

(No Model.)

2 Sheets—Sheet 1.

C. H. JACOT.
MOTOR FOR MUSIC BOXES.

No. 374,410.

Patented Dec. 6, 1887.

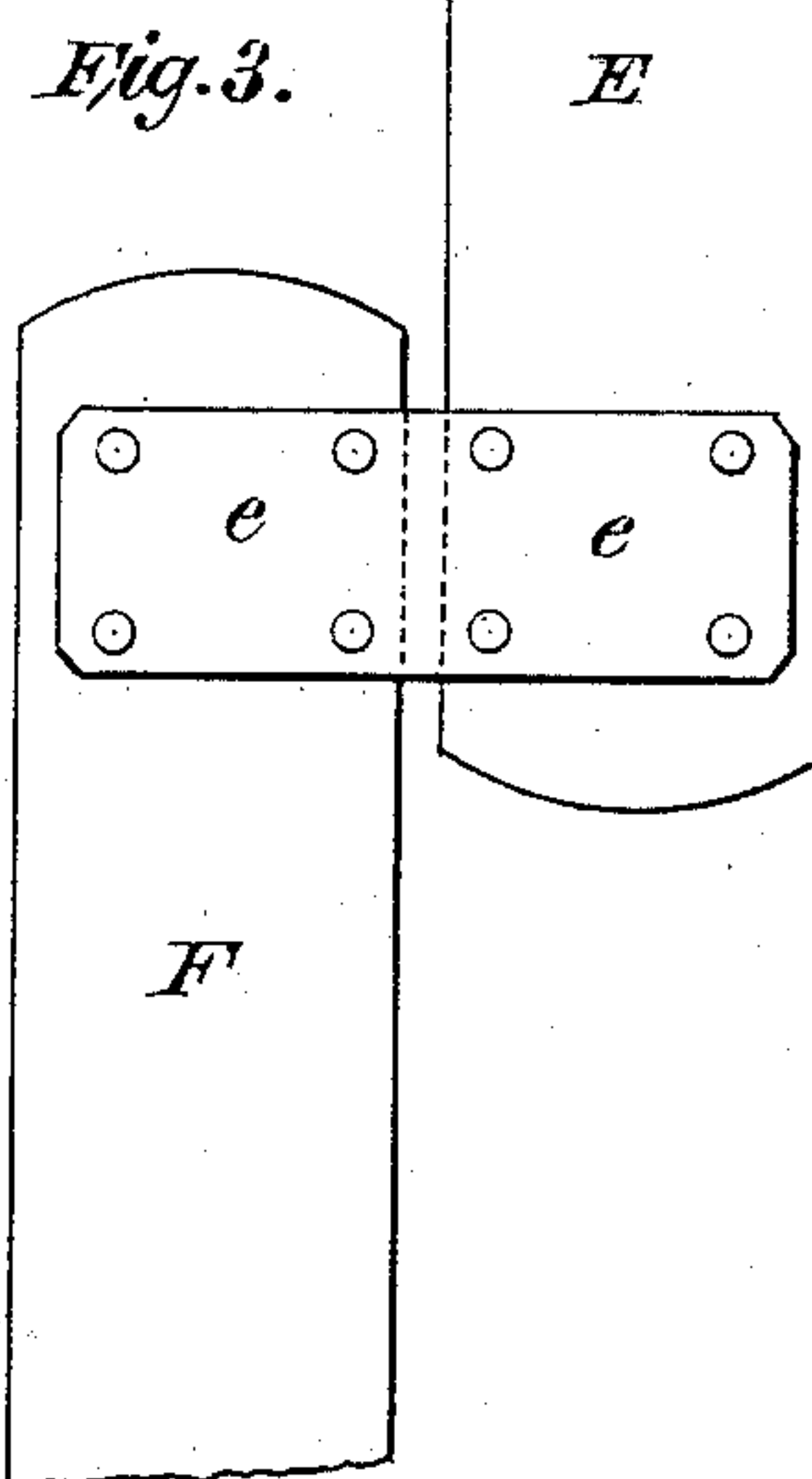
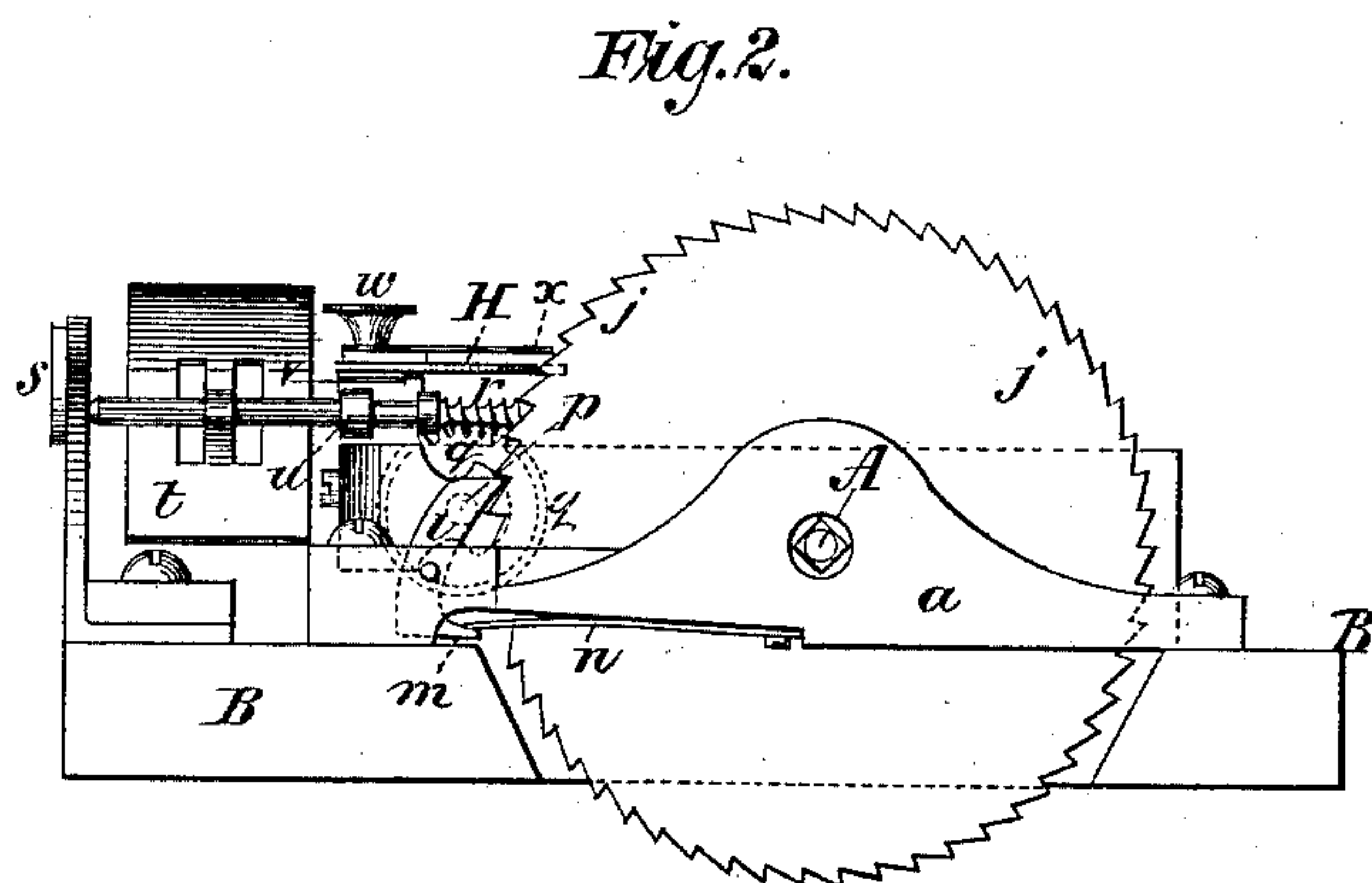
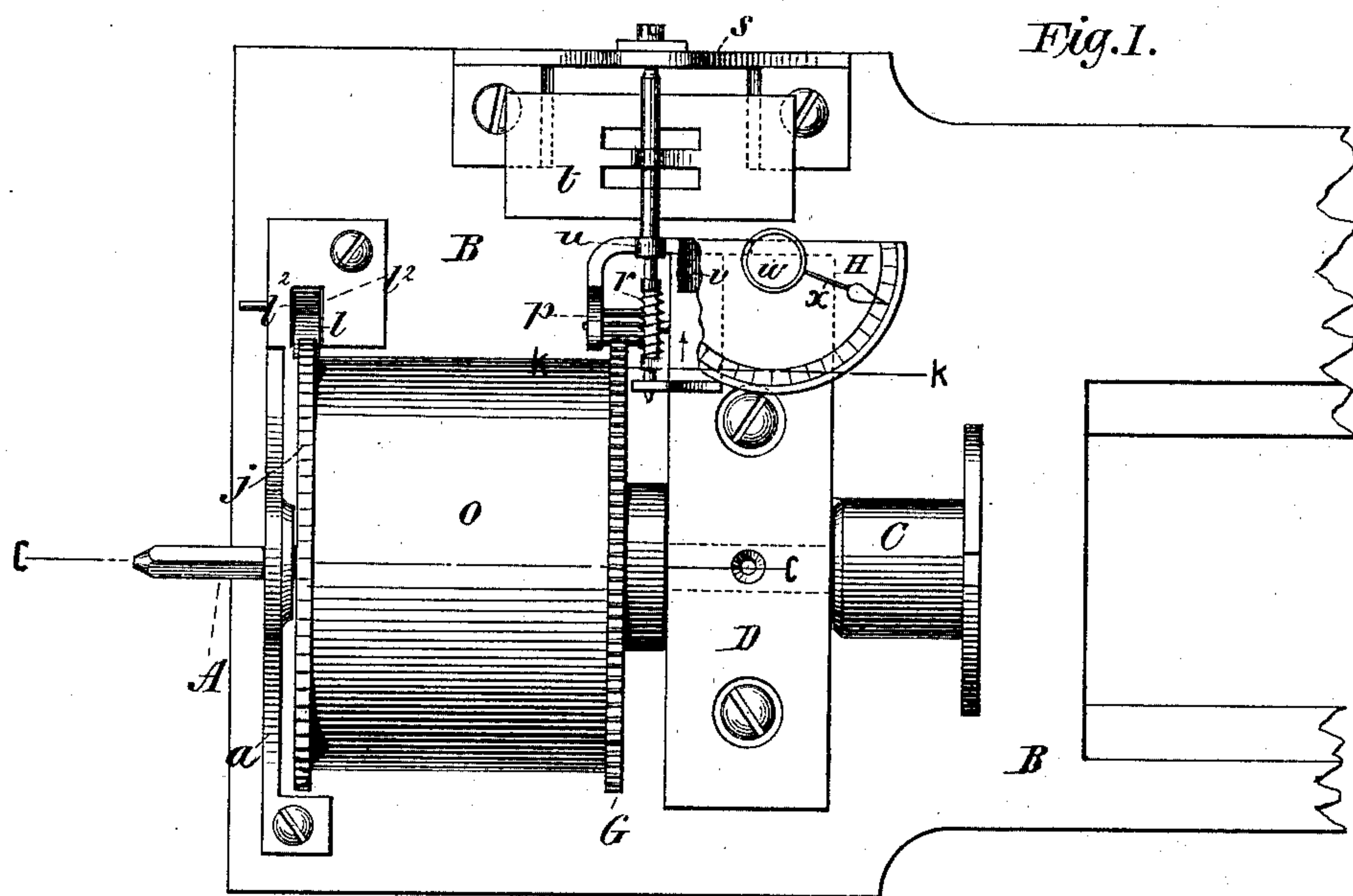
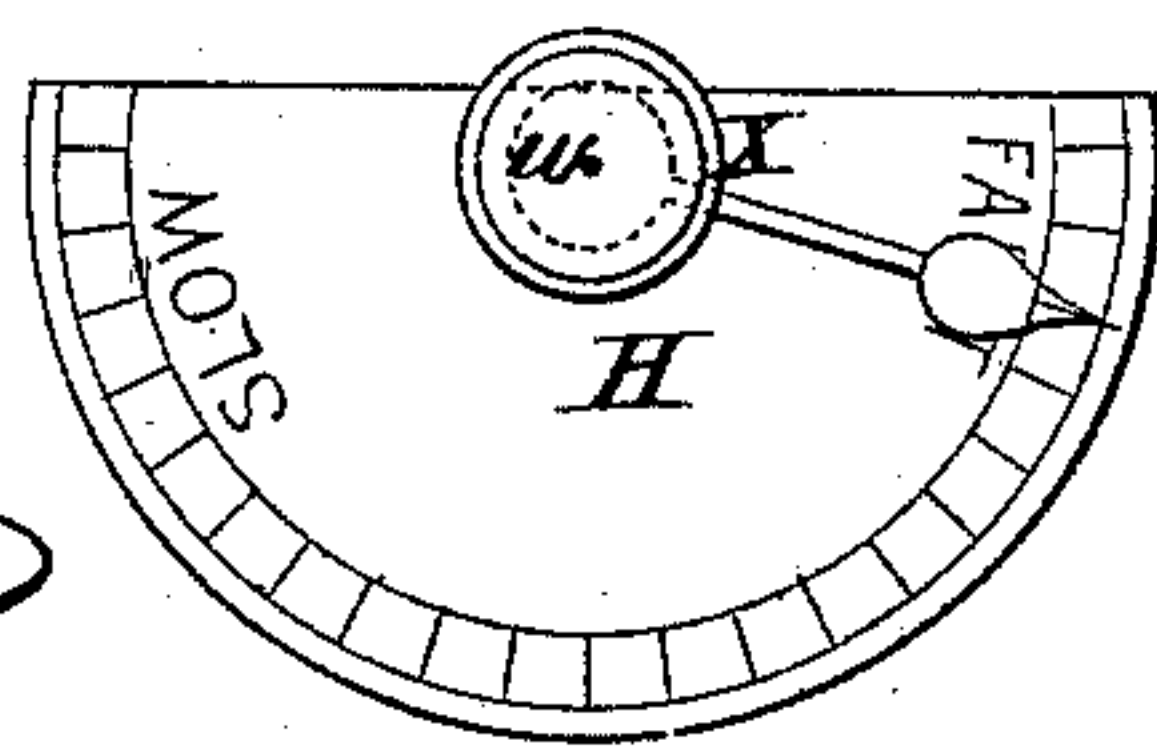


Fig. 4.



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T. F. Bourne

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2 Sheets—Sheet 2.

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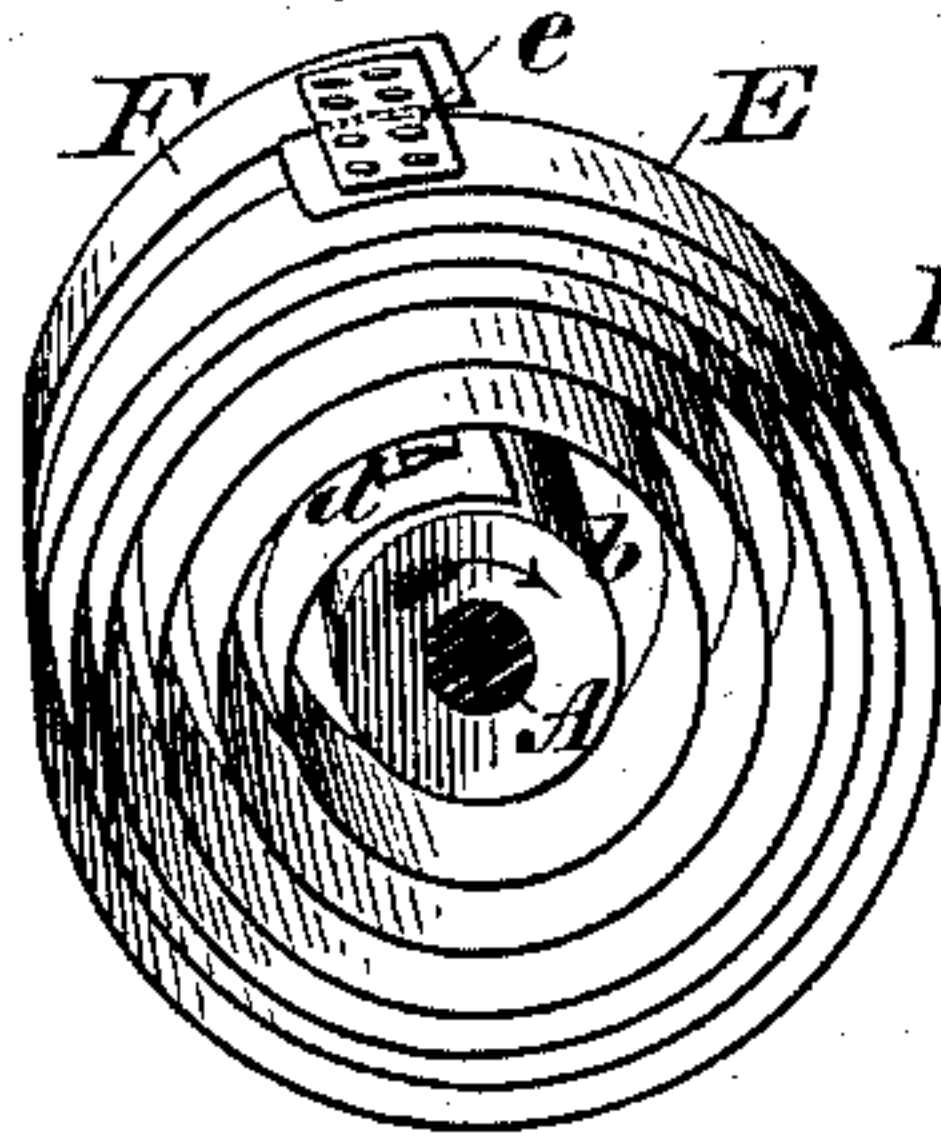


Fig. 9.

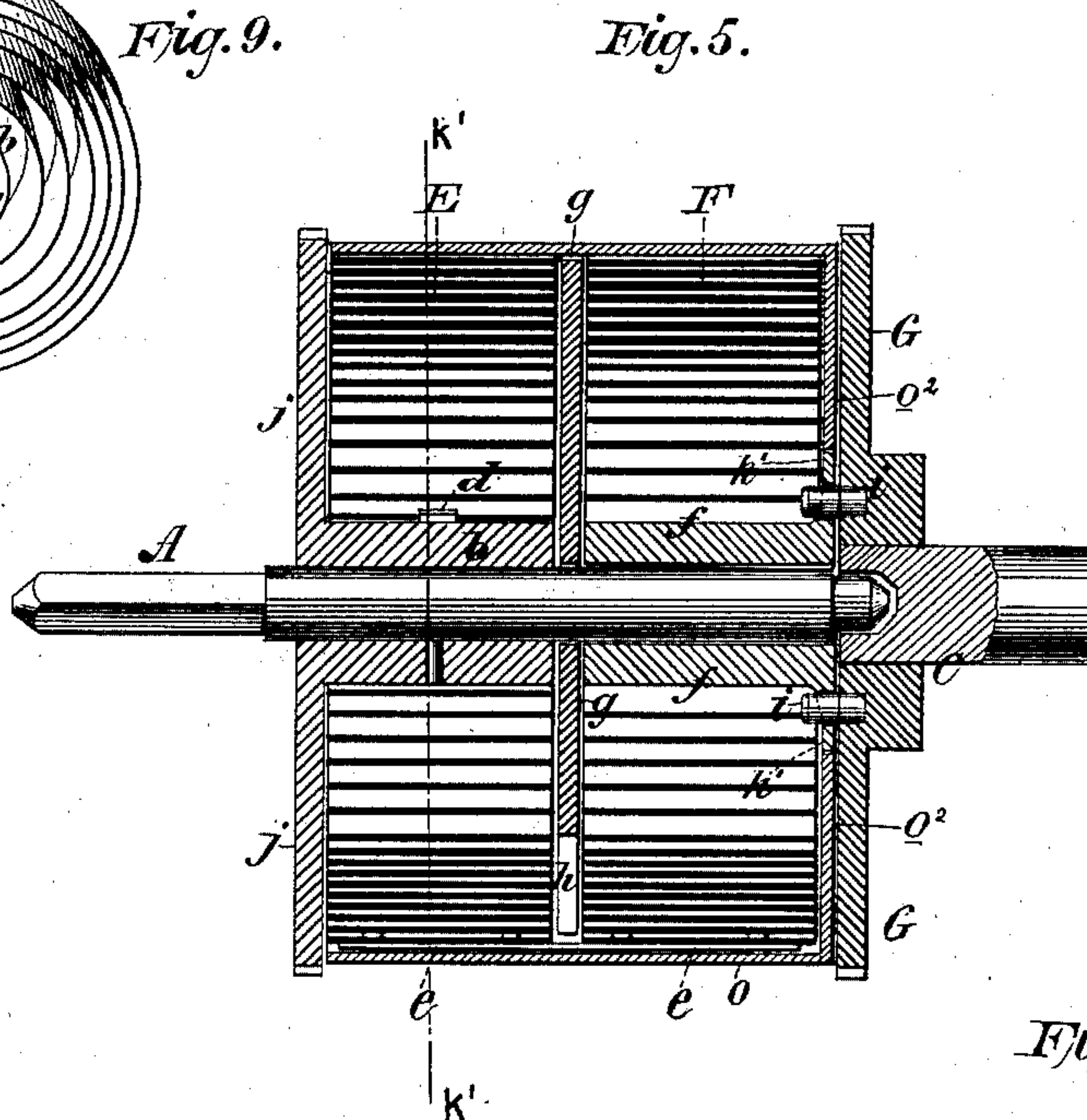


Fig. 5.

Fig. 6.

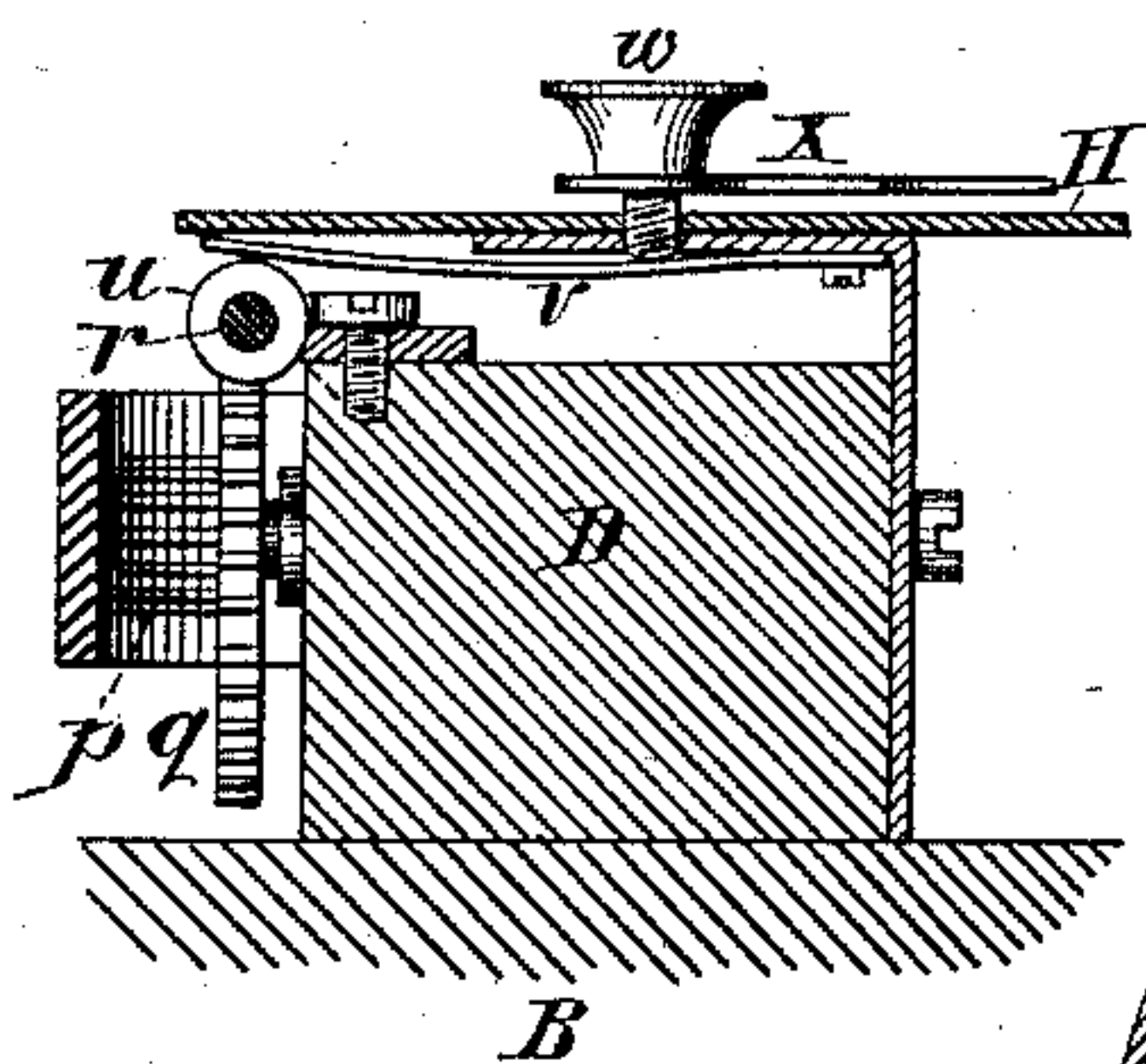


Fig. 7.

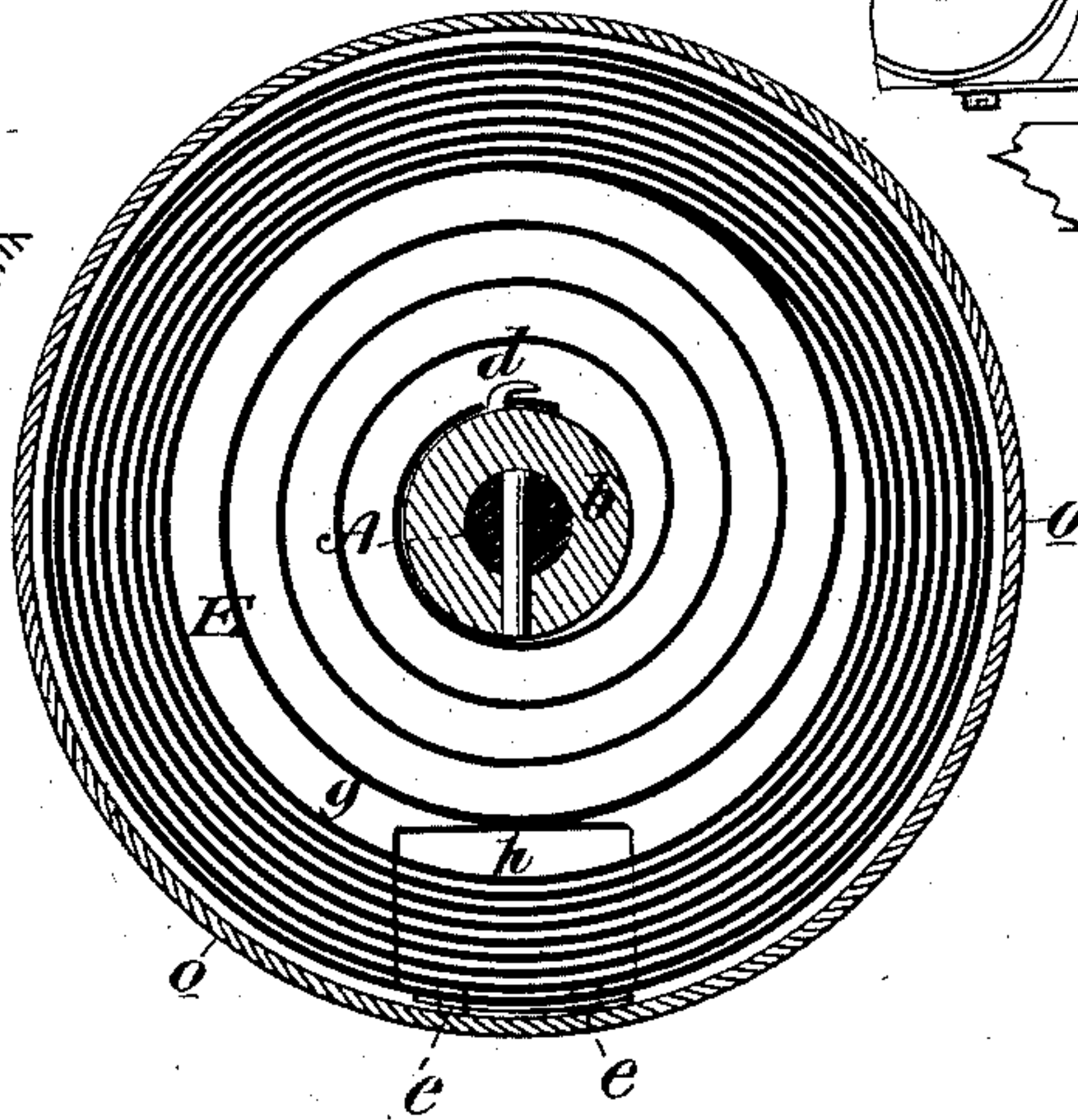
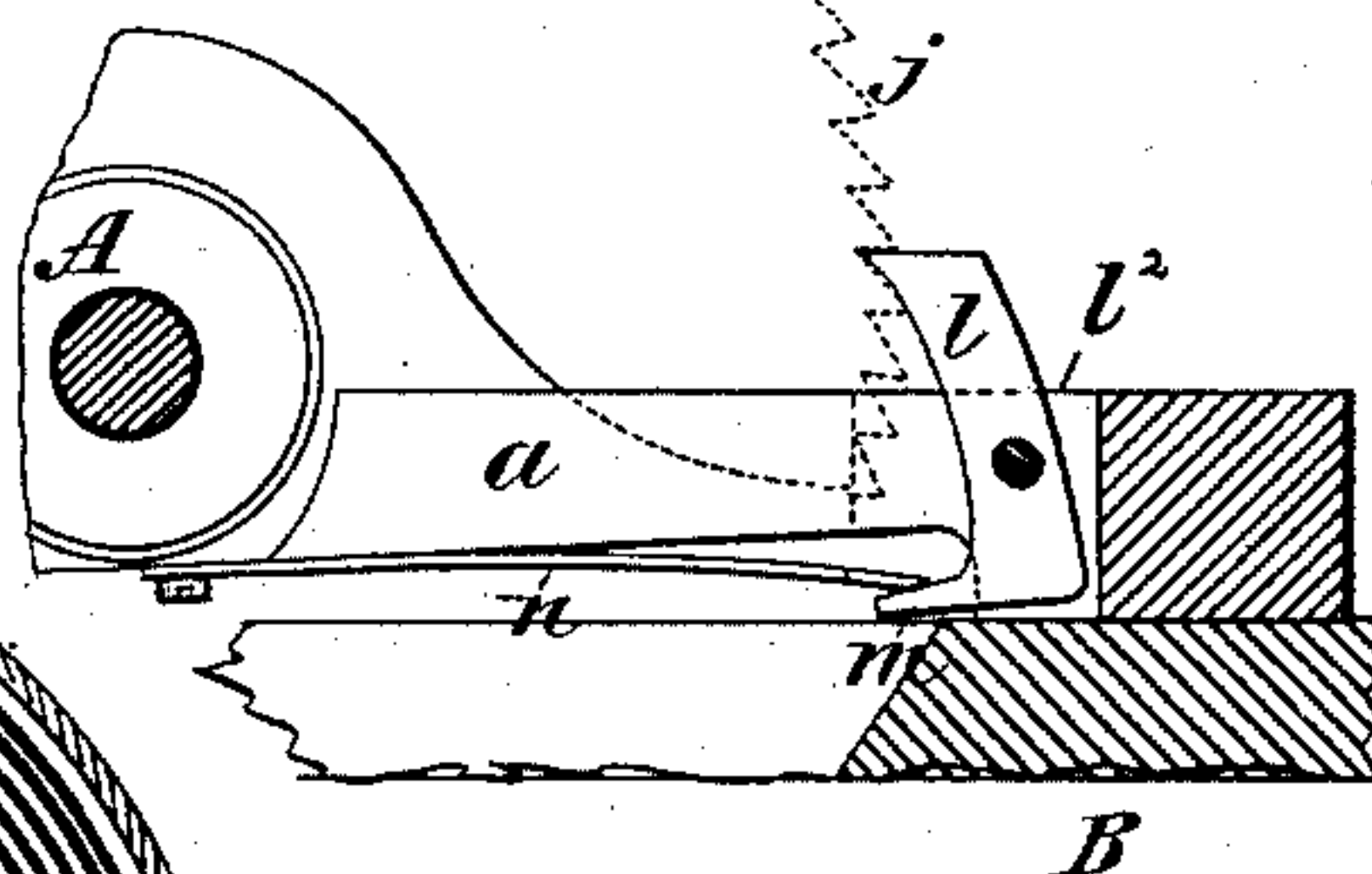


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES H. JACOT, OF HOBOKEN, NEW JERSEY.

MOTOR FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 374,410, dated December 6, 1887.

Application filed June 4, 1887. Serial No. 240,217. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. JACOT, of Hoboken, Hudson county, New Jersey, have invented new and useful Improvements in Motors for Music-Boxes, of which the following is a full, clear, and exact description.

My invention relates to the driving and speed-regulating gear in music-boxes.

The invention consists in two springs coupled together at their free ends, carried upon the main winding-arbor, and in connecting the inner end of one of these springs with the main winding-arbor and the inner end of the other of said springs with a loose hub carried upon said winding-arbor; also, in a loose partition carried upon the main winding-arbor between the two springs, said partition having a recess cut in its edge for the passage of the coupling connecting the two springs.

The invention also consists in a click or dog carried in the bridge which supports one end of the main winding-arbor, said click having an inwardly-projecting toe which is pressed upon by a spring carried on the under side of the bridge, to throw the click into engagement with a toothed wheel carried by the driving-arbor.

The invention also consists in a spring-plate adapted to be pressed against the fly-arbor to regulate the speed of the pin-barrel.

The invention consists, further, in details of construction and combinations of parts as will be more fully set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of the driving mechanism of a music-box embodying my invention. Fig. 2 is an end view of same. Fig. 3 is a detail of the free ends of two springs shown connected together. Fig. 4 is a top view of the speed-regulating plate or dial. Fig. 5 is a section on the line *c c*, Fig. 1. Fig. 6 is a section on the line *k k*, Fig. 1. Fig. 7 is a section on the line *z z*, Fig. 1. Fig. 8 is a detail of my improved click shown in position, and Fig. 9 is a perspective view of the main springs, as hereinafter stated.

A in the drawings represents the winding-arbor, journaled near one end in a bridge, *a*, which is secured on the base-plate B. At its other end the arbor A projects into the end of

a shaft, C, which is carried by a bearing-block, D, secured on the base B. The shaft C is adapted to be connected with and to revolve the pin-barrel of the music-box in the usual or suitable manner.

The shaft A carries a fast hub or enlargement, *b*, which is provided with a hook, *d*, to engage the inner end of a coiled spring, E. The outer end of the spring E is connected to the outer end of a similar spring, F, by a coupling or strap, *e*. (Best seen in Fig. 3.) The springs E and F are carried side by side, but are coiled in opposite directions. The inner end of the spring F is connected to a tube or sleeve, *f*, which is loose on the arbor A. The springs E and F are or may be separated by a partition, *g*, which is loose on the arbor A, between the hub *b* and the tube *f*. The partition *g* has a recess or hole, *h*, through which passes the coupling-strap *e* of the springs E and F.

The loose sleeve *f* carries on its outer end a flange, *h'*. The flange *h'* is provided with holes which receive pins *i* from a toothed wheel, G, rigidly secured to the shaft C.

The driving mechanism operates as follows: By turning the arbor A in the direction of the arrow, Fig. 9, the spring E will be wound upon the arbor from the inner end. As the winding continues, the outer end of the spring E is carried around, and, by means of the coupling *e*, draws the outer end of the spring F with it. This winds the spring F from the outer end toward the inner end upon the sleeve *f*. The springs E and F carry the partition *g* around with them. When the mechanism is permitted to start to produce music, the spring F first begins to unwind from the inside, which revolves the loose sleeve *f*, and consequently the wheel G and the pin-barrel and fan. As the spring F continues to unwind, its outer end will begin to unwind the spring E, which therefore assists in turning the parts of the music-box until both springs are run down. By the use of these two springs, which are coiled in opposite directions and connected together at their outer ends, I am enabled to dispense with a single stiff and strong spring to produce the requisite amount of power. This will be found of great advantage, as the stiffer the spring is made the more apt it is to break and the harder it is to wind up. The

diameter of the spring-barrel can also be reduced when two springs are thus used side by side. Considerable saving of labor and material is also effected by socketing the winding-shaft A at one end in the end of the driven shaft C. The inner end of the spring E may be directly secured to the shaft A, and the fast hub *b* thereby dispensed with.

To the arbor A, adjoining the outer edge of the hub *b*, is rigidly secured a ratchet-wheel, *j*. This wheel *j* is engaged by a click or pawl, *l*, to prevent its reverse movement. The click *l* is pivoted in a recess in the bridge *a*, and embraced by the cheeks *l'* of said recess, said cheeks serving to prevent lateral movement of the click; hence the click will always be in position to engage the ratchet-wheel *j*, and cannot be bent aside out of gear therewith. The click *l* carries an inwardly-projecting toe, *m*, at the lower end. A spring, *n*, secured to the under side of the bridge *a*, presses upon the upper side of the toe *m*, and serves to keep the dog *l* normally in contact with the ratchet-wheel *j*. A casing or drum, *o*, surrounds the springs E and F and the partition *g*, and preferably has an upright face-plate, *o'*, which is seated on the flange *h'*. The casing *o* serves to keep the springs E and F from unwinding to an undue extent, also protecting them from the action of the weather, dust, &c.

The toothed-wheel G gears with a pinion, *p*, on the shaft of a worm-wheel, *q*, preferably journaled in the bearing-block D. The worm-wheel *q* meshes with a horizontal worm, *r*, suitably journaled in the bearing-block D, and in an additional bearing-piece, *s*, carried by the base-plate B. The shaft of the worm *r* carries a fan, *t*, of suitable or ordinary construction. The arbor *r* may also carry a collar, *u*.

v is a flat spring having one end held fast and carried on the under face of a plate, H, which is suitably carried by the bearing-block D or by the base-plate B. The free end of the spring *v* is arranged over the collar *u* on arbor *r*, and is adapted to be pressed in contact with said hub by means of a set-screw, *w*, which works in the plate H and bears upon the upper face of said spring at a point intermediate between the fast and the loose ends thereof. By pressing the spring *v* upon the collar *u*, more or less, the speed at which the fan revolves, and consequently the speed of the pin-barrel, will be regulated. This will be found of great convenience where it is desired to have one tune play faster than another. The screw *w* carries a hand or pointer, *x*, which is adapted to pass over the face of the dial-plate H, which has appropriate marks

produced upon it, say "fast" and "slow," and intermediate points to indicate the speed at which the pin-barrel is to revolve.

Having now described my invention, what I claim is—

1. The loose sleeve *f* on winding-arbor A, combined with springs E and F, which are coupled together at their outer ends, and the arbor A, the inner ends of said springs being respectively carried by the arbor A and sleeve *f*, as described. 65

2. The winding-arbor A, carrying driving-springs and resting one end in the shaft C, combined with said shaft C, the shaft C being driven solely by the springs on arbor A, substantially as described. 70

3. The coupled springs E and F on arbor A, combined with the loose sleeve *f* and the fan-driving wheel G, the sleeve *f* being detachably connected to the wheel G, substantially as described. 75

4. The partition *g*, having hole *h*, in combination with the springs E F, shaft A, and sleeve *f*, substantially as herein shown and described. 80

5. The disconnected and loose outer drum, *o*, combined with the coupled springs E and F, surrounding arbor A, and with the loose sleeve *f*, said drum *o* resting on the springs E and F and on sleeve *f*, substantially as described. 85

6. In a motor for music-boxes, the click *l*, hung in a recess in the bridge *a*, and guarded on both sides by the cheeks *l'*, which prevent lateral movement of said click, combined with said bridge *a* and with the ratchet-wheel *j* on arbor A, which is hung in the same bridge *a*, substantially as described. 90

7. In a motor for music-boxes, the click *l*, provided with an inwardly-projecting toe, *m*, in combination with the spring *n* and ratchet-wheel *j*, as and for the purpose specified. 95

8. In a motor for music-boxes, the spring *n*, carried on the under side of bridge *a*, and adapted to bear upon the top of an inwardly-projecting toe, *m*, on click *l*, combined with said click and with the ratchet-wheel *j* on arbor A, as set forth. 100

9. The brake-spring *v*, fast at one end and loose at the other, and regulator dial-plate H, combined with the fan-arbor *r*, and with the screw *w*, and pointer *x*, the screw *w* bearing upon the spring at a point intermediate between the fast and the loose ends thereof, as specified. 105

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Witnesses:

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