M. F. Spore.

Mechanical Movement.

No. 75591 Patented Mar. 17, 1868

Fig. 4.

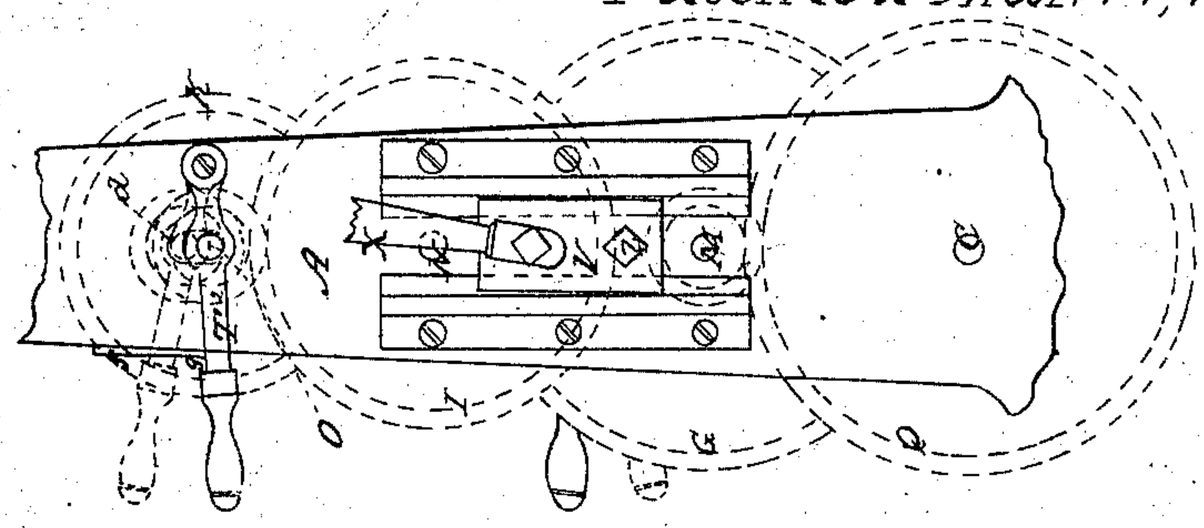


Fig. 3.

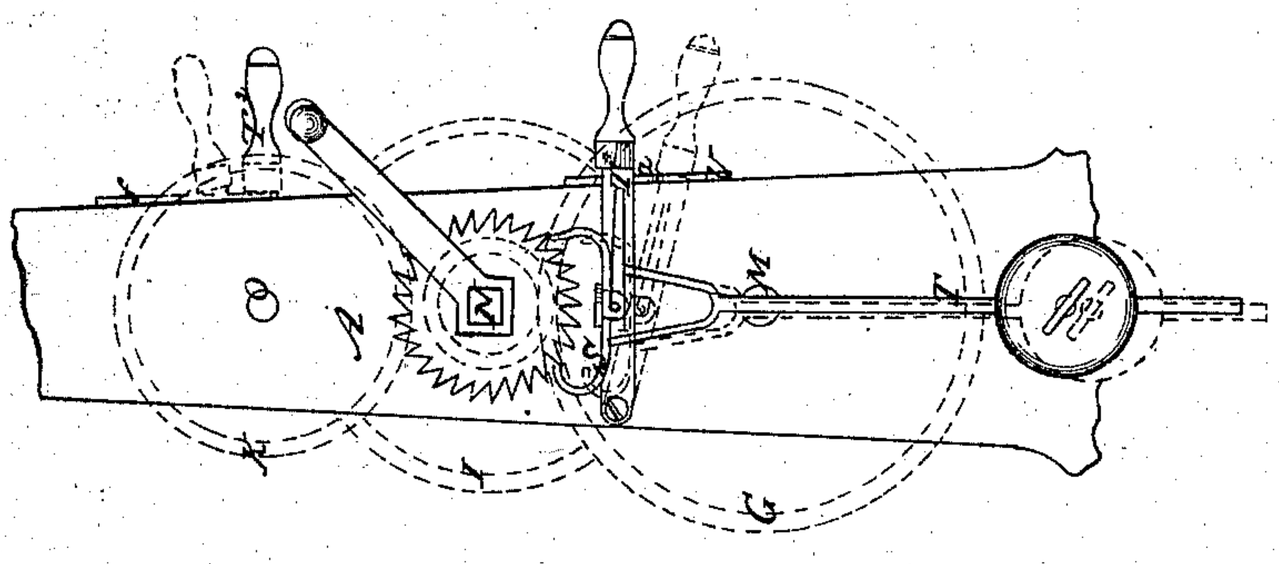


Fig. 2.

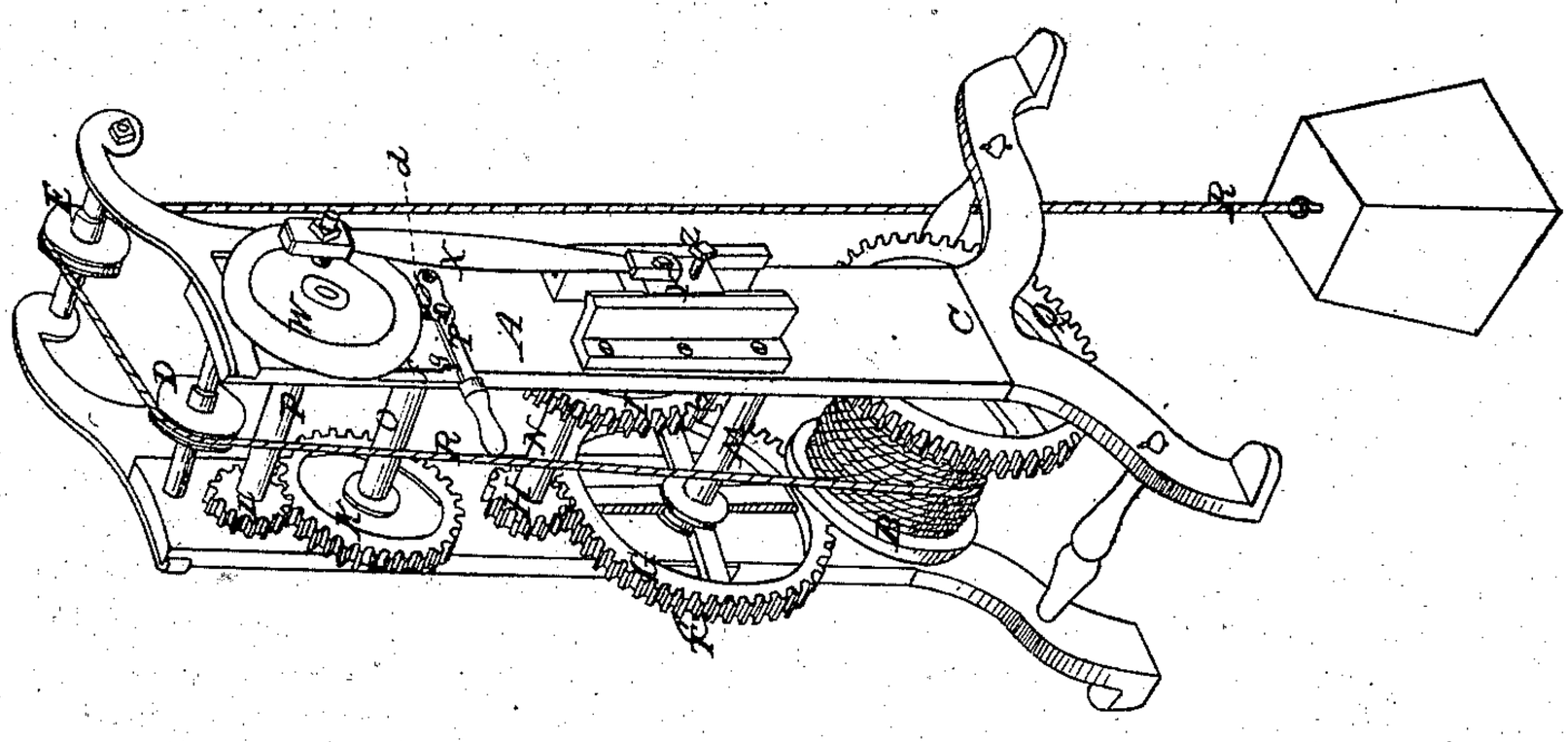
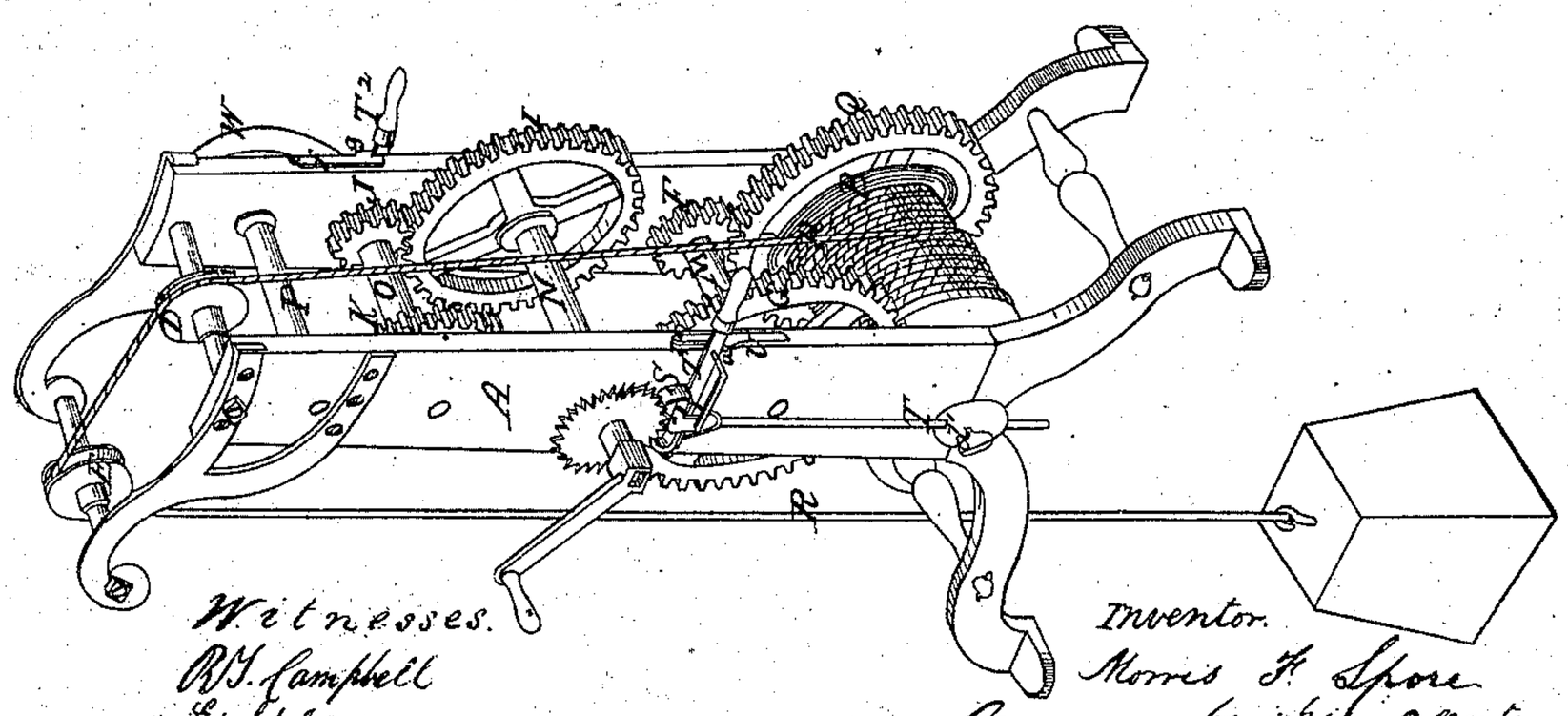


Fig. 1.



Witnesses.
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MORRIS F. SPORE, OF PREBLE, NEW YORK.

Letters Patent No. 75,591, *dated March* 17, 1868.

IMPROVED MECHANICAL MOVEMENT.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MORRIS F. SPORE, of Preble, in the county of Cortland, and State of New York, have invented a new and useful Improvement in Mechanical Movements for operating churns, pumps, and other similar machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a perspective view of my improved mechanical movement, viewed from the right-hand side thereof.

Figure 2 is a similar view, looking at the left side of the machine.

Figure 3 is a partial view of the right-hand side of the machine, illustrating the manner of adjusting the escapement-pallets and pendulum by red lines.

Figure 4 is a similar view of the left-hand side of the machine, illustrating the manner of adjusting the pinion and spur-wheel shaft, which transmits power to the crank-shaft, also by red lines.

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

The invention which I have made is designed to render more useful for general purposes the clock-movement or power heretofore adopted for driving various kinds of machinery, and more particularly for operating churns.

The nature of my invention consists, first, in a novel arrangement of the escapement-pallets and the pendulum upon an adjustable arm or lever, whereby the pallets and pendulum can be readily adjusted, so as to not offer resistance to the escapement-wheel during the winding up of the weight which is to propel the movement; second, and in connection with the foregoing, it further consists in a novel arrangement of the pinion and spur-wheel shaft, from which the power of the clock-movement is transmitted to the crank-shaft of a churn, saw-mill, or pump; said arrangement being such that the friction and resistance heretofore produced by said wheels upon the clock-movement, while winding up the weight thereof, may be removed, and thus the labor and time expended in winding up the weight greatly reduced.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a strong frame, made either of wood or iron, and adapted for supporting the gearing which I employ, and also a reciprocating pitman and slide. At the lower part of this frame, between the two uprights thereof, a flanged drum, B, is arranged upon a shaft, C, and at the top of said frame two pulleys, D and E, are arranged as shown. Around the drum and over the pulleys, the cord or chain which carries the weight is wound and passed, as shown. Between the drum and the shaft of the pulley D a system of gearing, F G H I J K L, is arranged upon shafts M N O P, as represented. The wheel F of this train of gearing gears with a toothed wheel, Q, on the drum-shaft C, and by this means the whole train is set in motion, when the weight is allowed to pull upon the cord or chain R of the drum. The shaft N has an escapement-wheel applied on it outside of the right-hand upright of the frame A, and to the extremity of this shaft a hand-crank for winding up the weight is applied, as represented.

The escapement S, with the pendulum T, is arranged on a lever or pivoted arm T^1, which has one of its ends pivoted to the right-hand upright of the frame A. Its other end is left free, and is furnished with a handle, by which the arm with the escapement and pendulum can be adjusted so as not to gear with the escape-wheel. For the purpose of retaining the lever in a position which will either keep the escapement out of gear or in gear, a stop-plate, U, is applied on the back edge of the right-hand upright of the frame. This plate has a projecting tooth, *a*, upon which the lever rests when the escapement is in gear with the escape-wheel, said tooth being bevelled so that the lever, when a slight outward movement is imparted to it, may be moved downward without obstruction. In order to obtain this slight outward movement, the lever must be pivoted quite loose, or have a slight spring action in itself. The object in thus arranging the escapement is to afford facility for throwing it out of gear when it is desired to wind up the weight.

The shaft O has its journals fitted loosely in the uprights of the frame, one journal being passed through an oblong vertical slot, *d*, of the left-hand upright of the frame A, and supported upon a hand-lever, T^2, which is pivoted to said upright by one of its ends, and left free at its other end. In order to retain this lever in any position desired, a stop-plate, *f*, is applied on the rear edge of the said upright. This stop-plate has a rectan-

gular projection, *g*, formed on it, upon and under which the lever bears accordingly as the lever is adjusted. To get this lever by the stop its pivot must be fitted loosely through it, or the lever must have a spring action in itself. By raising the lever T^2, that end of it which passes through the slot *d* can be raised or lowered, as desired.

The great advantage or object of arranging the shaft O so that one of its ends may be raised, and lowered after having been raised, is that the gear-wheel J may be thrown in and out of gear with the clock-movement—out of gear when the weight is to be wound up, and in gear after it is wound up.

On the left-hand end of the shaft P a crank-wheel, W, is applied, the wrist-pin of said crank-wheel being adjustable, so as to lengthen or shorten the throw of the crank-movement. To the wrist-pin a pitman, X, is attached. This pitman is connected to a slide, Y, which works in guides on the side of the frame, as represented. The slide Y has a connecting-device, Z, which serves to connect the staff of a churn-dasher, piston-rod of a pump, or any other similar machine.

From the foregoing description it is apparent that the action of the weight upon the train of gearing will give a rapid reciprocating motion to the pitman-slide, and while the motion is rapid the unwinding of the weight-cord will be very slow and gradual. The speed of the drum upon which the cord is wound may, however, be quickened by raising the ball of the pendulum, provision, as usual, being made by a set-screw, *d'*, for such adjustment.

My invention will greatly enhance the value of clock-movements as a power for operating machinery; and as such powers can be used for churning, and other purposes, the same operating a churn or pump for twelve or twenty-four hours, automatically, they are very desirable powers for farmers and others.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the escapement-pallets upon a pivoted arm or lever, and employing the same thus arranged in combination with a clock-mechanism, as a means for operating a pump, churn, or other similar machine, substantially as herein described.

2. The arrangement of the shaft which carries the pinion and spur-wheels which transmit the power of the clock-movement to the crank-shaft, upon the frame A, and upon a hand-lever, in such a manner that said wheels can be thrown out of and in gear with the clock-movement, substantially as described.

3. The arrangement of the train of gearing herein described, hand-adjusting levers, pendulum, weight, and reciprocating slide, all substantially as and for the purpose set forth.

MORRIS F. SPORE.

Witnesses:

JOHN L. HAVILAND,

EBEN DALEY.