

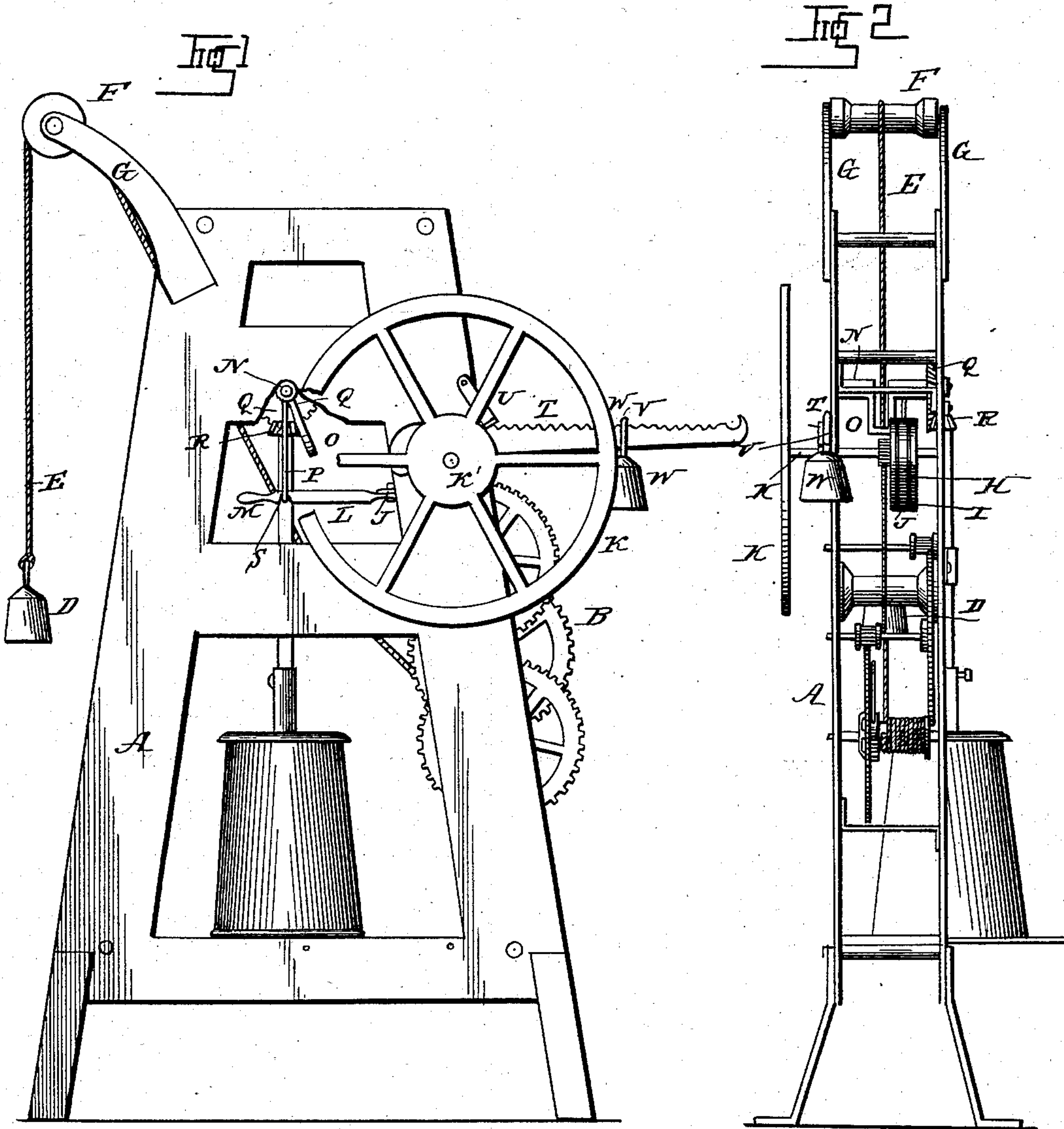
(No Model.)

G. B. & G. H. SMITH.

CHURN MOTOR.

No. 282,389.

Patented July 31, 1883.



WITNESSES:

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CHURN-MOTOR.

SPECIFICATION forming part of Letters Patent No. 282,389, dated July 31, 1883.

Application filed June 25, 1883. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. SMITH and GEORGE H. SMITH, of Latrobe, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Churn-Motors; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of our improved churn-motor. Fig 2 is a view from the opposite side, showing part of the frame broken away.

Similar letters of reference indicate corresponding parts in all the figures.

Our invention has relation to mechanical powers of that class in which a churn-motor is adapted to give either rotary reciprocating or rotary motion to the dasher of the churn, as may be desired; and it consists in the improved construction and combination of parts of the same, as will be hereinafter more fully described and claimed.

In the accompanying drawings, A represents the frame which supports the clock-movement B, which is of ordinary construction. This movement may be operated by an ordinary clock-spring, or, as shown in the drawings, by a weight, D, fastened to the free end of a cord, E. This cord passes over a pulley, F, held between the upper extremities of the arms G, secured to the top of the frame and extending upward, the arms being of such a length as to raise the pulley F sufficiently above the ground to allow the cord E to run out before the weight D touches the ground.

H represents a solid metal eccentric secured upon the upper shaft or axle of the train B, and having an annular groove or recess, I, into which a metallic strap or band, J, fits. To the end of the axle K' which projects outside of the frame is attached a fly-wheel, K.

L represents a pitman bolted or riveted at one end between the ends of the band J, the free end of the pitman being rounded to form a convenient handle, M. A shaft or axle, N, is journaled in the upper part of the frame A, having at its central part a double crank, O. To the

shaft N is also fastened a downwardly-projecting rod, P, having its lower end bent at right angles. A bevel-wheel, Q, on the end of the shaft N meshes with a bevel-pinion, R, on the upper end of the dasher-rod. The pitman L has a slot, S, in its lower edge, near the handle M, of such a size as to fit over either the bent end of the rod P or the pin of the crank O.

When it is desired to give the churn-dasher a rotary reciprocating motion, the slot in the lower edge of the pitman is slipped over the bent end of the rod P, when, as will readily be understood by reference to the drawings, the eccentric H, turning upon its axle, will communicate to the churn-dasher, through the intermediate gearing previously described, a rotary reciprocating motion. When it is desired to give the churn-dasher a rotary motion, however, by taking hold of the handle M of the pitman the bent end of the rod P can be freed from the slot S on the lower edge of the pitman, when the free end of the pitman can be raised, in order to connect the said end by means of the slot in its under edge to the pin of the crank O, when a rotary motion will be given to the churn-dasher.

T represents a brake pivoted at one end to the outside of the frame A, just above the outwardly-projecting end of the axle K', which carries the fly-wheel K, previously referred to. This brake is held out of the way of the axle K', when not in use, by a keeper, U, pivoted at one end to the outside of the frame A. The object of this brake is to regulate the speed with which the eccentric H revolves, and through it the speed of the churn-dasher. On the upper edge of the handle of the brake T are a series of notches, V, in which fits the ring or hook of a weight, W. When it is desired to lessen the speed with which the motor is running, the brake T is freed from the keeper U and pushed down until its lower edge rests upon the rod or axle K', between the side of the frame and the fly-wheel K. The weight is then adjusted upon the notched edge of the brake, in order to regulate the amount of pressure which the brake exerts upon the said axle, the weight being of such a size that, when adjusted upon the extreme outward end of the handle of the brake, it will cause the motor to

come to a dead-stop. When it is desired to free the axle from the brake, the brake is lifted up until it engages the end of the keeper U.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of our improved churn-motor will readily be understood without requiring extended explanation.

It will be seen that by constructing the eccentric of solid metal, its weight, being chiefly on one side, will effectually overcome the tendency of the running-gear to stop when it reaches its dead-center.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a churn-motor of substantially the described construction, the combination of the frame A, having pivoted keeper U, drive-shaft K', having fly-wheel K, mechanism for operating the drive-shaft, and brake T, having adjustable weight W, substantially as and for the purpose shown and described.

2. In a churn-motor of substantially the described construction, the combination of the shaft or axle N, having on its end a bevel-wheel, Q, adapted to mesh with a bevel-pinion, R, on the end of the dasher-rod, and provided with a double crank, O, and downwardly-projecting arm P, arranged as described, weighted eccentric H, provided with an annular groove, I, band J, and pitman L, having at its outer end an upwardly-extending notch, S, adapted to engage either the bent end of the arm P or the pin of the crank O, all constructed and combined substantially as and for the purpose shown and described.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

GEORGE B. SMITH.
GEORGE H. SMITH.

Witnesses:

P. COSTELLO,
F. E. FITCH.