

No. 753,873.

PATENTED MAR. 8, 1904.

J. E. GIBBS.
SPRING MOTOR.

APPLICATION FILED APR. 4, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

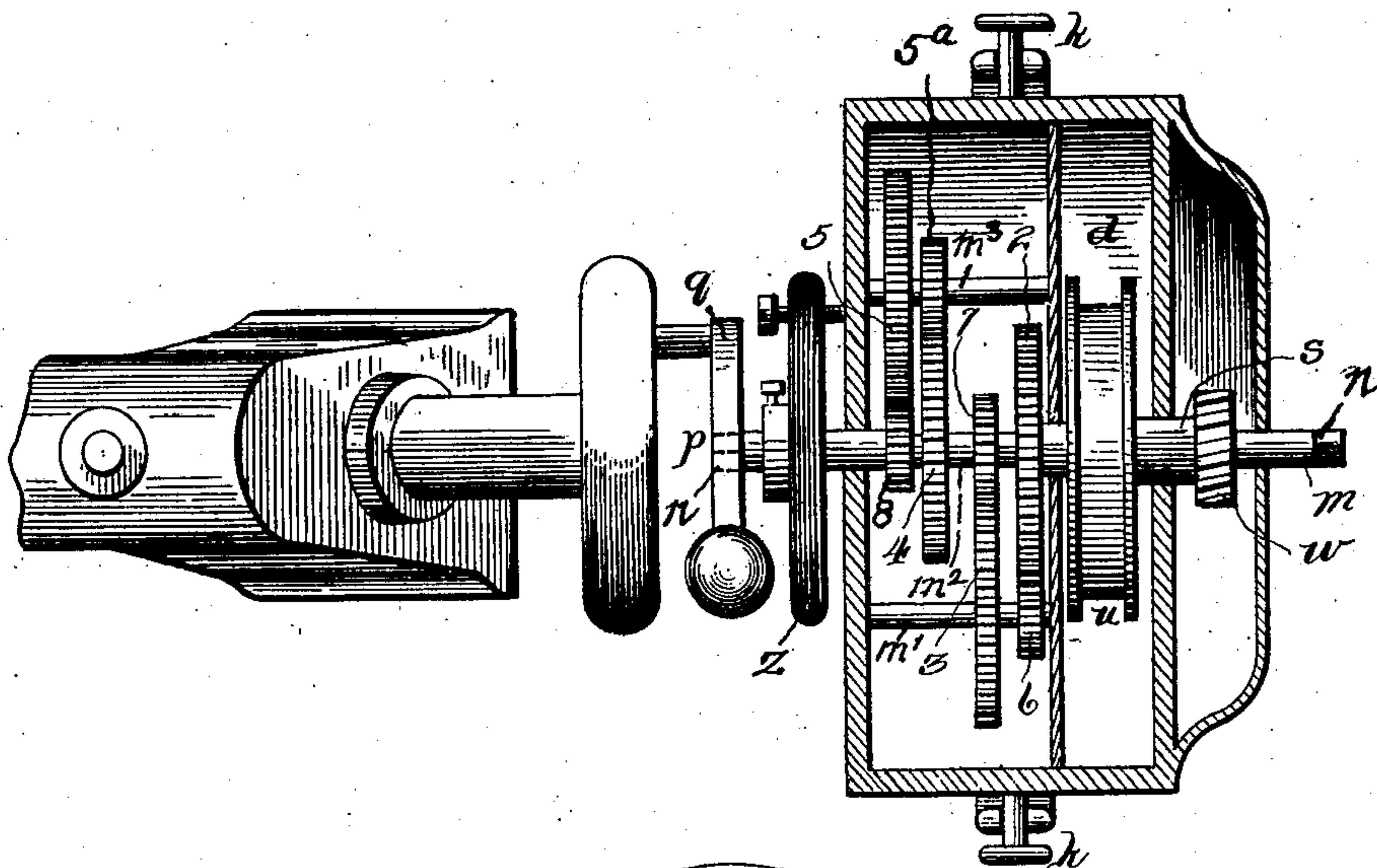
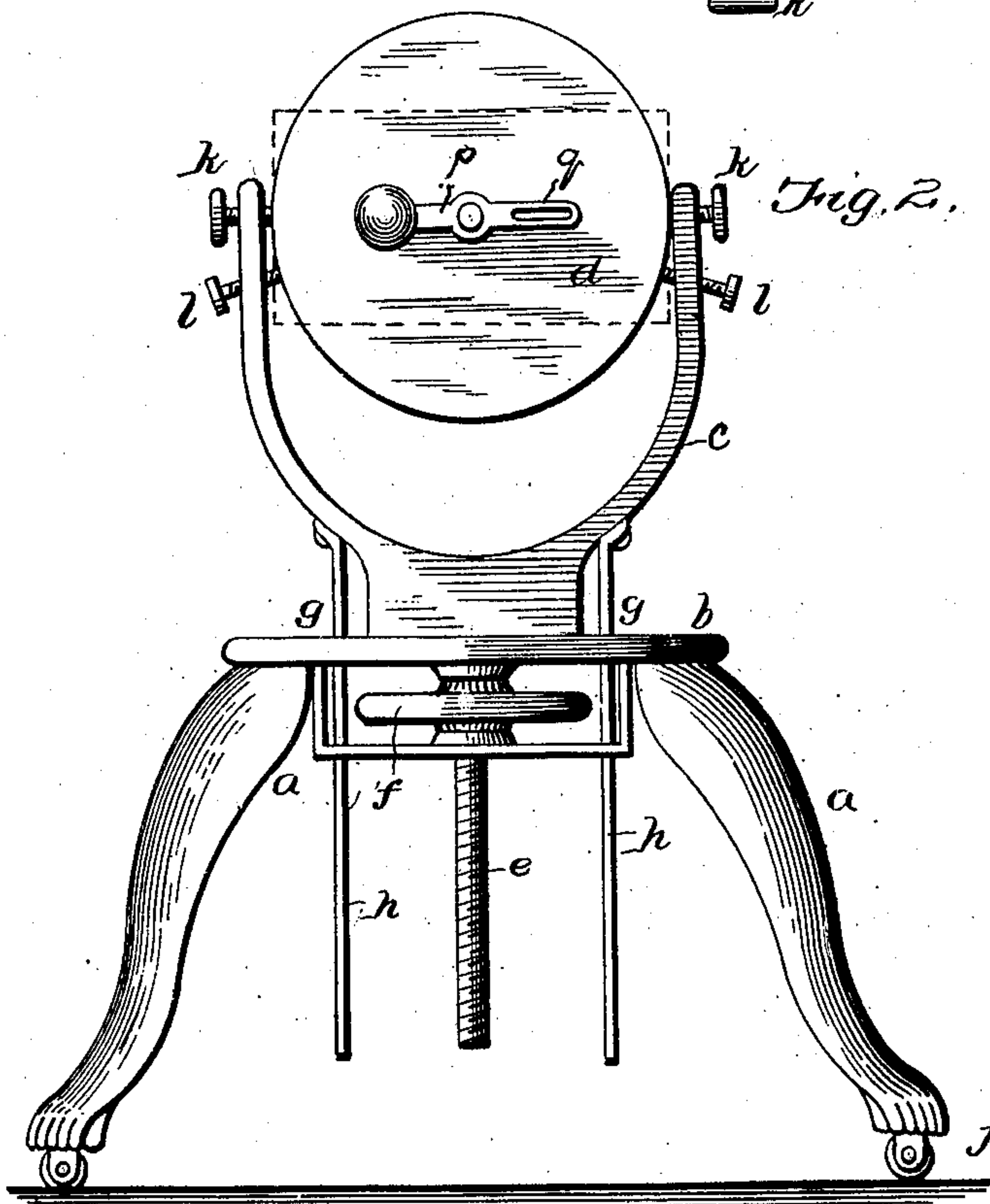


Fig. 2.



Inventor

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Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

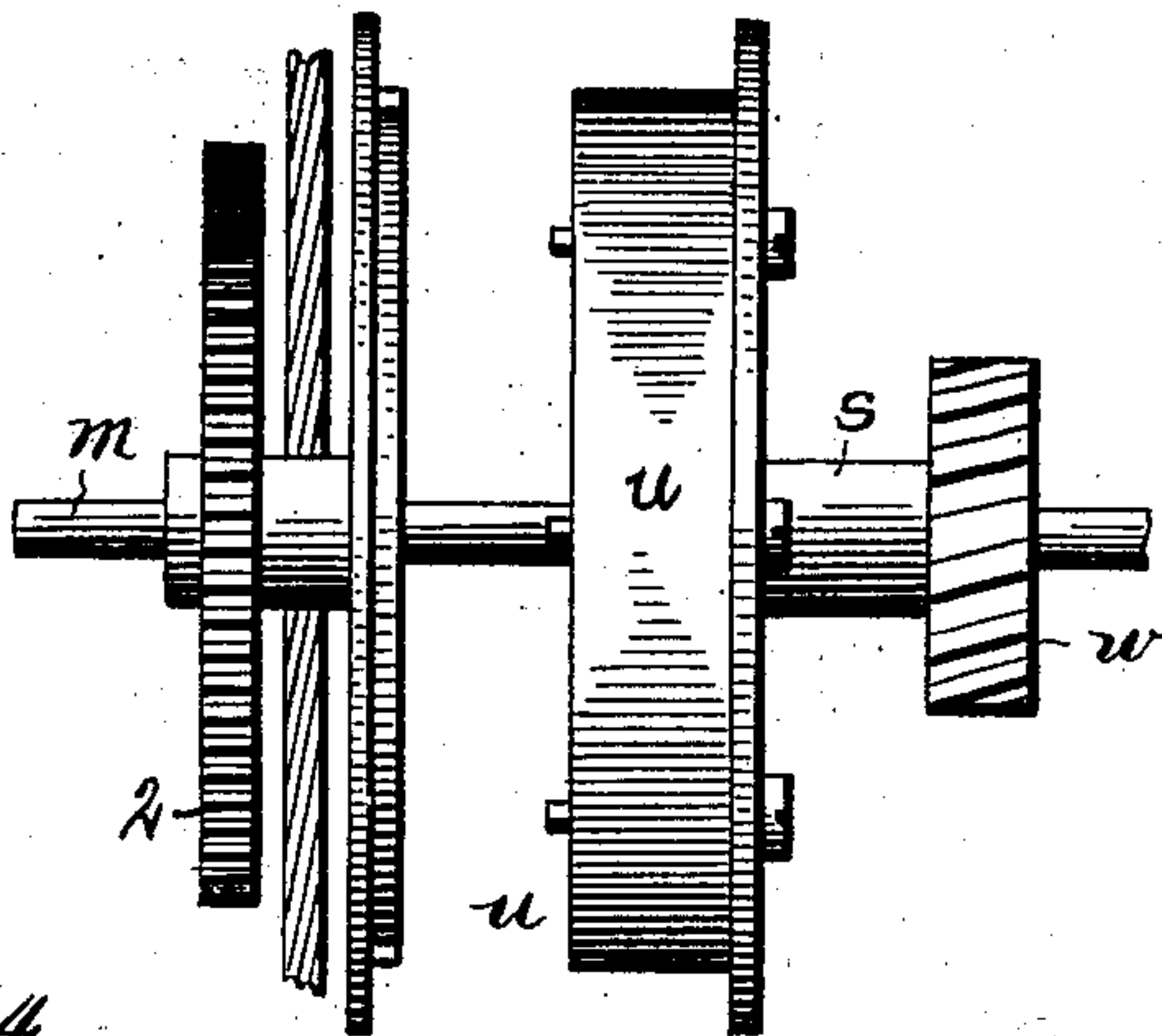


Fig. 4.

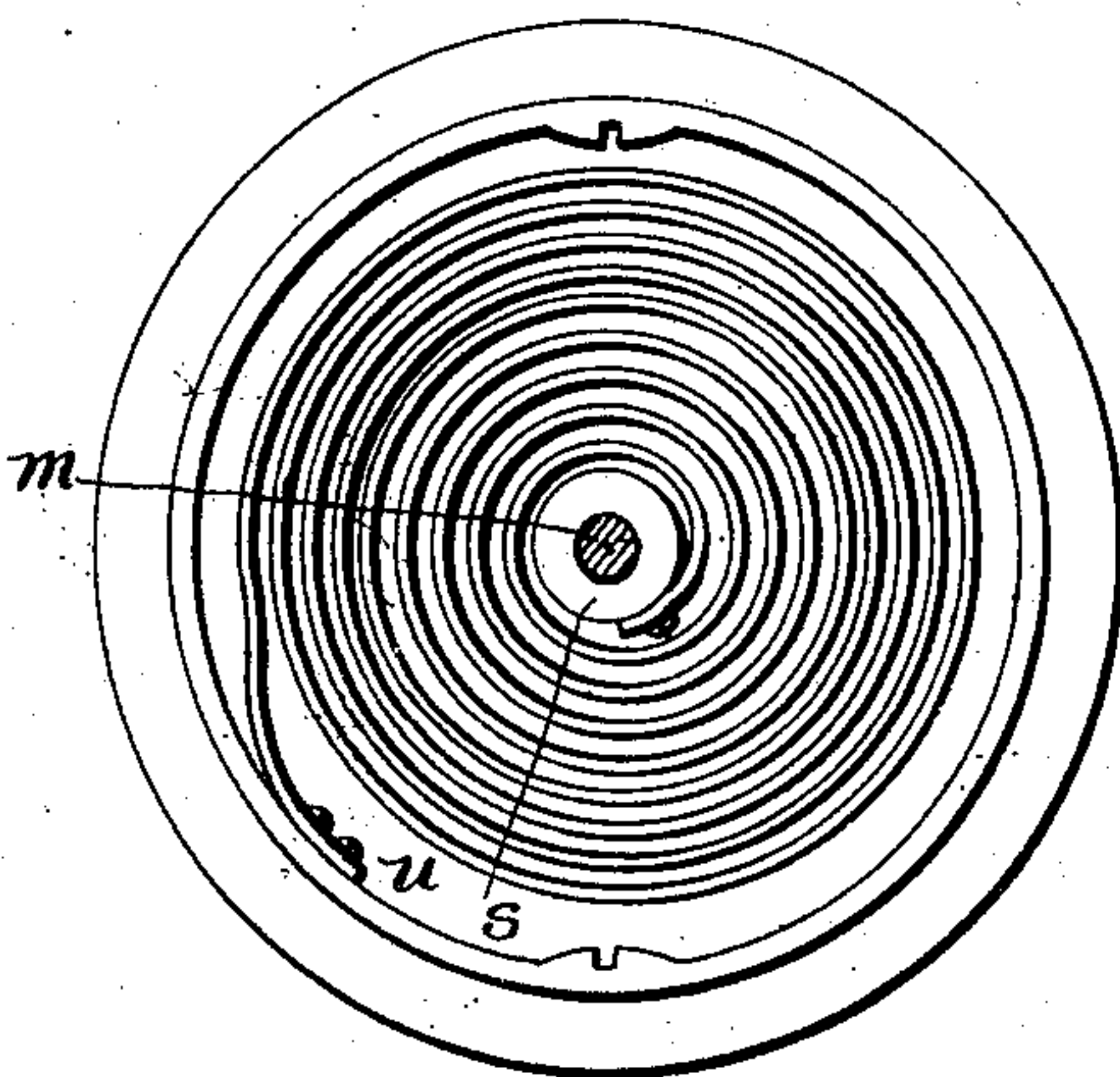
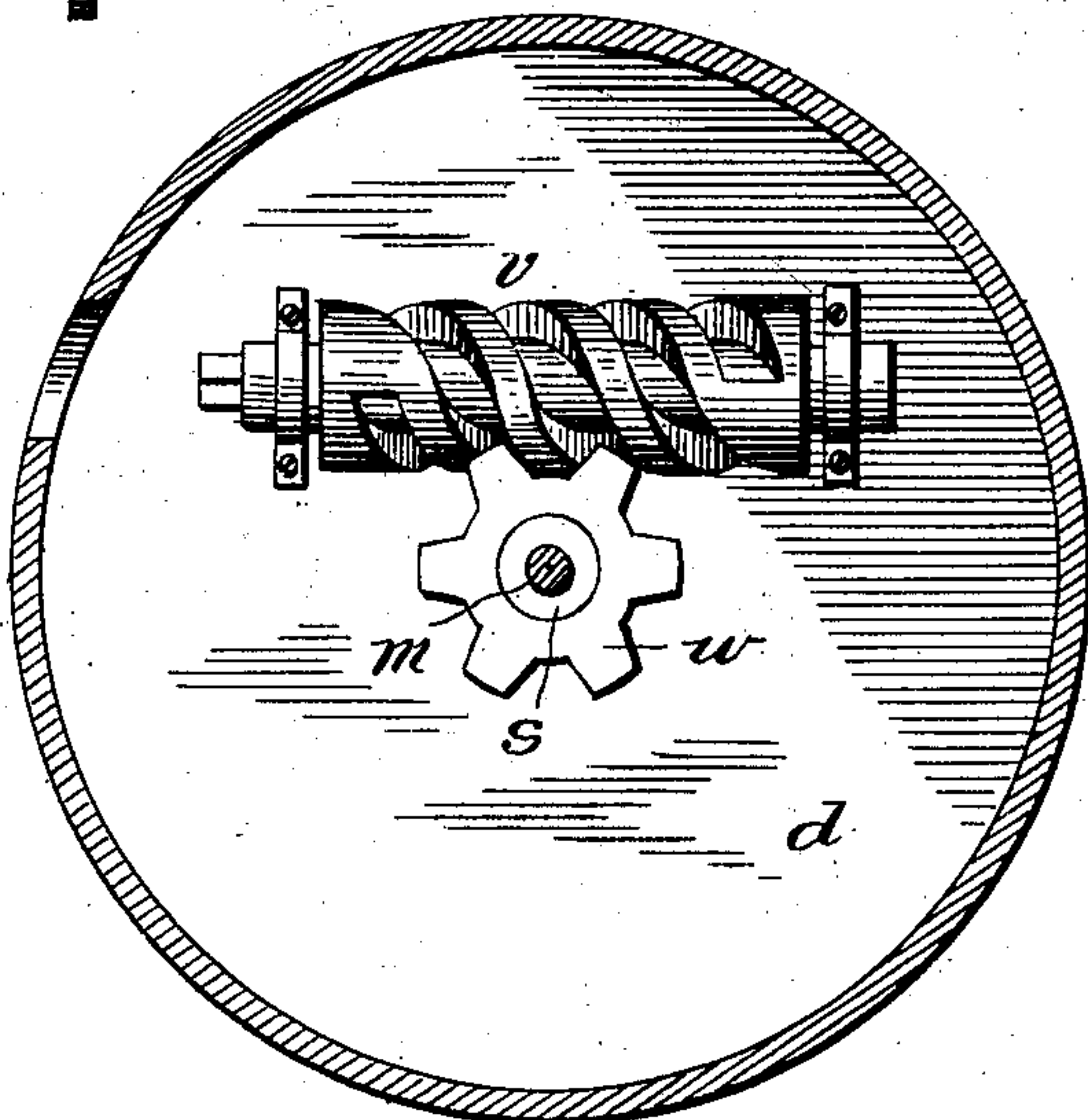


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES EDWIN GIBBS, OF BRIDGEWATER, VIRGINIA, ASSIGNOR OF ONE-HALF TO GEORGE A. HORN, OF NEWARK, NEW YORK.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 753,873, dated March 8, 1904.

Application filed April 4, 1903. Serial No. 151,059. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWIN GIBBS, a citizen of the United States, and a resident of Bridgewater, in the county of Rockingham and State of Virginia, have made a certain new and useful Invention in Spring-Motors; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it ap-
 10 pertains to make and use the invention, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a central horizontal section of the invention as applied. Fig. 2 is a side elevation of the invention. Fig. 3 is a detail view showing the casing for the mainspring in side elevation and the top separated therefrom. Fig. 4 is a detail view of the main-
 15 spring in its casing. Fig. 5 is a detail view of the worm-gearing.

The invention relates to spring-motors designed chiefly for sewing-machines; and it consists in the novel construction and combinations of parts, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a* designates the supporting-frame, comprising a pedestal *b* and an adjustable holder-frame *c*. The motor-case *d*
 30 is pivoted to the arms of the holder-frame and contains the mainspring, its drum, the driving-shaft, and train of gearing.

The pedestal may be of ornamental form and is provided with a bearing for the threaded stem *e* of the holder-frame, which is engaged by the hand-wheel *f*, whereby the holder-frame is adjusted to proper height with reference to the machine to which the motor is to be applied. The pedestal is also
 40 provided with guide-bearings *g* for the lateral guides *h* of the holder-frame, these serving to hold it steady when in operation.

The motor-case is suspended between the arms of the holder-frame by the pivots *k*,
 45 which are horizontally opposite each other, in such wise that the motor-case can be adjusted to either horizontal or vertical position and so that it can be readily reversed in either position. The set-screws *l*, having a threaded
 50 connection with the arms of the holder-

frame, serve to fix the adjustment of the motor-case by engagement with the circumferential wall of such case. The pivots *k* are usually seated in open slot-bearings of the arms of the holder-frame, so that the casing can
 55 be readily removed and replaced in position.

The shaft *m* extends centrally through the motor-case, and its ends project from opposite sides of the case, these ends being provided with seats at *n* for engagement with
 60 the driving-arm *p*. This arm is provided with a slotted extension *q*, which is designed to adjustably engage the driving-wheel of the machine to be operated. When used in connection with the stem of a fly-fan or other
 65 shaft to be rotated, the engaging catch may be of socket form, connected directly to the projecting end of the driving-shaft of the motor.

Around the middle portion of the driving-shaft *m* is the hollow arbor *s*, to which is attached the mainspring, its outer end being
 70 connected to the mainspring-drum *u*. On this arbor is secured a worm-wheel *w*, which is engaged by the worm *v*, the shaft of which is provided with a seat at its end for the ap-
 75 plication of a winding-crank for winding up the spring. The winding-gear is designed to be covered in by means of a casing, which may be detachable from the main casing. This arbor passes into the hub of the drum,
 80 which extends through a partition in the casing, and to said hub on the opposite side from the drum is secured the center wheel 2, which engages in train the gears 3, 4, and 5, the latter engaging spur-gear 8, fast to shaft *m*.
 85

In the construction illustrated the drum gear-wheel 2 upon shaft *m* engages the pinion 6 of the gear-wheel 3 upon shaft *m'*, which engages the pinion 7 of the gear-wheel 4 upon shaft *m''*, which engages the pinion 5^a of gear-
 90 wheel 5 upon shaft *m'''*, which is secured to said shaft *m*. A brake-wheel *z* is provided on the shaft *m* in order to enable the operator to slow up or stop the movement when necessary. It is not designed usually to employ a ratchet
 95 in connection with the mechanism to hold the spring when wound, the train of gearing being sufficient for this purpose, as it is easily controlled by the brake-wheel.

This motor is designed to be readily inverti- 100

ble, and thus adjustable to run machines of which the drive-wheels turn to the right, as well as those wherein they turn to the left, by simple reversal by turning it upside down
5 upon its pivots in the holder-frame, and it is easily adjustable to proper height to correspond with that of the wheel of the machine to which it is to be connected. The gearing is arranged to modify the action of the spring
10 for the purposes in view, and the hand brake-wheel being applied directly in the shaft places it under the ready control of the operator. This motor made on a larger scale can also be used for small power-launches.
15 Having described this invention, what I

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

The combination with an invertible spring-motor, and a pedestal, of a holding-frame, its threaded adjusting-stem and guides, the hand- 20 wheel on said stem, and the horizontal pivots of the spring-motor in connection with said holder-frame, substantially as specified.

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

JAMES EDWIN GIBBS.

Witnesses:

ALLIE DAVIES,
NELLE WHITMORE.