

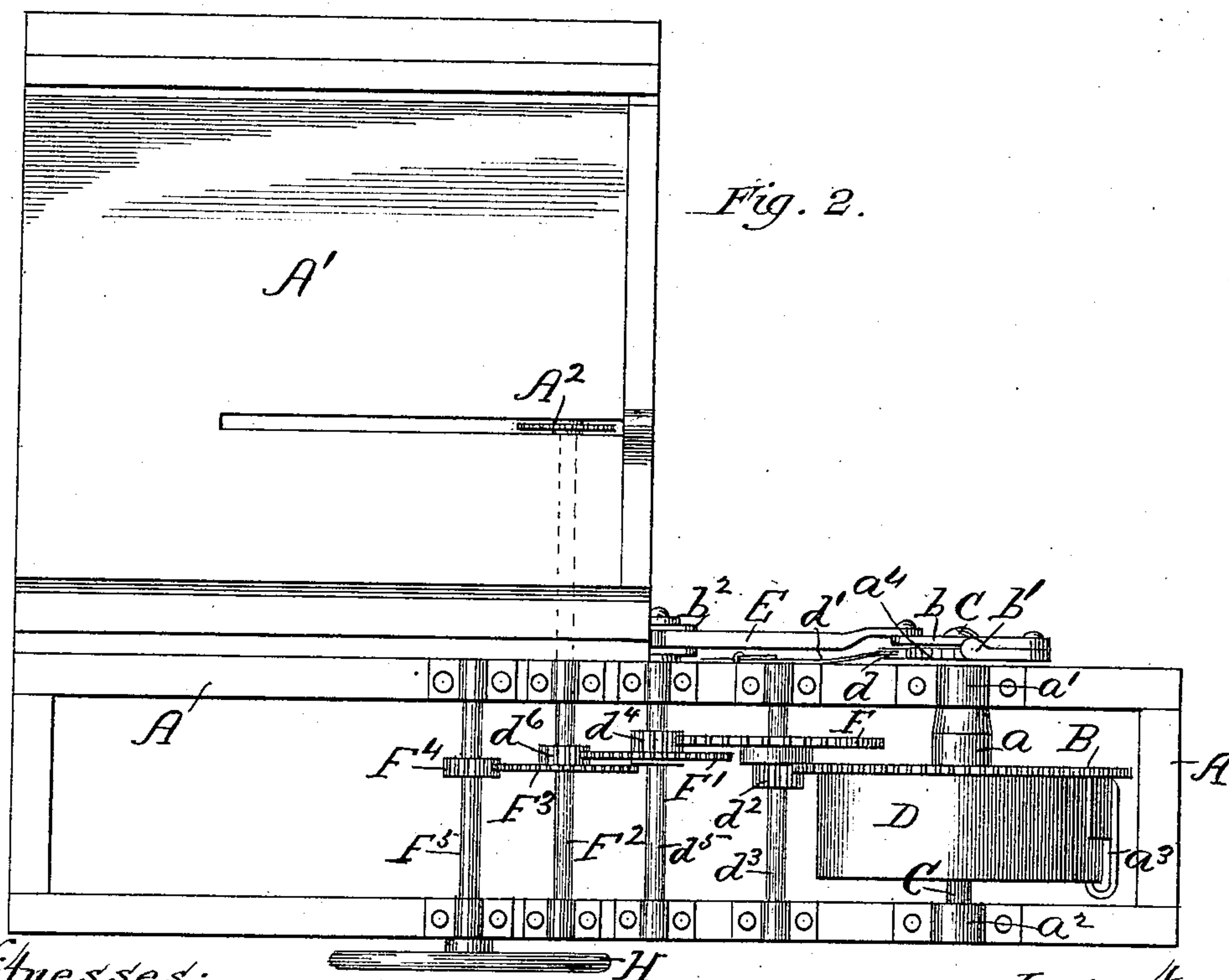
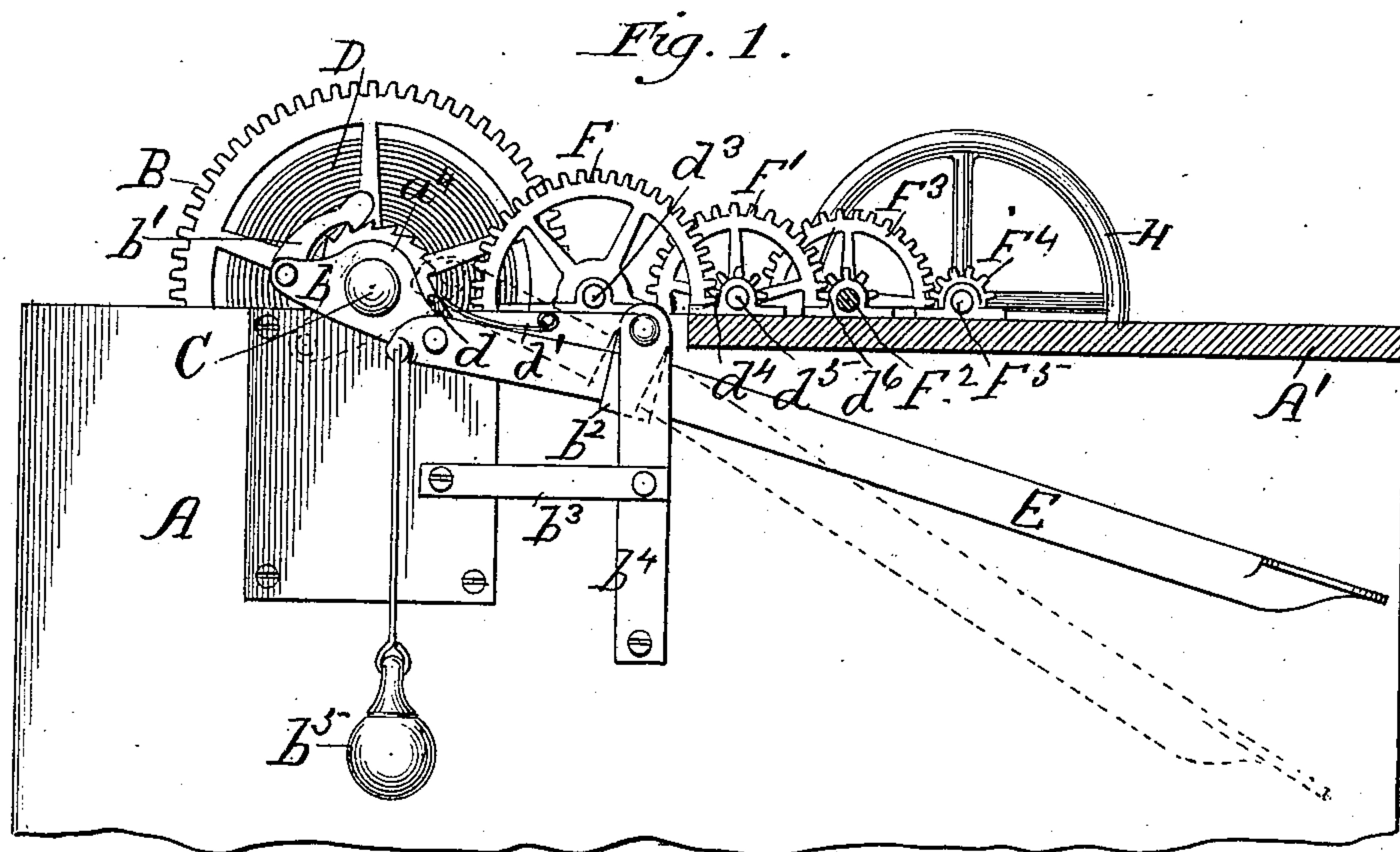
(No Model.)

H. HOHMANN.

SPRING MOTOR.

No. 297,399.

Patented Apr. 22, 1884.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY HOHMANN, OF AUSTIN, ILLINOIS.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 297,399, dated April 22, 1884.

Application filed February 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY HOHMANN, of Austin, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Spring-Motors, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in a spring-motor for operating various kinds of machinery, such as light circular sawing machines, wood-turning lathes, &c.; and it consists of certain novel features in the construction, arrangement, and operation of the mechanism, as will be hereinafter fully set forth.

Figure 1 is a side elevation embodying my improved feature, showing the application of the mechanism in connection with a circular sawing machine; Fig. 2, a top or plan view.

Referring to the drawings, A represents the frame-work supporting the different parts, and A' the feed-table of the saw A². The master gear-wheel B is provided on the inner side only with the hub a, and has a loose bearing on the main shaft C, allowing either to revolve independently of the other. The main shaft is provided with the journal-bearings a' a² in the top of the frame-work. The outer end of the coiled motor-spring D is rigidly secured to one side of the master gear-wheel by means of the clamp a³, while the inner end is rigidly secured to the shaft C, so that the spring is wound up to impart motion and power by rotating the main shaft. On the opposite end of the shaft from the motor-spring is rigidly mounted the ratchet-wheel a⁴, and on the outside of this ratchet-wheel is placed the eccentric rocking plate b, mounted loosely and adapted to have a pivotal movement on said shaft. One end of the winding-pawl b' is pivoted to the outer end of the rocking-plate, while the opposite or hook end is adapted to automatically engage with the teeth of the ratchet-wheel. To the opposite end of the rocking plate b is pivoted the inner end of the foot treadle-bar E, provided with a fulcrum bearing in the bracket b², bolted to the frame-work and supported additionally by the braces b³ b⁴. This treadle-bar then extends along underneath the saw-table to the front, and convenient to the

foot of the operator, as shown in Fig. 1. The inner end of the treadle-bar is also provided with the suspended weight b⁵, which serves the purpose of automatically returning the treadle-bar from the position indicated by the dotted lines to the position shown, when the pressure from the foot of the operator is relaxed. A spring may be substituted for the weight b⁵.

The locking-pawl d is pivoted at one end to the frame-work, and the opposite end held in contact with the ratchet-wheel a⁴ by means of the spring d', for the purpose of locking the same against a back movement.

The master gear-wheel B engages with the pinion d² on the shaft d³, on which is also mounted the gear-wheel F, engaging with the pinion d⁴, on the shaft d⁵, carrying the gear-wheel F', which in turn engages with the pinion d⁶ on the saw-shaft F², carrying the gear-wheel F³, which engages with the pinion F⁴ on the shaft F⁵, mounting the fly-wheel H. This train of multiplying gear-wheels greatly increases the speed and also transmits the motion from the spring to the saw or other object.

A hand-crank may be attached to the main shaft to first wind up the motor-spring at the start, which may then be kept wound up by means of the foot-treadle connection, which, when pressed down by the foot of the operator, rotates the main shaft in the same direction that the master-wheel is revolving, and as the pressure is relaxed on the treadle the inner end of the treadle-bar and the end of the rocking plate secured to the same are pulled down by the suspended weight, and the winding-pawl thrown ahead one tooth or more on the ratchet-wheel. Now, the operator again forces down the treadle, and so on, intermittingly, by which means the spring is wound up as fast as it is unwound, thus supplying a continuous motion without perceptibly diminishing the power. By this arrangement a cheap, simple, and convenient motor is supplied for operating many different kinds of machines requiring light power.

I do not confine myself to the exact construction and arrangement shown, but may make such changes and alterations as the practical application and circumstances may require without departing from the essential features of my invention—viz., storing up of

the power in the spring in the proportion of its use.

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

1. In a spring-motor, the combination, with a master gear-wheel, of a main shaft, on which said gear-wheel is loosely mounted, and a coiled spring having one end rigidly secured to said gear-wheel, and the opposite end rigidly secured to said shaft, whereby the spring is adapted to be wound up no matter whether the said gear-wheel is moving or stationary, substantially as and for the purpose set forth.

2. In a spring-motor, the combination, with a main shaft, of a gear-wheel loosely mounted on said shaft, whereby the same are adapted to have an independent rotation relative to each other, a coiled spring encircling said shaft and having one end rigidly secured thereto, while the opposite end is rigidly connected to the said gear-wheel, a ratchet-wheel rigidly mounted on one end of said shaft, a rocking plate loosely mounted on said shaft, a winding-pawl having one end pivoted to said rocking plate, the opposite end engaging with said ratchet-wheel, and a locking-pawl adapted to engage with and lock said ratchet-wheel against a back movement, substantially as and for the purpose set forth.

3. The combination, with a main shaft, of a gear-wheel loosely mounted on said shaft, a motor-spring encircling said shaft, a ratchet-wheel rigidly mounted on said shaft, a rocking plate having a pivotal movement on said shaft, and a treadle-bar connected to said rocking plate, whereby said spring is adapted to be wound up and a continuous motion maintained by an intermittent pressure on the treadle-bar, substantially as described.

4. In a spring-motor, the combination, with a rocking plate loosely mounted on a main or spring shaft, of a treadle-bar connected to said rocking plate, and means for returning these parts to a normal position when the pressure is relaxed on said treadle-bar, substantially as and for the purpose set forth.

5. In a spring-motor, the combination, with a multiplying train of gearing, of a motor-spring having connection with said train, a main shaft, a ratchet-wheel, a rocking plate, and a treadle-bar, all combined, arranged, and operating substantially as described.

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Witnesses:

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