

(Model.)

3 Sheets—Sheet 1.

W. H. DILLON.
SPRING MOTOR.

No. 422,336.

Patented Feb. 25, 1890.

Fig. 1.

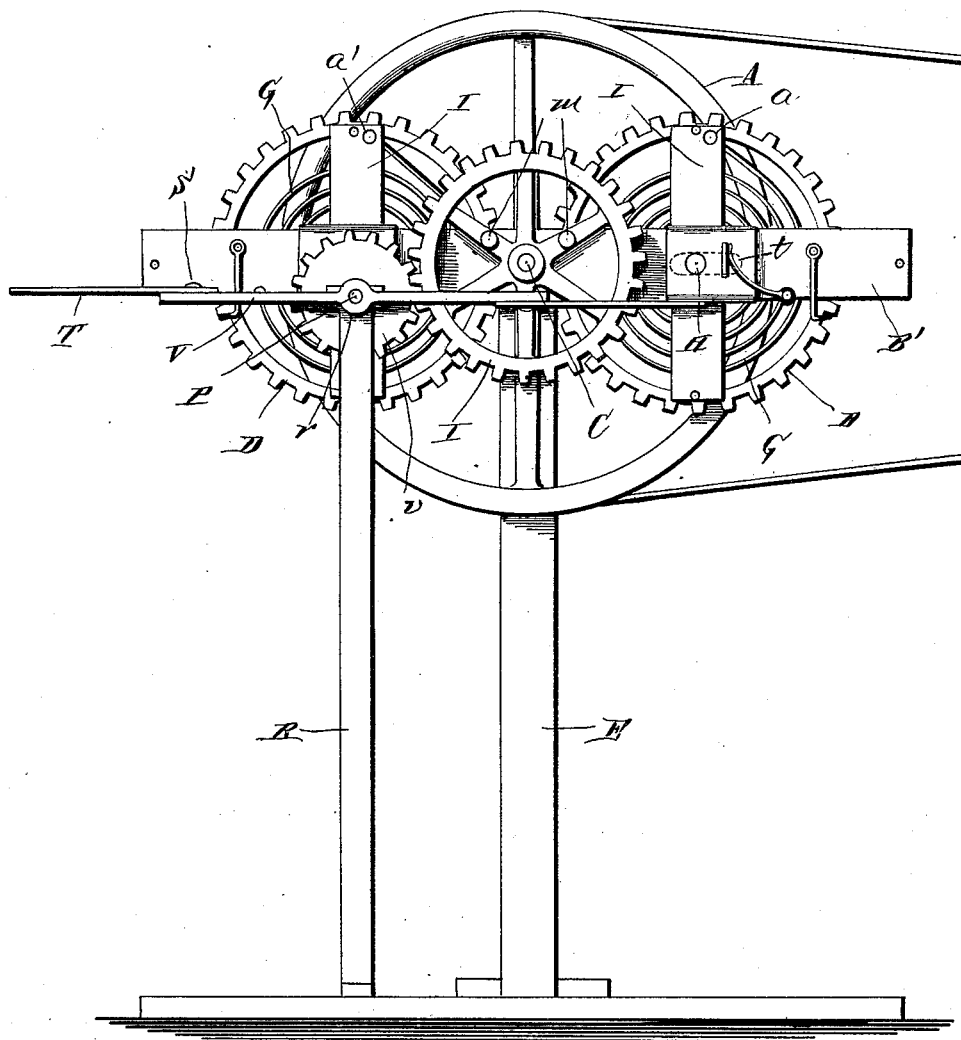
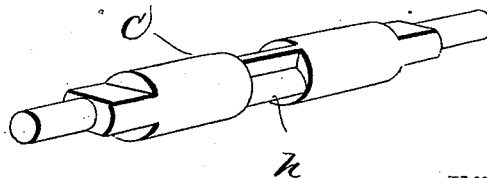


Fig. 6.



WITNESSES

C. L. Taylor,
Phillips.

INVENTOR

W. H. Dillon
by C. W. Anson
his Attorney

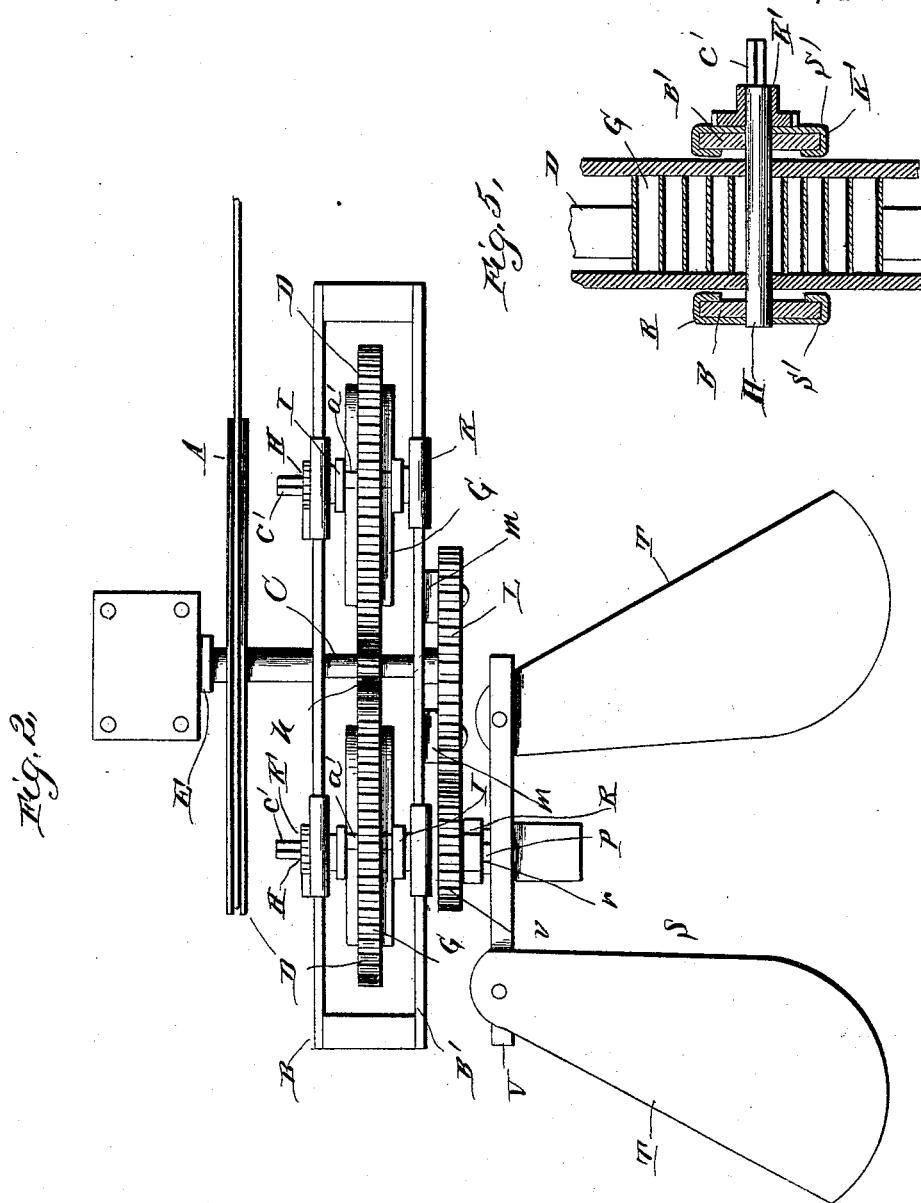
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Witnesses

Chas. Taylor,
Phillips Masi.

Inventor

W. H. Dillon.

By his Attorney

E. W. Amosson.

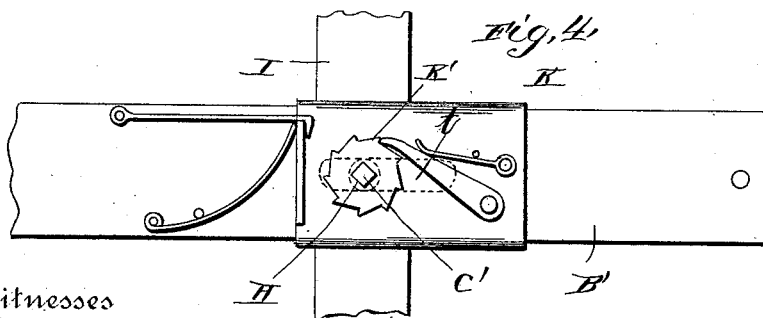
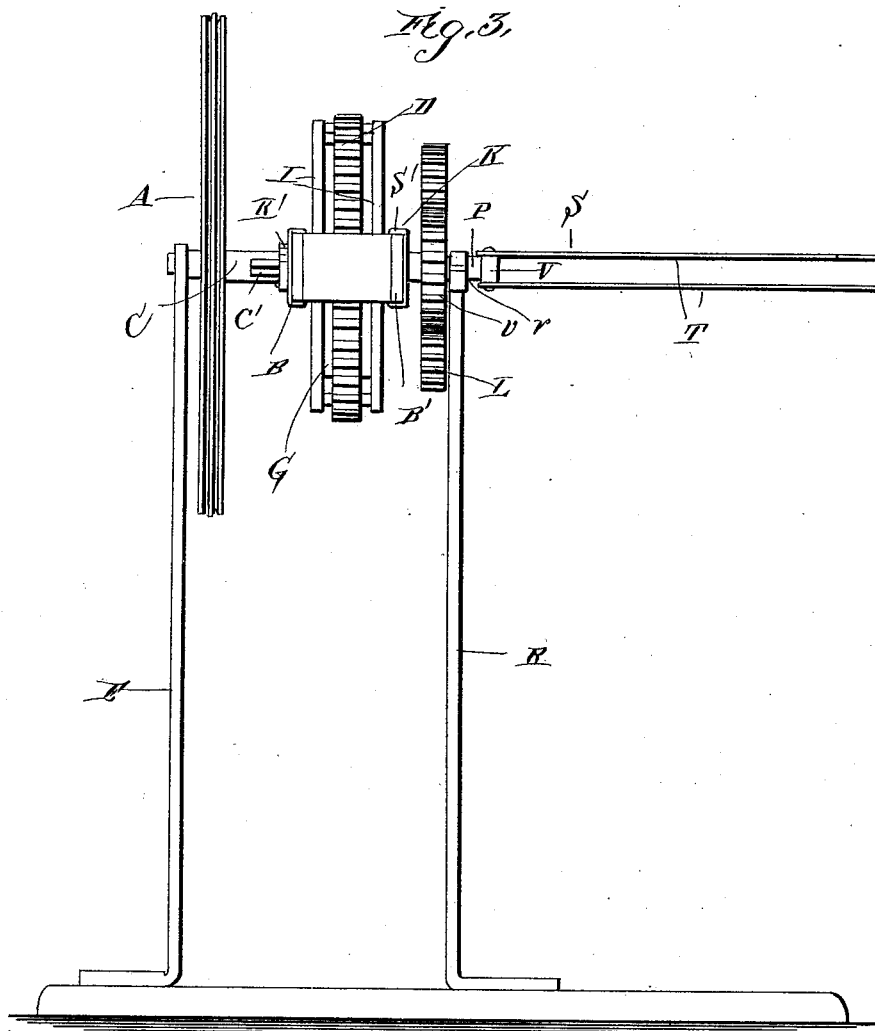
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3 Sheets—Sheet 3.

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Patented Feb. 25, 1890.



Witnesses

W. B. Taylor,
Phillips.

By his Attorney

Inventor
W. H. Dillon.

E. W. Anderson,

UNITED STATES PATENT OFFICE.

WILLIAM H. DILLON, OF ELKTON, KENTUCKY, ASSIGNOR OF ONE-HALF TO
HENRY W. BARRY, OF PALMYRA, NEW JERSEY.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 422,336, dated February 25, 1890.

Application filed July 27, 1889. Serial No. 313,859. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DILLON, a citizen of the United States, and a resident of Elkton, in the county of Todd and State of Kentucky, have invented certain new and useful Improvements in Spring-Motors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view of the motor. Fig. 2 is a top plan view. Fig. 3 is an end view. Figs. 4 and 5 are detail views; and Fig. 6 is a perspective view of the central spindle, showing the gullet-teeth.

This invention relates to spring-actuated motors; and it consists in the novel construction and combination of parts, as hereinafter described, and pointed out in the claims.

In the accompanying drawings, the letter A designates a band-wheel carried by a central stationary spindle C, having its bearings in opposite plates B B'. Upon these plates are also arranged slide-plates I, in which are journaled the shafts of spring-actuated annular gears D, situated in the same plane on opposite sides of said spindle. The central spindle C, passing through the inner bearing-plate B, is secured by one end to the fixed or bracket frame E. The opposite end of said spindle engages a suitable bearing in the opposite plate B'. The spindle C is provided about midway between its end bearings with recessed or gullet teeth *h* or a pinion to engage the cogs of the spring-actuated annular gear D. The gear-rings D are similar, and each incloses circumferentially a coiled spring G, which is secured at one end to a shaft H and at the opposite end to a bearing *a'* of the plates I near their ends. The plates I of each annular gear are secured at each end on opposite sides to the annular gear D, and serve as a bearing or support for the same. The projecting ends *c'* of each shaft H of the ring-gears are of rectangular form to engage a key for winding the springs of the gears, a pawl and ratchet K' being provided to hold the spring to its work when wound.

An outer gear-wheel L is bolted or secured in a fixed manner at *m m* on each side of its center to the plate B', concentric with the spindle C, and meshes with a pinion *v* on the end of the shaft P of the governor-fan S.

The winding-shaft H of the spring of each annular gear is journaled at each end in bearings in slides K. The slides K are provided with flanges to engage guide-bearings, as at S, of the bars or plates B B'. These slides are provided in order to permit one of the gears D to be moved back out of engagement with the central pinion when its spring has run down and the other gear D to be moved into engagement with said pinion to avoid loss of time in winding. The bars B B' are slotted at *t* to allow this adjustment, and latches are provided to hold the gears out of gear, as well as springs or other latches to hold said gears to their engagement with the central pinion.

The fan-shaft P is journaled in bearings of a bracket R, through which it extends at *r* to form a bearing for the governor-fan S.

The fan S consists of the body portion V and pivoted adjustable fan-blades T, pivoted one to each end of said body portion. This fan is designed for the purpose of regulating the speed of the motor by folding or extending them as occasion may require; or the fan-blades may be provided with closing springs adapted to draw them toward each other, so that when the fan-shaft is turning rapidly the fans will be spread outward, increasing their leverage and causing the machine to move more slowly than it otherwise would. So, also, when the machine runs slowly the fan-blades will close in and present less obstruction to its rotation.

The operation of the motor is effected by winding the springs of the gears on their respective shafts. When the spring is released, expansion causes the large wheel A to revolve by the engagement of the annular gear D with the pinion of the stationary central spindle C. The power is transmitted from the motor by suitable gear chain or belting from the periphery of the large wheel A to the working-shaft at the desired point of operation.

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

1. A spring-actuated motor consisting of a power-wheel, a stationary shaft, a diametrical frame centrally perforated to afford bearings for said stationary shaft, an adjustable spring-actuated annular gear adapted to engage a pinion on the said shaft to rotate said power-wheel when the springs are released, substantially as described.

2. In a spring-actuated motor, the combination of the wheel A, a diametrical frame B B', and the stationary spindle C, supported in said frame, with the adjustable annular gears

D, inclosing coiled springs G and journaled in flanged slides K on the sides B B' of the frame, the pinion *h* of the central spindle, the outer gear-wheel L, and the fan-shaft P, engaged by the wheel L and carrying the governor-fan S, substantially as described.

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

WILLIAM H. DILLON.

Witnesses:

JOHN B. HUTCHINGS,

SILAS H. CARTRIGHT.