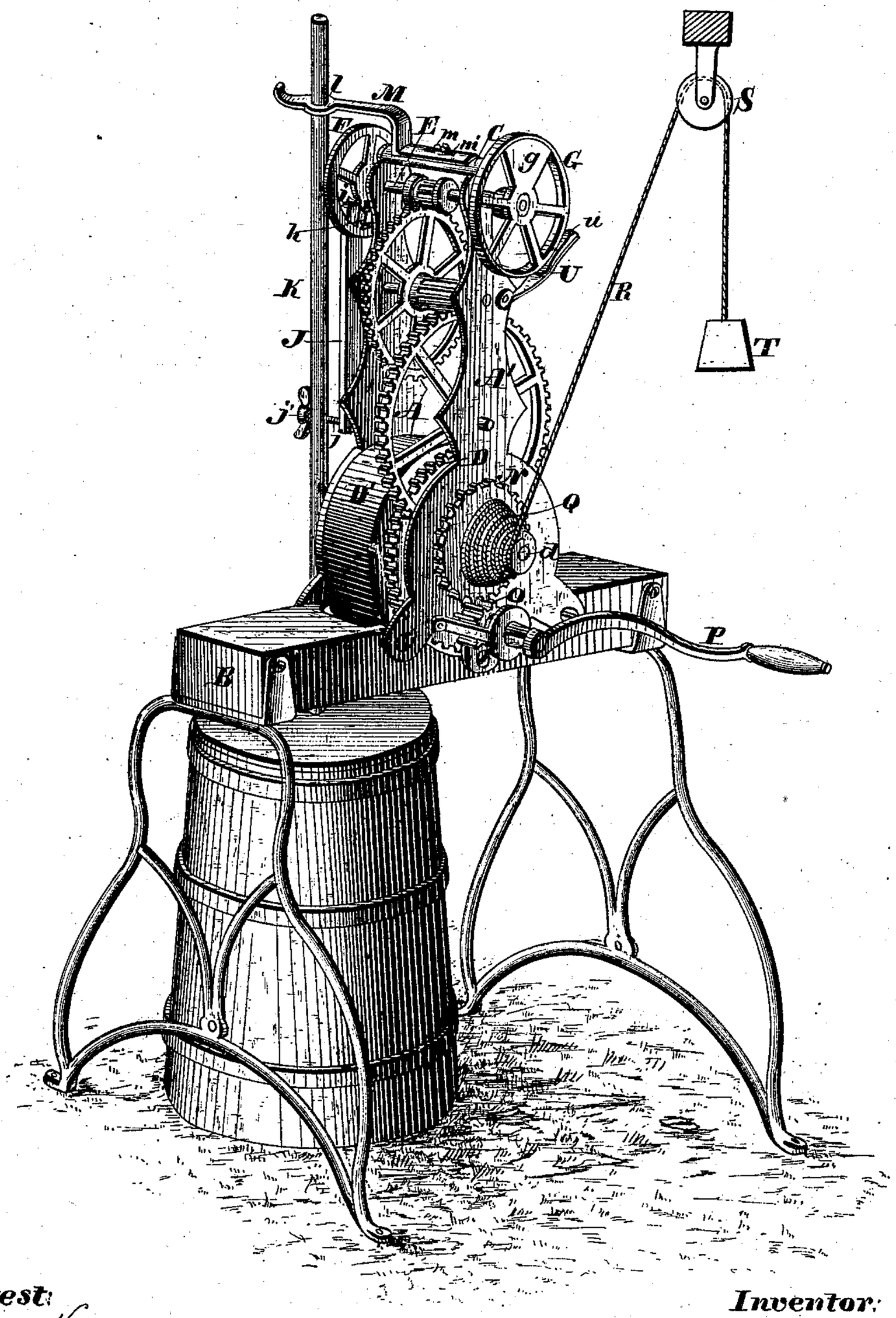
N. J. MILLER.
Mechanical Motor.

No. 228,098. Patented May 25, 1880.



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UNITED STATES PATENT OFFICE.

NOAH J. MILLER, OF COLLINSVILLE, TEXAS.

MECHANICAL MOTOR.

SPECIFICATION forming part of Letters Patent No. 228,098, dated May 25, 1880.

Application filed January 12, 1880.

To all whom it may concern:

Be it known that I, NOAH J. MILLER, of Collinsville, in the county of Grayson and State of Texas, have invented certain new and useful Improvements in Mechanical Motors; and I 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 drawing, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in motors adapted especially for domestic use, its object being to provide a cheap, compact, durable, and efficient automatic motive mechanism which may be utilized for driving various household apparatus, such as churns, cradles, fly-brushing machines, sewing-machines, and other implements.

My invention consists in a novel combination and arrangement of devices, whereby the motor is readily connected to different machines and a smooth and uniform movement is secured.

The accompanying drawing represents a perspective view of my improved motor.

The letters A A′ indicate two upright plates, in which are formed the bearings of the various arbors of the train of gear-wheels, the lower ends or feet of these plates being secured to the bench B, and their upper ends connected by a cross-bar, C. To the shaft *d* of the main wheel D, between the lower ends of the plates A A′, is secured the inner end of a coiled motive spring or springs, the outer end of which is secured to the inner periphery of a barrel, D′, which is firmly fixed to the inner side of the plate A. The top shaft, E, of the train carries at one of its projecting ends a crank-wheel, F, and at its other end a balance-wheel, G. The crank-wheel F has through it a slot, *h*, extending from near its center to near its periphery, and in this slot is arranged an adjustable wrist-pin, *i*, with which is connected the pitman J, having its opposite end, in the present instance, connected, by means of a screw-pin, *j*, and thumb-nut *j′*, with the reciprocating dasher-rod K of a churn, the upper end of the said dasher-rod projecting through a guide-bearing, *l*, carried by an adjustable arm, M, which is secured to the cross-bar C by means of a screw, *m*, setting through a slot, *m′*.

By means of the adjustable arm M and screw-pin *j* the reciprocating dasher-rod or any other similar reciprocating device may be connected with the motor at varying distances therefrom.

The balance-wheel G has arranged at one side an extra weight, *g*, and the wheel is so keyed upon its shaft as to bring this extra weight on the opposite side of said shaft from the connection of the pitman J with the crank-wheel, in order to balance the shaft and give the pitman and its connections a uniform motion. On the rearwardly-projecting portion of the shaft *d* of the main wheel is arranged a gear-wheel, N, which meshes with a pinion, O, carried by a short shaft having at its end the crank P. By means of this crank and the gear-wheel and pinion the spring is wound up.

Outside the gear-wheel N, on the main shaft, is fixed a fusee, Q, to which is connected a cord, R, passing upward and over a pulley, S, which may be secured to a cross-beam, ceiling, or other object, and has attached to its depending end a weight, T, which may be heavier or lighter, as desired, to control the speed of the machine. The object of this fusee, its cord, and weight is to give a uniform speed to the motor-train, the cord being upon and unwinding from the smaller portion of the fusee when the spring or springs are wound up completely, and gradually unwinding from a larger diameter of the frame, and exerting a greater force upon the shaft as the spring or springs by unwinding spend their force. Thus the increasing power of the fusee compensates the decreasing power of the spring or springs.

The letter U indicates a brake-arm pivoted to the plate A, and having its free end provided with pad *u*, of leather or similar material, in position to be swung against the periphery of the balance-wheel.

By locating the motive spring or springs, its inclosing-barrel, the winding apparatus, and regulating-fusee at the lower end of the motive train, I give the motor a firm base and steadiness of action which it would not otherwise have, and by mounting the motor upon the

bench B it is placed in position to be readily connected to almost any machine of ordinary domestic use.

It will be obvious that a cord and weight may be used in lieu of the spring as a prime motor for rotating the shaft *d*, and in this case the portion of said shaft between the front and rear supporting-plates, A A, should be formed as a windlass, to which the cord may be attached and pass over a pulley to a weight. When a cord and weight are thus used the fusee and its cord and weight may be dispensed with.

What I claim is—

The combination, with the motor-train below, of the shaft E, geared with said train and carrying at one end the balance-wheel G, having an extra weight on one side, and at the other end the wheel F, having slot *h*, the pitman J, having pin *i*, adjustable in said slot, the piston K, having its intermediate portion adjustably connected to the lower end of said pitman, and the adjustable arm M, having the guide-bearing *l*, embracing the upper portion of said piston, substantially as described.

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

NOAH J. MILLER.

Witnesses:
J. M. DOUGHTY,
J. D. DOUGHTY.