

(No Model.)

R. H. SPEAKE.

SPRING MOTOR.

No. 360,739.

Patented Apr. 5, 1887.

FIG. 1.

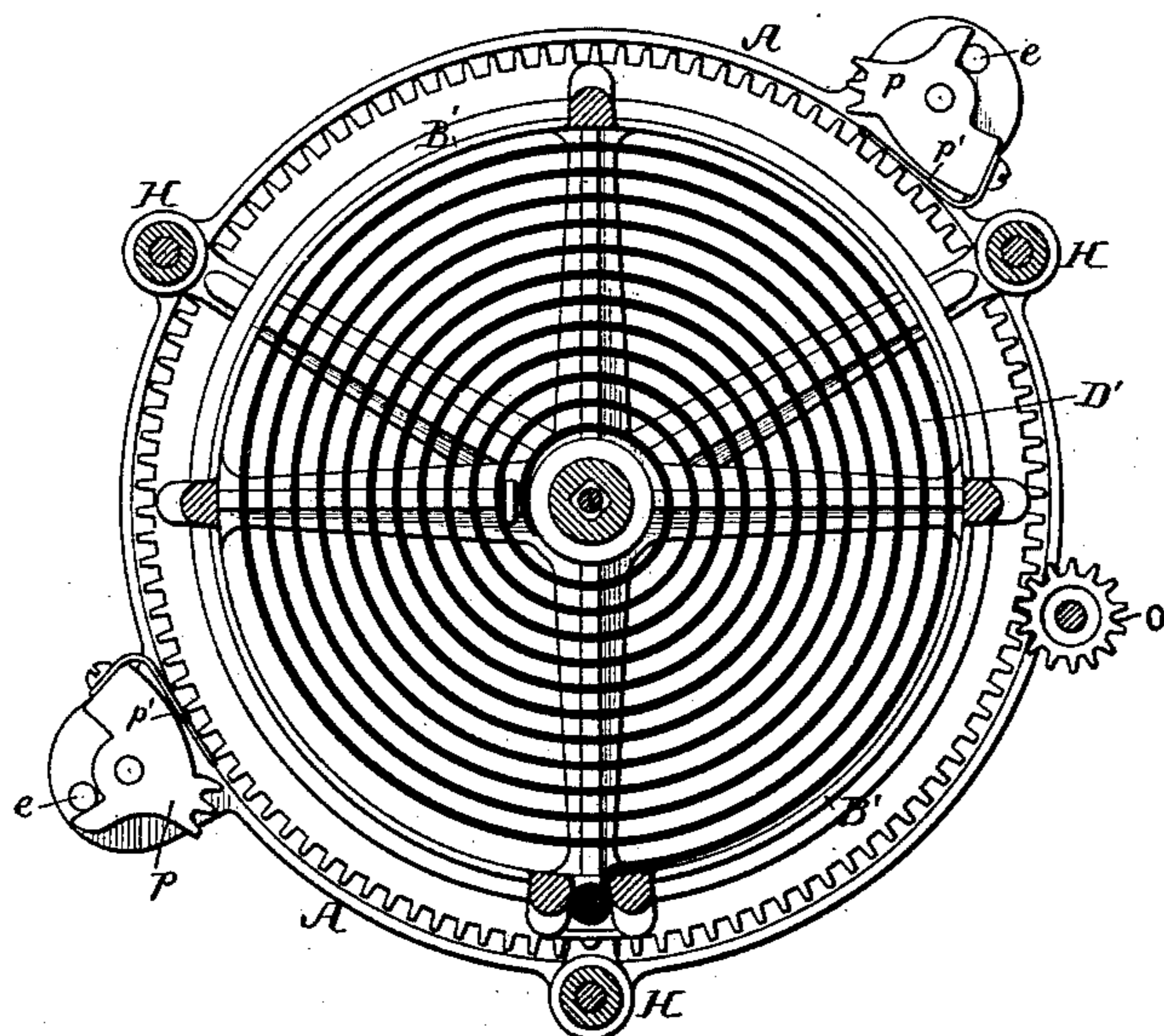


FIG. 2.

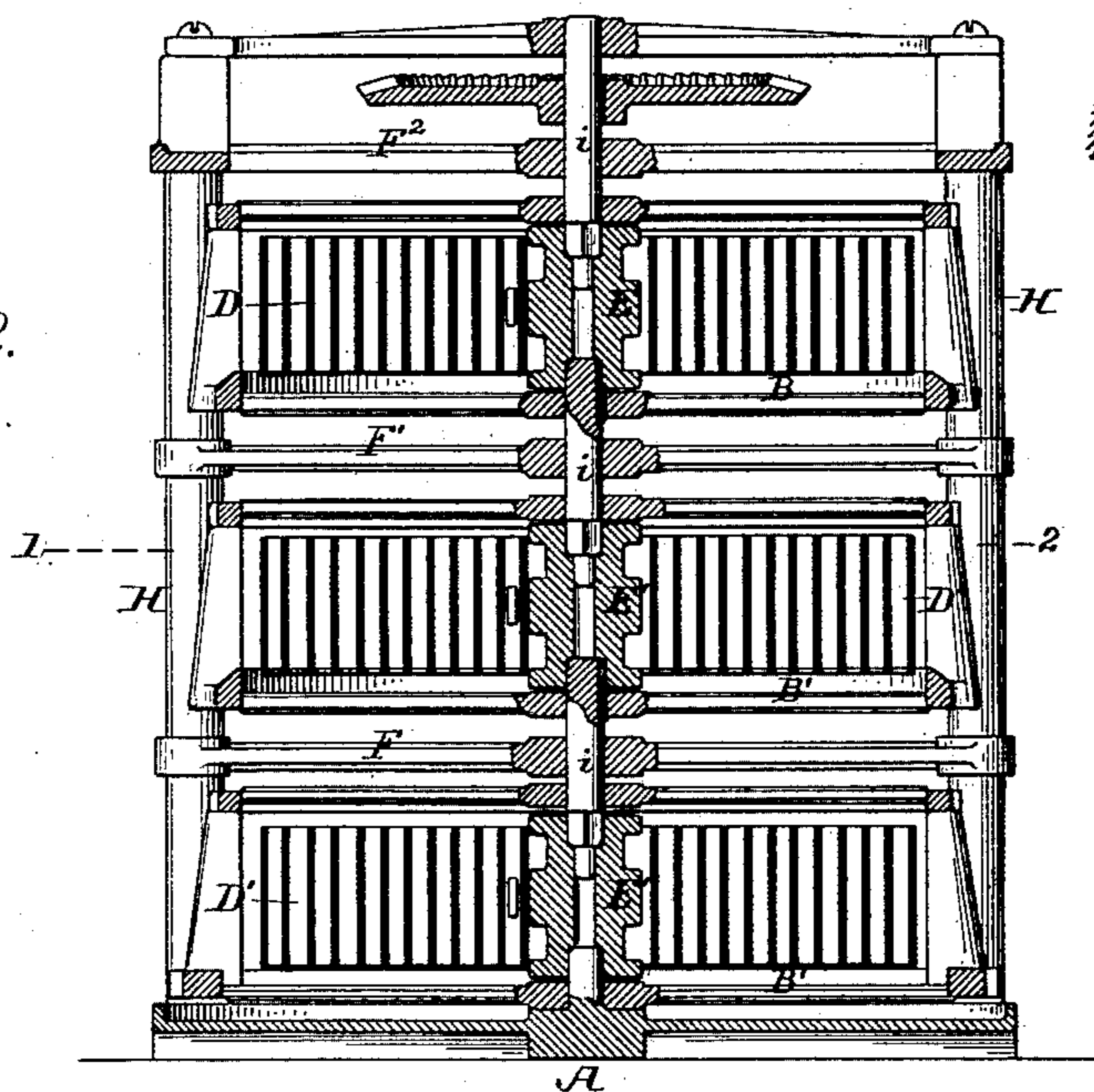
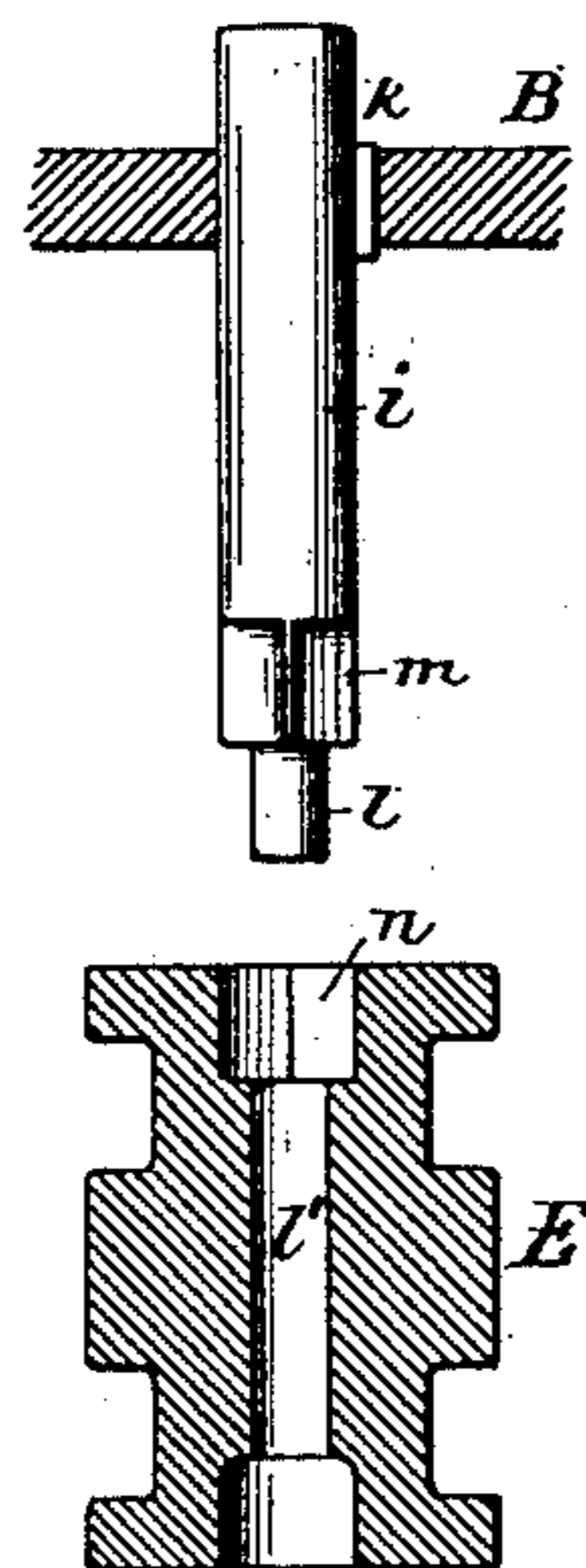


FIG. 3.



Witnesses:
David S. Williams
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Rufus H. Speake
by his Attorneys
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UNITED STATES PATENT OFFICE.

RUFUS H. SPEAKE, OF CAMDEN, NEW JERSEY, ASSIGNOR TO THE POWELL
MANUFACTURING COMPANY, (LIMITED,) OF PHILADELPHIA, PA.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 360,739, dated April 5, 1887.

Application filed February 14, 1887. Serial No. 227,480. (No model.)

To all whom it may concern:

Be it known that I, RUFUS H. SPEAKE, a citizen of the United States, residing in Camden, Camden county, New Jersey, have invented certain Improvements in Spring-Motors, of which the following is a specification.

My invention relates to certain improvements in spring-motors of the construction described and claimed in Letters Patent No. 246,197, granted August 23, 1881, and No. 293,193, granted February 5, 1884.

In the accompanying drawings, Figure 1 is a sectional plan view on the line 1 2, Fig. 2. Fig. 2 is a vertical section, and Fig. 3 is an enlarged view of part of the machine.

The frame of the motor may be of any desired construction, but I prefer to build it up in the manner described in the aforesaid patents—that is, of a base-plate, A, pillars H H, and cross-frames F F' F². The barrels B B', also, which contain the springs D D', &c., may be similar in construction to those illustrated in the patents, and the springs are, as usual, secured at one end to a section, E E', of the shaft or arbor, and at the other end to the periphery of the barrel in any suitable manner.

As described in the Patent No. 293,193, I prefer to make the lowermost barrel the winding-barrel, and to take the power from the upper end of the motor.

The main object of my invention is to insure the several shafts or sections of shafts being in perfectly true line with each other, so that there will be the least possible friction.

The journals *i* of the several barrels are preferably made of steel, separately from the barrels, and secured thereto by means of keys *k*, or otherwise, as illustrated more clearly in Fig. 3. These journals, as in the patented machines, find their bearings and support in the cross-frames F F', &c., and have at their lower ends square or other polygonally-shaped portions *m*, which fit into corresponding openings in the upper ends of the several sectional shafts E E', &c., so that each barrel B B' must turn with the sectional shaft below, and connection thus made from spring to spring. The fitting of the squared portions *m* of the

journals into the corresponding recesses, *n*, in the sectional shafts below cannot, however, be relied upon to bring and keep the sections of shafts in true line, and I therefore turn, on the extreme lower ends of the journals *i*, guide-pins *l*, and bore corresponding openings, *l'*, in the centers of the shafts E E', into which the guide-pins can be accurately fitted. By this means I insure the shafts being placed and kept in true line.

Instead of forming projections or journals on the lower ends of the several sectional shafts E E' to turn in corresponding bearings in the bottom plates of the barrels B B', I prefer to extend the journals *i* up through the bottom plates of the barrels, and adapt the upper ends of these journals to corresponding recesses in the sectional shafts, so that the latter can turn thereon.

As I have before said, I make the bottom barrel the winding-barrel, with teeth around its periphery gearing into the winding-pinion *o*. To lock the barrel, I prefer to use the form of pawl illustrated in Fig. 1, and consisting of a pivoted toothed pawl, *p*, having a spring-guard, *p'*, to bear against the teeth on the barrel while the latter is being turned, and so as to allow the teeth of the latter to slide over the plates without noise.

A stop-pin, *e*, on the base-plate limits the movement of each pawl in either direction. This, however, forms no part of my present invention.

I claim as my invention—

The combination of the frame and sectional shafts of a spring-motor with barrels having journals adapted to bearings in the frame and provided with polygonally-shaped ends, and guide-pins *l*, adapted to corresponding openings in the sectional shafts, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RUFUS H. SPEAKE.

Witnesses:

WILLIAM D. CONNER,
HUBERT HOWSON.