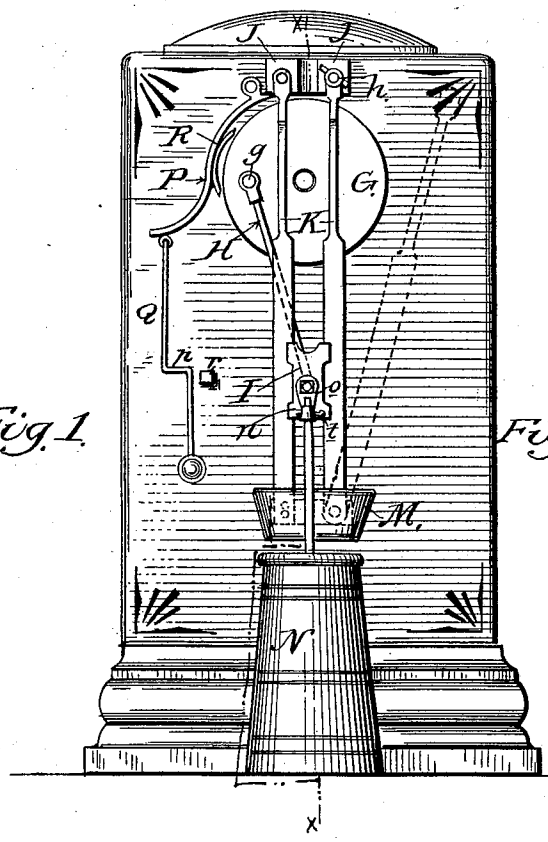


Fig. 1.

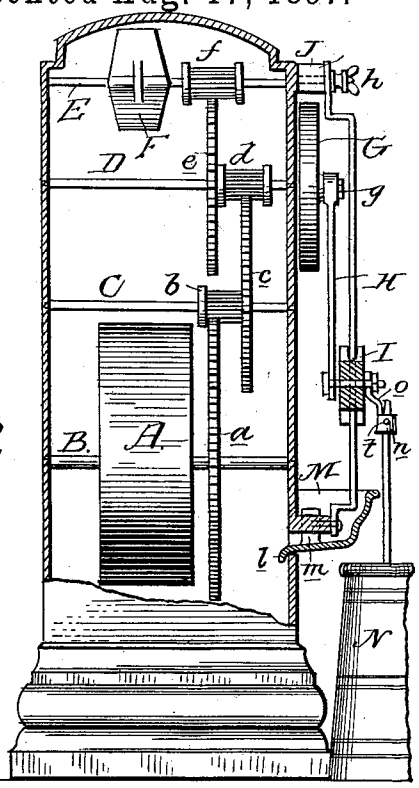


Fig. 2.

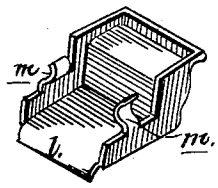


Fig. 3.

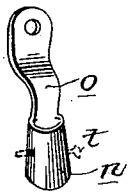


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

ASA BURTON TALBOTT, OF CRAIGMOOR, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO WIRT STOUT, OF MOUNT CLARE, WEST VIRGINIA.

CHURN-MOTOR.

SPECIFICATION forming part of Letters Patent No. 588,193, dated August 17, 1897.

Application filed March 29, 1897. Serial No. 629,689. (No model.)

To all whom it may concern:

Be it known that I, ASA BURTON TALBOTT, a citizen of the United States, residing at Craigmoor, in the county of Harrison and State of West Virginia, have invented certain new and useful Improvements in Churn-Motors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to churn-motors; and it consists of the parts and the constructions and combinations of parts which I shall hereinafter fully describe, and point out in the claims.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 represents a side elevation of a churn-motor embodying my invention. Fig. 2 is a sectional view on the line *x x* of Fig. 1. Fig. 3 is a perspective view of the drip-cup into which the surplus lubricant is directed, whereby it is kept out of contact with the churn and its dasher. Fig. 4 is a perspective view of the swinging link carried by the cross-head, showing its socket into which the upper end of the dasher-stem is fitted.

In the drawings like letters of reference indicate corresponding parts throughout the several figures.

In carrying forward my invention I construct a frame or casing of suitable material and design adapted to support the operative parts and to house the gearing and power appliances through which the churn-dasher is reciprocated. The motor for driving said dasher may be of any appropriate character, but is preferably of the type known as "spring-motors," in which a windable spring A on a power-shaft B drives a train of gearing which comprises a gear-wheel *a* on the power-shaft B, adapted to mesh with and drive a pinion *b* on a shaft C, said shaft C carrying also a large gear-wheel *c*, which meshes with and drives a pinion *d* on a shaft D, said shaft D having also a gear-wheel *e*, which meshes with and communicates motion to a pinion *f* on a shaft E, having the well-known form of governor F. These parts may be of any well-known form, and for the windable spring may be substituted its recognized equivalent, a weight, without departing from the spirit of my invention.

The shaft D is extended through one side of the casing and has secured to it a wheel or disk G, provided with a wrist pin or crank *g*, to which is pivotally connected one end of a pitman or connecting rod H, whose opposite end is pivotally secured to the inner face of a cross-head I, whereby said cross-head is vertically reciprocated by the rotation of the wheel or disk.

Projecting from the side of the casing on which is the wheel or disk G are two lugs J, and to these lugs are secured the opposite ends of two parallel bars or rods K, separated from each other to form a vertical guide for the cross-head to reciprocate in. The portions of the rods which engage the cross-head are preferably flattened, and their inner edges or walls are designed to enter grooves formed in the sides of the cross-head, thereby forming an accurate and strong guide for the cross-head during the reciprocations imparted to it by the wheel or disk G and its pitman or connecting rod.

The parallel guide-rods are sufficiently removed from the side of the casing to permit the wheel or disk G and the pitman to operate without danger of striking the rods, and that this object may be attained the rods are bent inward at their opposite ends and secured to the lugs J before described.

In order that the cross-head may be removed for the purpose of cleaning or otherwise, I prefer to pivot one of the guide-rods K at one end and so secure the opposite end by a set-screw *h* or other locking means that said latter end may be released and the bar swung laterally about its pivot and away from the companion rod. This will expose the cross-head and allow it to be removed for any purpose whatever.

Beneath the lower portions of the rods is a drip-cup M, which is designed to catch any oil or lubricant that may run down the rods or drop from the cross-head or other joints above and thereby prevent its finding its way to the churn and injuring it contents. This drip-cup overhangs the churn to give the best protection to the contents of the latter, and it is removably secured in position, so that it may be detached and cleaned when desired. In construction the drip-cup has a surrounding flange to retain the drip, and at its inner

side is formed a downturned top or flange *l*, which is designed to pass into a slot made in the side of the casing, whereby any oil or lubricant entering the cup is directed inside of the casing and away from the churn and its dasher-stem. On the sides of the drip-cup are spring arms or clips *m*, which are adapted to spring over the lug to which the lower ends of the guide-rods K are secured when the cup is placed in position and which readily yield to permit the removal of the cup for cleaning purposes when a slight pressure is brought to bear on the cup. By this arrangement all possibility of oil running down the dasher-stem or falling into the churn from the joints and parts above is obviated, thus insuring clean and wholesome butter.

The churn N is of the ordinary type and has a single vertically-reciprocating dasher. The dasher-stem passes through a socket *n* in the lower end of a link *o*, whose upper end is bent inward to one side of the plane of the stem, and it is pivotally secured to the cross-head, so that the stem may have a yielding movement about the pivot on the cross-head. This will be found desirable, as the churn may be set a little to one side or the other of the true vertical line of the cross-head without danger of the stem being broken or cramped during its reciprocations, which would be the case in those churns in which the dasher-stem has a fixed or rigid connection with a cross-head or other reciprocating piece. Through the socket end *n* of the arm is made a hole, and through this and a hole made transversely in the dasher-stem is passed a pin *t* for securing the parts together. The making of this hole is the only change required to fit the ordinary single-dasher churn to this motor.

To stop the motion of the parts quickly and without jar, I employ a brake which consists of a curved spring-plate P, which is pivoted at or near one end and carries at its free end a swinging rod Q, having a bend or offset at *p*, adapted to engage a stud or lug *r* on the side of the casing, said rod having also a handle-piece by which it is conveniently moved.

The spring-plate P has a second plate or shoe R secured to it between its extremities, which, when the rod Q is forced inward to cause the offset to engage the lug *r*, is caused to bear on the periphery of the wheel or disk I and serve as a brake to check its motion and the reciprocation of the cross-head. When the rod Q is released, the spring-plate P lifts away from the disk, carrying the shoe with it, so that the disk is again permitted to rotate.

The invention described possesses the advantage of simplicity and ease of operation, durability, effectiveness, and cleanliness, and the motor may be connected with the common form of churns without any change in the form of the latter.

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

1. In a churn-motor, the combination, with the frame or casing, the operating-shaft having a wheel or disk on its outer end, and means for rotating said shaft, of the cross-head, a pitman or rod connecting the cross-head with the wheel or disk and the parallel bars forming a guide for the cross-head, one of said rods being pivotally secured at one end to permit it to be swung laterally, and means for detachably securing the opposite or free end of said rod.

2. In a churn-motor, the combination, of a frame or casing, the operating-shaft, a wheel or disk on the outer end of said shaft, having a crank-pin, a pitman connected with said pin, parallel-spaced bars forming a vertical guide with one of said bars being pivotally secured at one end so that it may be swung laterally, means for detachably securing the free end of said bar and fixing said bar in position, a cross-head connected with the pitman and operating in the guide formed by the bars, and having grooved sides to engage said bars, and means for connecting the cross-head with the stem of a churn-dasher.

3. In a churn-motor and in combination with a reciprocating cross-head, and means for operating the same, and a vertical guide in which the cross-head travels, the means for catching the surplus lubricant or drip and keeping it out of contact with the churn, consisting of a drip-cup below the parts receiving the lubricant and into which the surplus oil or drip is directed.

4. In churn-motors having a vertical guide and a reciprocating cross-head and means for operating it, a drip-cup placed below the guide and cross-head for the purpose of receiving the surplus lubricant or drip, said cup having spring-arms engaging a fixed lug on the frame of the motor whereby it is detachably secured in position.

5. A churn-motor comprising a frame with lugs on its exterior, a spring-motor contained within the frame and including a driven shaft having a wheel or disk on one end, exterior of the frame, parallel-spaced bars having opposite ends secured to said lugs and their intermediate portions bent outward, one of said bars being pivotally secured at one end so that it may be swung laterally, a cross-head adapted to reciprocate in the guide formed by said bars, a pitman connecting the cross-head with the wheel or disk, a drip-cup below the bars and cross-head, a brake for the wheel or disk and a pivoted link on the cross-head having a socket in which the stem of the dasher may be secured.

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

ASA BURTON TALBOTT.

Witnesses:
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