(No Model.)

T. M. OFFUTT.

REGULATOR FOR SPRING MOTORS.

No. 306,345. Patented Oct. 7, 1884.

Fig. 1.

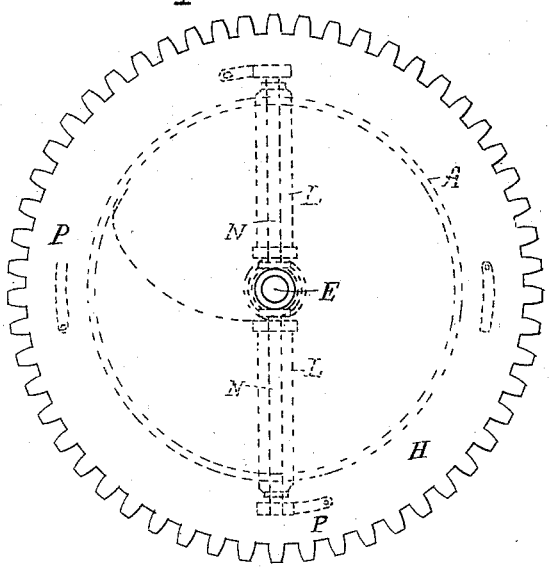


Fig. 2.

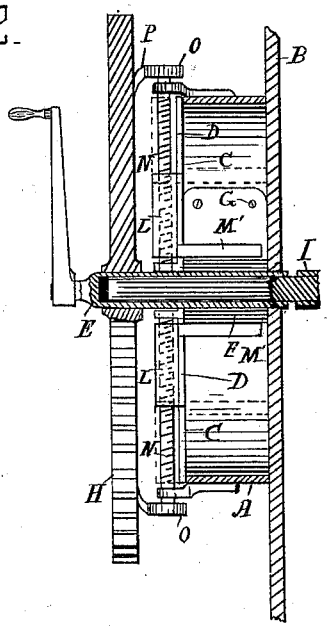


Fig. 3.

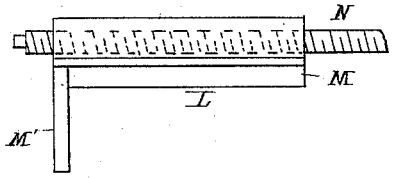


Fig. 4.

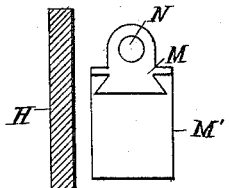
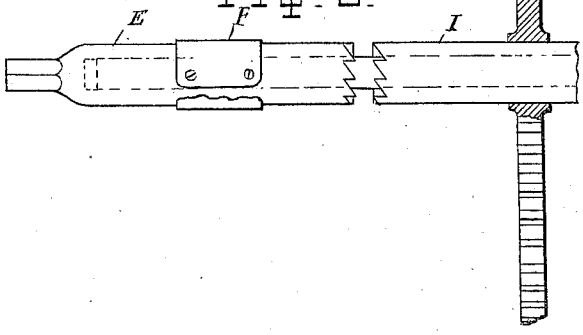


Fig. 5.



Attest:

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UNITED STATES PATENT OFFICE.

THOMAS M. OFFUTT, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-THIRD TO CHRISTIAN A. SCHUSTER.

REGULATOR FOR SPRING-MOTORS.

SPECIFICATION forming part of Letters Patent No. 306,345, dated October 7, 1884.

Application filed July 9, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. OFFUTT, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Regulators for Spring-Motors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in governors for spring-motors, and it has for its object to provide means whereby the expansion of the operating or power spring may be controlled by the action of one of the gears constituting the motor.

With this end in view the invention consists, essentially, in inclosing the power-spring within a casing adapted to support sliding dogs which bear upon the power-spring, and which are operated by screw-threaded shafts adapted to receive rotary motion by frictional contact with the first or power gear of the train of gearing.

In the accompanying drawings, forming a part of this specification, and on which like letters of reference indicate the same or corresponding features, Figure 1 represents a side elevation of the power-gear of a spring-motor, showing my improved regulating devices in dotted lines; Fig. 2, a diametrical sectional view of the same; Fig. 3, a detached view of one of the dogs and its operating-shaft; Fig. 4, an end view of the same, and Fig. 5 a detached side elevation of the spring-sleeve and shaft.

The letter A designates a circular metallic casing, secured to a suitable part, B, of the frame in which the gearing is mounted. The outer face of this casing is inclosed by an end piece, C, which is provided with dovetail slots D at diametrical points for a purpose which shall presently appear.

The letter E designates a metallic sleeve, mounted in the frame-piece B and the cap C so as to be capable of revolving freely. To this sleeve is connected one end, as seen in Fig. 5, of the convolute power-spring F, the other end thereof being firmly secured to the inner side of the casing A, as seen at G in Fig. 2. Also mounted on the said sleeve is the first or power gear, H, of the train of gearing constituting the motor, and which, through the sleeve, receives rotary motion from the spring G. A shaft, I, is fitted within the sleeve E, and is provided with one member, J, of a clutch adapted to engage the other member, K, formed on the end of the sleeve, whereby the said shaft and sleeve may be engaged or disengaged with or from each other.

It is the design of this invention that a second power-gear, like that designated by the letter H, be applied to the shaft I, so as to operate two independent trains of gearing by one power-spring, the spring in this instance to be enlarged so as to accomplish this end.

The letter L indicates the sliding dogs, the same being constructed with dovetail ways M, which fit the correspondingly-shaped slots D in the cap-piece C. The inner ends of this dog are provided with extensions M′, which embrace the outer folds of the power-spring, and with interiorly-screw-threaded apertures. Screw-threaded shafts N, mounted in suitable bearings formed on or attached to the casing B and the cap-piece C, are fitted within these apertures, and provided at their outer ends with disks O, having their peripheries slightly roughened or milled. The power-gear H is provided with a suitable number (four in the present instance) of yielding fingers, one end of each of which projects out from the gear sufficiently far to engage the peripheries of the disks O, whereby as the said gear is rotated under the influence of the power-spring the disks are intermittently rotated and the sliding dogs moved radially through the medium of the threaded shafts N, thereby allowing the power-spring to expand, yet automatically regulating the degree and rapidity of such expansion. One end of the sleeve E is provided with a squared portion adapted to receive a crank whereby the spring may be wound up, in which operation the dogs will be returned toward the center by the contact of the fingers P with the disks O in the opposite direction.

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

1. In a spring-motor regulator, the combination, with the power-spring and one of the

gears of a train of gearing, of the dogs constructed to be operated by said gearing and to resist the power-spring.

2. In a spring-motor regulator, the combination, with the power-spring and the dogs adapted to engage the same, of the power-gear and the screw-shaft adapted to be operated thereby and to actuate the dogs.

3. In a spring-motor regulator, the combination, with the casing and the power-spring, of the dogs adapted to slide in ways formed in the casing, the screw-shafts connecting with the dogs, having disks mounted thereon, and the power-gear provided with contact-fingers.

4. In a spring-motor regulator, the combination, with the power-spring, and the casing having dovetail grooves formed in the cap-piece thereof, and the sliding dogs having the correspondingly-shaped ways, screw-threaded apertures, and extensions adapted to bear upon the outer folds of the spring, of the screw-threaded shafts fitted in said apertures, mounted in bearings formed on the casing, and provided with roughened peripheries, and the power-spring carrying yielding projecting fingers.

5. In a spring-motor, the combination, with the power-spring, the sleeve connected thereto, and the power-gear mounted on said sleeve, of the shaft and sleeve having clutch members, and the shaft provided with a power-gear.

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

THOMAS M. OFFUTT.

Witnesses:

WILBER COLVIN,

FERD STALE.