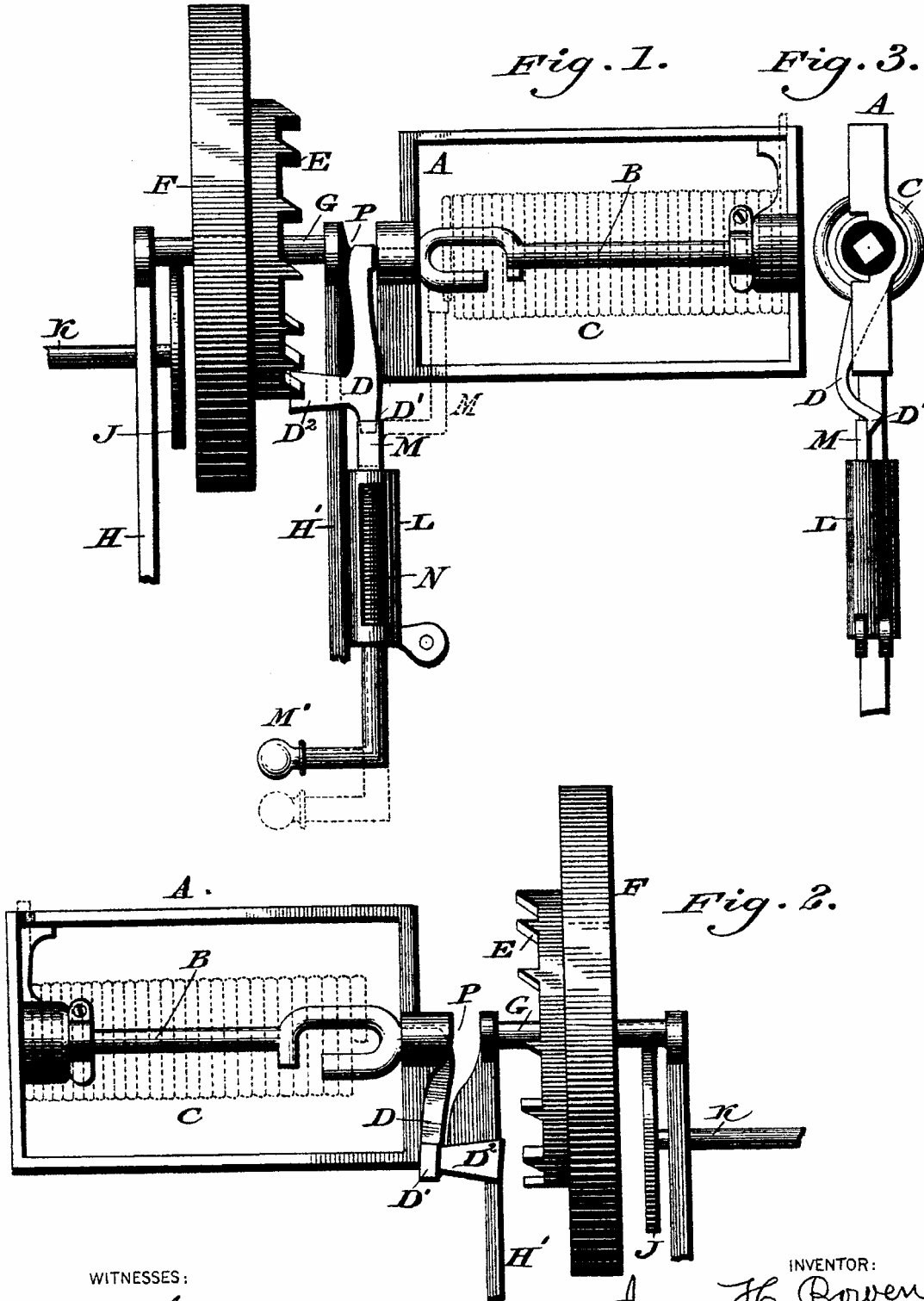


(No Model.)

J. H. BOWEN.  
MECHANICAL MOVEMENT.

No. 425,738.

Patented Apr. 15, 1890.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES H. BOWEN, OF PHILADELPHIA, PENNSYLVANIA.

## MECHANICAL MOVEMENT.

**SPECIFICATION** forming part of Letters Patent No. 425,738, dated April 15, 1890.

Application filed June 11, 1889. Serial No. 313,977. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. BOWEN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful improvement in Mechanical Movements, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a mechanical movement in which the power of a spring is communicated to a wheel through the medium of a dog, which is adapted to engage with a ratchet or teeth on said wheel and then be removed from the path of the same.

Figure 1 represents a side elevation of a mechanical movement embodying my invention. Fig. 2 represents a side elevation of a portion thereof opposite to that shown in Fig. 1. Fig. 3 represents an end view of a portion thereof.

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

Referring to the drawings, A designates a frame, on which is mounted a shaft B, one end whereof is squared for engagement of an operating-key.

C designates a spring, which is connected at one end with the frame A and at the other end with the shaft B, the latter being forked to receive the end of the spring and hold the same. To the shaft is secured a pawl D, which is adapted to engage with a ratchet E, formed on or secured to the side of a power-wheel F, the shaft G of which is mounted on standards or uprights H H', and has in contact with it a friction-wheel J, the shaft K whereof is mounted on the standard H. Secured to the standard H' is a tube or guide L for a sliding bar or latch M, which is held in its uppermost position by a spring N, suitably applied. At the inner end of the frame A is a cam or camway P, in which the inner bent end or axial portion of the pawl D is adapted to play when the same is rotated. The side walls of the said camway are substantially at equal distances from each other and are in planes at an angle to the axis of the shaft B, so that as the shaft rotates and the inner end of the shank of the pawl is partially rotated in the said way the shaft B is moved

endwise in its bearings, and the nose D' of

the pawl is removed from contact with the ratchet-teeth.

The operation is as follows: The shaft B is rotated, whereby the spring C is wound, and the pawl D follows the motion of said shaft, and passes over the teeth of the ratchet.

When the lip D' on said pawl reaches the top of the latch M, the latter is depressed until said lip clears the latch, when the spring N elevates said latch and places its top in front of said lip. The nose D' of the pawl is now engaged with one of the teeth of the ratchet E.

When it is desired to operate the device, the latch M is lowered, for which purpose a handle M' is connected with the same. When the latch clears the lip D', the spring C is operative, whereby its power is exerted on the shaft B, so that the latter is rotated, and with it the pawl D, which being in contact with one of the teeth of the ratchet E communicates motion thereto, so that the wheel F receives rapid motion, the power being communicated to the friction-wheel J, and consequently to the shaft K, the latter being attached to or connected with any mechanism or device requiring power. As the pawl rotates, it rides on the cam or in the camway P, and is thus thrown in the direction from the wheel F and cleared of the path of the ratchet E, whereby it is prevented from striking or being struck by said ratchet. The wheel F continues its revolution by the momentum imparted to it by the contact of the pawl D until its motion is overcome by the friction of the parts and the resistance of the atmosphere. When the spring is again wound, the pawl is moved in a direction the reverse of that when it operates the power-wheel and is carried by the cam or camway toward said wheel F, so that its lip D' may be engaged by the latch M and held preparatory to the next operation of the power-wheel.

It is evident that a lip or other projection may be formed on the shaft B, and the latch M, so disposed that it will engage with said lip and control said shaft, thus accomplishing the same result as that where the latch engages with a lip on the pawl that is stopping the unwinding of the spring, as shown in the drawings, this modification being shown in dotted lines, Fig. 1.

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The motor herein described may be used in connection with a toy or any device for communicating motion to a wheel and shaft. Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A mechanical movement consisting of a spring, a shaft for winding the same, a pawl or detent carried by said shaft, a latch for holding said pawl, and a ratchet-wheel for engagement of said pawl, the parts being combined substantially as described, whereby the pawl may rotate said ratchet and then be removed from the path of the same, as stated.

2. In a mechanical movement, a spring and a shaft for winding the same, in combination with a pawl or detent secured to said shaft and a camway in one end of the frame of

the device, whereby the pawl may be advanced to engagement with the ratchet of a power-wheel and afterward removed therefrom, substantially as described.

3. A motor, consisting of a frame with a camway in one end, a shaft journaled in said frame, a coil-spring secured to said shaft and having its shank adapted to move in said camway, a rotary wheel with a ratchet at its side, and a wheel in contact with said rotary wheel, said parts being combined substantially as described.

JAMES H. BOWEN.

Witnesses:

JOHN A. WIEDERSHEIM,  
A. P. JENNINGS.

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