(No Model.)

J. A. WRIGHT.

SPRING MOTOR.

No. 291,970. Patented Jan. 15, 1884.

Fig. 1.

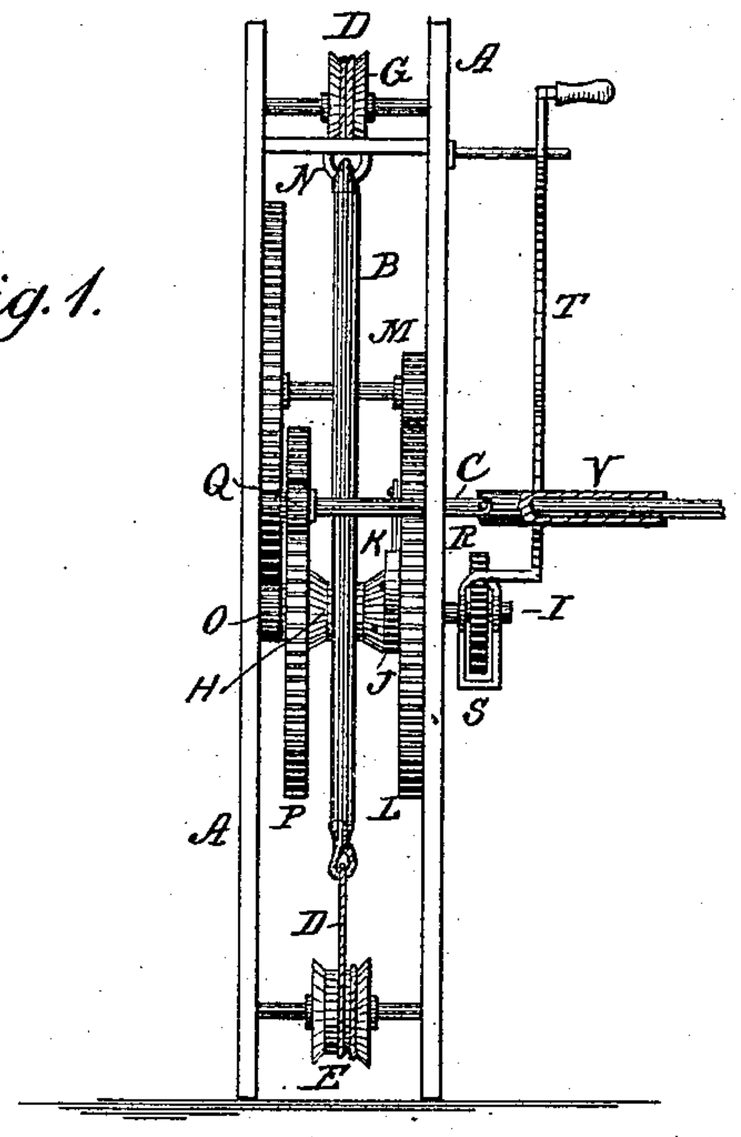
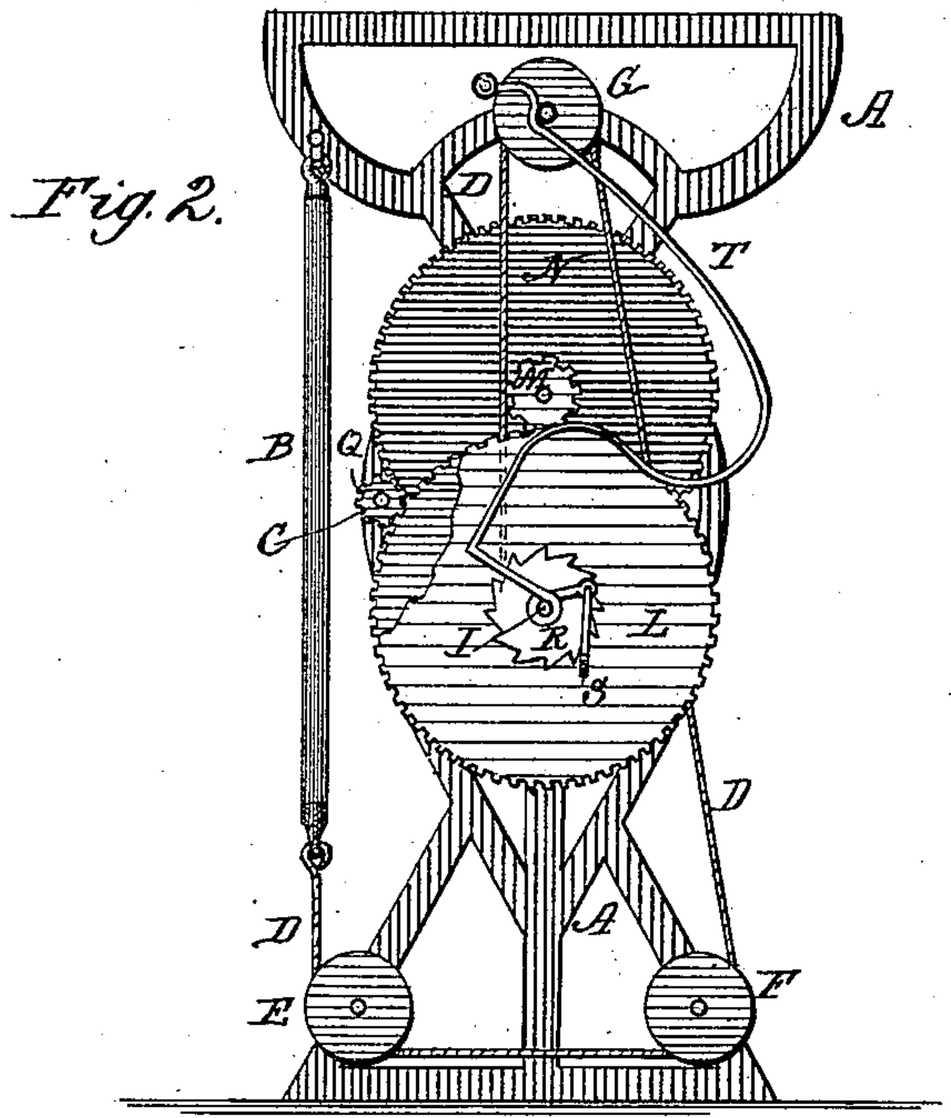


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES A. WRIGHT, OF ROCKINGHAM, NORTH CAROLINA.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 291,970, dated January 15, 1884.

Application filed June 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. WRIGHT, a citizen of the United States, residing at Rockingham, in the county of Richmond and State of North Carolina, have invented a new and useful Improvement in Spring-Motors, of which the following is a specification.

My invention relates to that class of spring-motors in which the spring is used to store up force supplied to it by hand, and to give off said force through suitable mechanism to produce useful effect; and it has for its object to provide means whereby an elastic cord or other spring may be stretched to its full length and its contractile force utilized in a small space.

To this end my invention consists in the construction and combination of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of my invention in a form suitable for attachment to some sewing-machines; and Fig. 2 is a side elevation of the same, the front frame being removed to show the interior.

A represents the frame of the machine, cast in such form as will adapt it to the particular service which it has to perform.

B represents the mainspring, which is the storer of the power which is to be given off from the machine by shaft C. These two parts are connected by a cord and a train of gearing, whereby the force of the spring is caused to revolve said shaft.

D is the cord, secured at one end to the spring, then wound over the pulleys E F G a number of times sufficient to take up a length equal to the length of the spring when stretched out, then secured at its other end to a pulley, H, which turns loosely on shaft I. This pulley H is provided with ratchet-teeth J, which are engaged by a spring-pawl, K, on the spur-gear wheel L, which turns freely on shaft I. From this wheel L a train of speed-increasing gears communicates with the delivery-shaft C as follows: The spur-wheel L engages pinion M, thereby actuating spur-wheel N on the same shaft to drive the pinion O, which is secured firmly to spur-wheel P, turning freely on shaft I and engaging pinion O on shaft C.

R is a ratchet-wheel firmly fixed on shaft I and engaged by a pawl, S, on the short arm of lever T. This lever is fulcrumed to turn freely on shaft I, and is bent, forming a curve to pass over shaft C. This lever is so formed that when pushed over back its pawl S hangs of its own weight free from the ratchet-teeth R, but quickly engages the teeth when the lever is drawn forward, causing the ratchet to turn, and with it turning shaft I and pulley H to wind up the cord D and strain the spring B. When lever T is swung over back, its pawl S disengages wheel R, leaving pulley H free to be revolved by the strained spring. Pulley H, engaging spur-wheel L, by means of pawl K, communicates motion through the train of gearing to shaft C, as before described. This shaft will be provided with suitable connections to communicate motion to other machines—such as the telescopic shaft V, having clutch-ends, or such as a pulley for communicating power by belts.

This motor is intended as a substitute for steam, water, and other power in running a class of machinery where such power cannot be had without extravagant expense. It may be adopted for all household mechanical purposes—such as running sewing-machines, churns, pumps, &c.; for running scroll-saws, turning-lathes, and other shop machinery, and for propelling bicycles and other vehicles.

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

1. The combination, with the longitudinally-extensible spring B and the cord D, attached to it, equal in length to the spring extended, of the loosely-mounted pulleys E F G, serving as receptacles for said cord, the winding-pulley H, and means for winding the same, and means for communicating rotary motion therefrom, substantially as described.

2. The combination, with the longitudinally-extensible spring B, the cord D, attached to it, the cord receiving and transmitting pulleys E F G, the cord-winding pulley H, secured to shaft I, and having ratchet-teeth J, the spur-wheel L, having a pawl, K, to engage ratchet-

teeth J, the pinion M, and spur N, of spur-wheel P, the pinion O, and shaft C, for communicating the motion received by wheel L from the spring to other machinery, as described.

3. The combination, with the shaft I, carrying the winding-wheel H, of the ratchet-wheel R, secured on said shaft, the crooked hand-lever T, and pawl S on said lever, adapted to engage wheel R, and to disengage therefrom by its own weight in different positions of the lever, as shown and described.

JAMES A. WRIGHT.

Witnesses:
CHAS. H. GARRETT,
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