

No. 708,799.

Patented Sept. 9, 1902.

E. H. COOK.

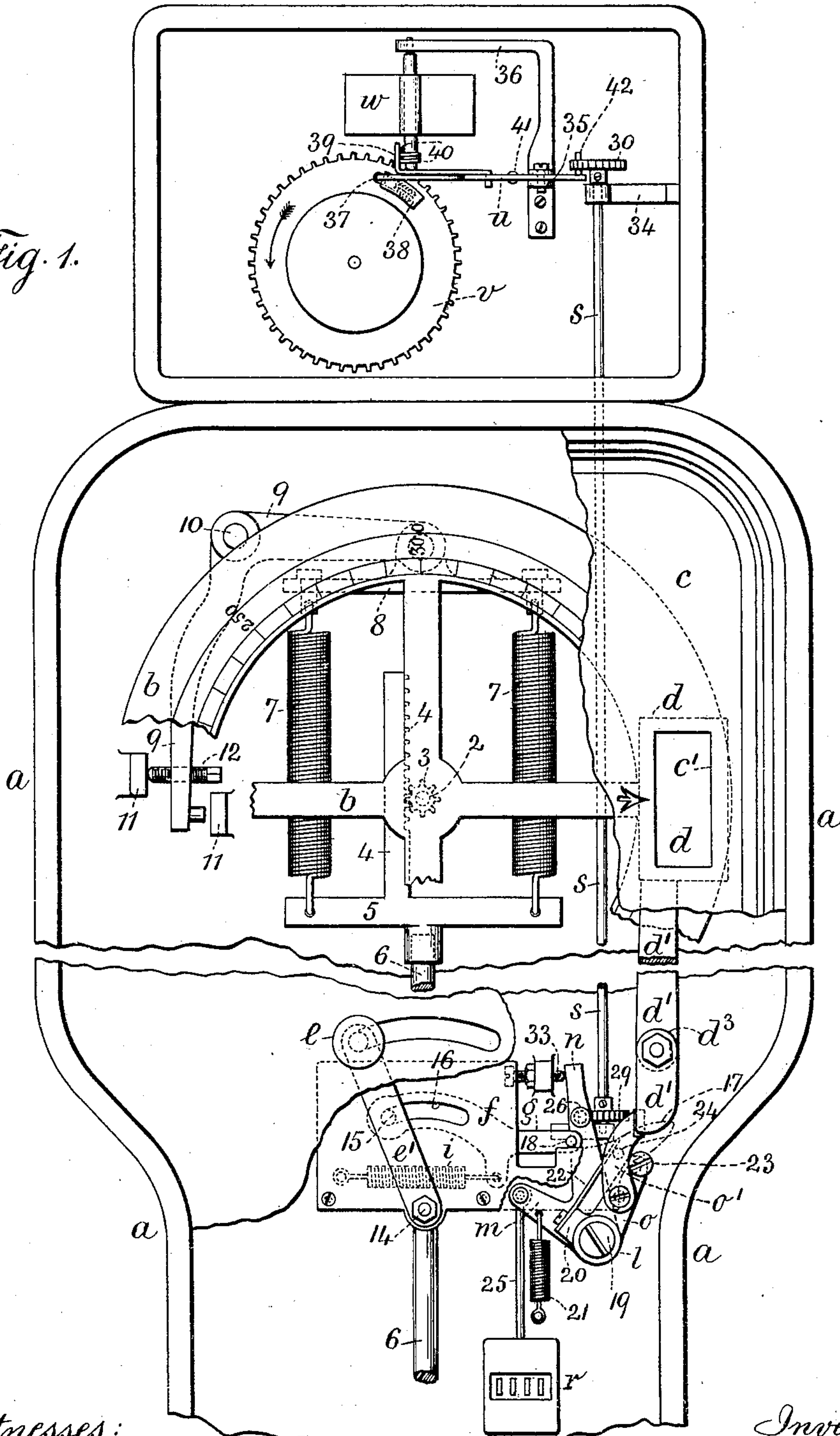
WEIGHING MACHINE.

(Application filed June 8, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:
J. Staib
Chas. N. Smith

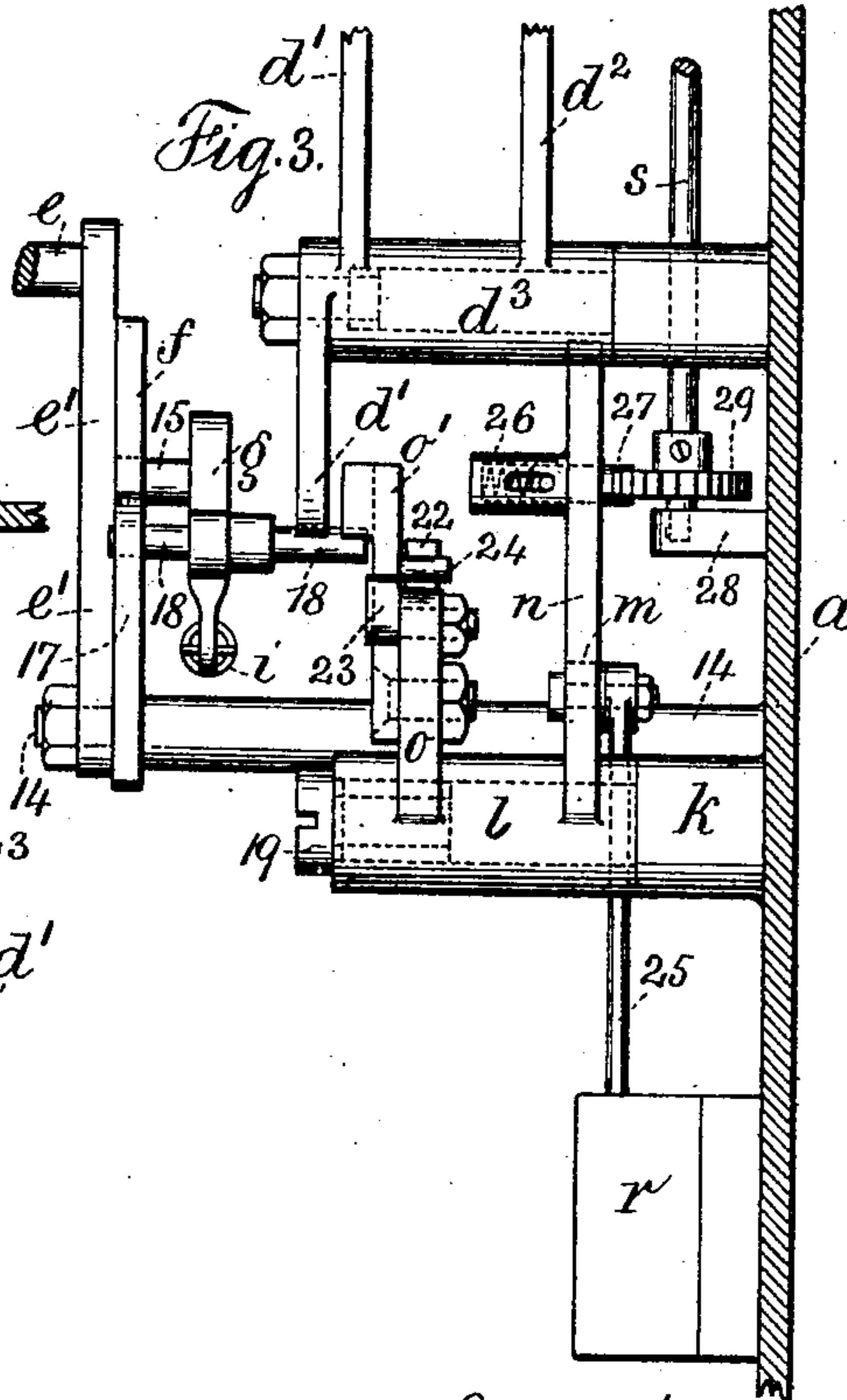
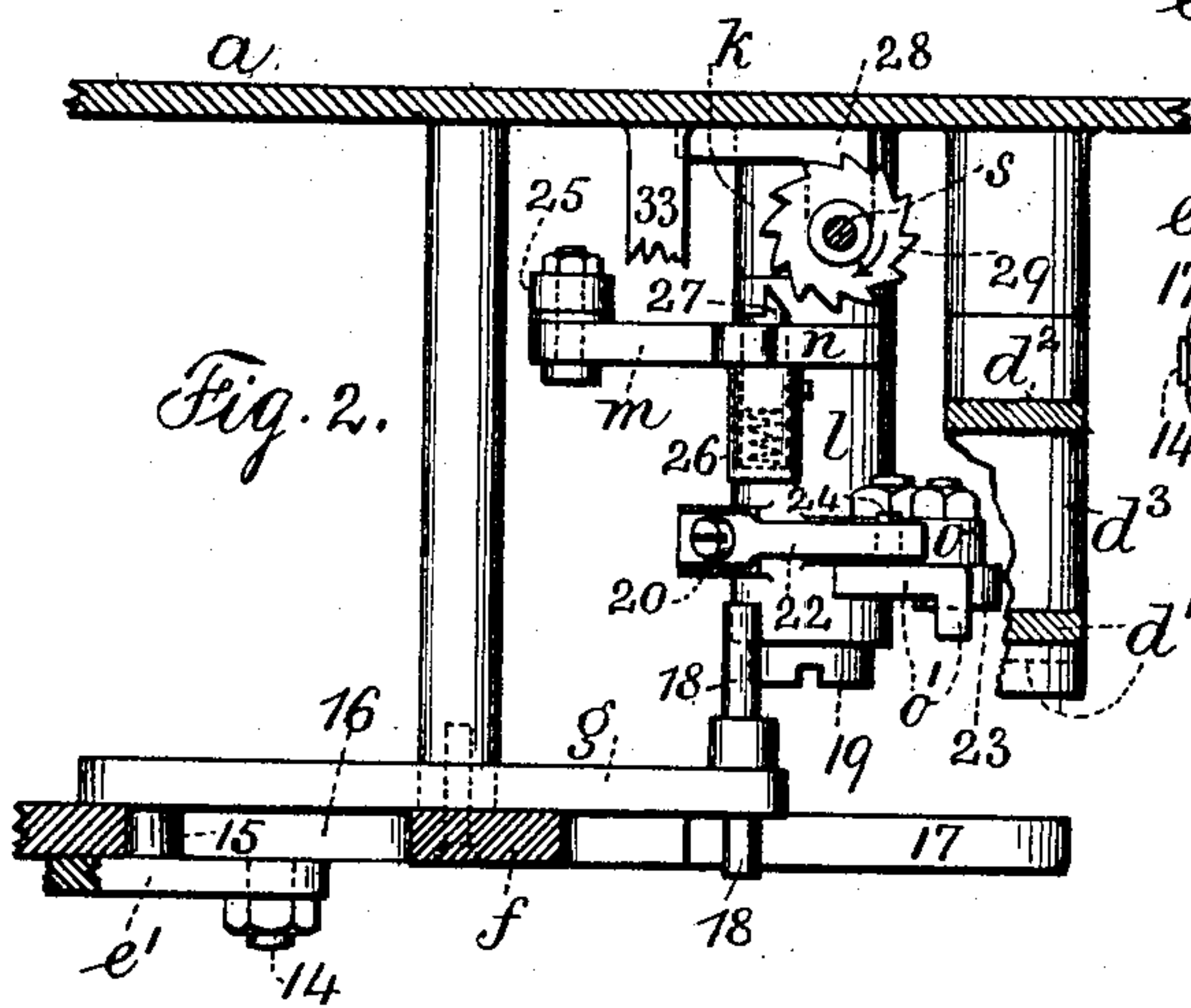
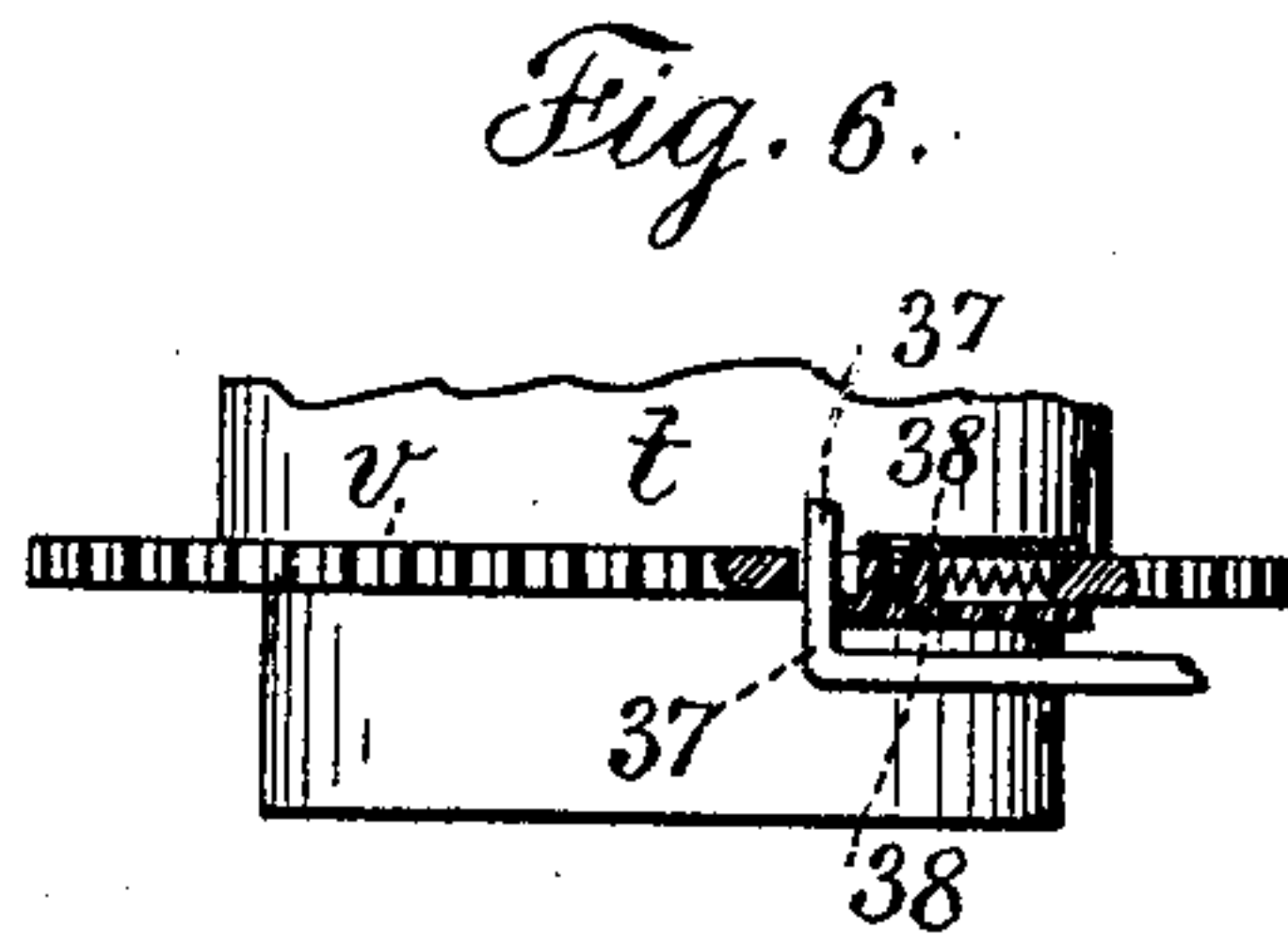
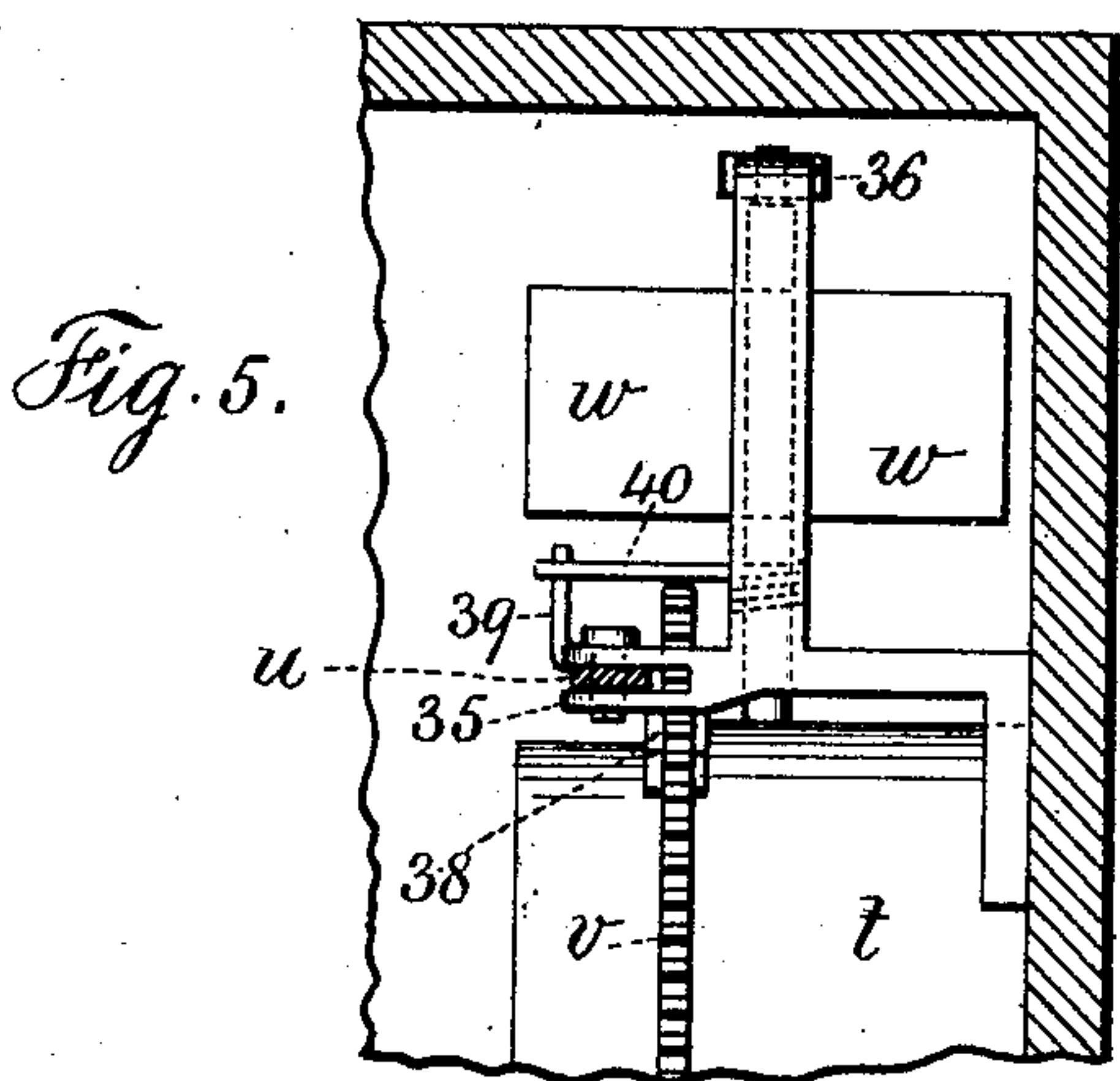
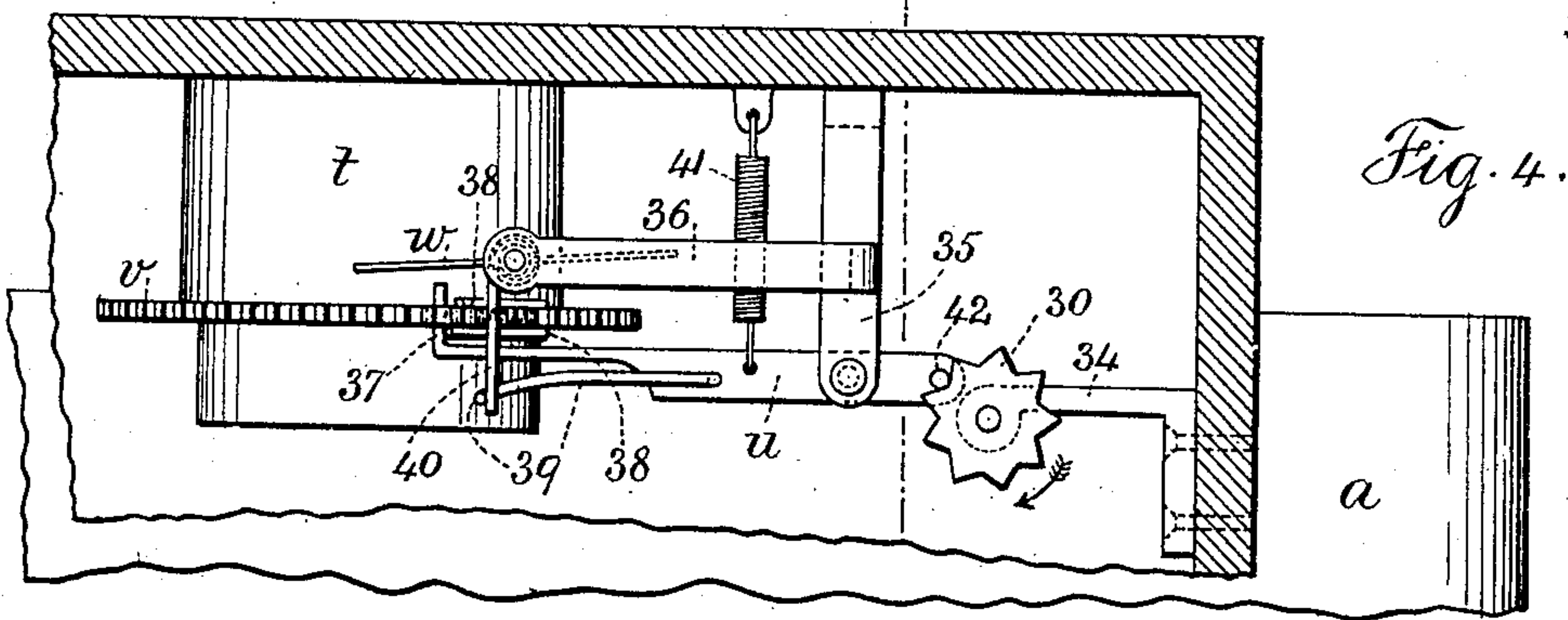
Inventor:
Edgar H. Cook
per L. W. Purcell & Son attys.

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2 Sheets—Sheet 2.



Witnesses:
J. Staib
Charles Smith

Inventor:
Edgar H. Cook,
per L. W. Terrell & Son Attys

UNITED STATES PATENT OFFICE.

EDGAR H. COOK, OF BROOKLYN, NEW YORK.

WEIGHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,799, dated September 9, 1902.

Application filed June 6, 1901. Serial No. 63,367. (No model.)

To all whom it may concern:

Be it known that I, EDGAR H. COOK, a citizen of the United States, residing at the borough of Brooklyn, in the county of Kings, city and State of New York, have invented an Improvement in Weighing-Machines, of which the following is a specification.

My present invention relates to improvements upon the devices shown and described in my patent of December 18, 1900, No. 664,313. In addition to these features my present invention relates especially to attachments for weighing-machines by which it is possible to register the number of times that the machine has been in operation and simultaneously with such registration and the operation of the machine to set in motion a music-box mechanism for the production of musical sounds.

The device of my present invention, like the device of the aforesaid patent, relates particularly to machines in which the indicator-dial is concealed beneath an ornamental face, there being an opening in the face and a shutter over the opening normally concealing the weight upon the dial behind the shutter, the said shutter being actuated by a person upon the platform of the machine after the insertion of a coin to discover the weight.

In my present invention the case, the platform, its lever, and the other parts of the weighing mechanism shown are of usual character, and the upper part of the case is provided with an ornamental face having an opening in one side thereof. The indicator-dial is concealed beneath the ornamental face, the opening coming at the weight indications and a central pointer being provided to indicate the weight after the removal of the shutter. In this device I provide an operative mechanism, such operative mechanism being by preference a coin-actuated device, the means for actuating this mechanism being adapted to move an arm to which the said shutter is connected, so that after the person to be weighed steps upon the platform and operates the weighing mechanism the shutter is moved away from the opening in the ornamental face, so that the person upon the platform discovers the weight through the opening opposite the pointer.

My present invention relates particularly to devices actuated by the aforesaid opera-

tive mechanism, and which devices are actuated simultaneously with the actuation of the shutter mechanism for effecting the registration of the number of times that the machine has been in operation and for simultaneously setting in motion a music-box mechanism for the production of musical sounds.

I do not herein claim as new any part of the registering mechanism *per se* nor of the music-box mechanism in itself.

The special devices of my invention are hereinafter more particularly described.

In the drawings, Figure 1 is an elevation of the case, the weighing mechanism, and most of the operative parts with the outer face broken away and with the music-box mechanism superposed upon the case. Fig. 2 is a plan view, and Fig. 3 a side elevation, in larger size than shown in Fig. 1, of the devices simultaneously acted upon by the operative mechanism for effecting the registration, operating the shutter, and setting the music mechanism in motion. Figs. 4, 5, and 6 are detailed views, in larger size, of parts of the music-box mechanism.

a represents the case of the weighing-machine, which may be of any desired character or configuration. This case contains the indicator-dial *b* upon an axis 2. The axis 2 carries a pinion 3, and a rack 4 engages the pinion 3, the lower end of the rack being connected to the cross-head 5. A rod 6 extends downward from the cross-head 5 to the lever of the weighing-platform, which latter parts are not shown. Between the cross-head 5 and the upper cross-head 8 there are helical springs 7, connected to said parts at their respective ends. The cross-head 8 is connected to a bell-crank supporting-lever 9, pivoted to a stud 10 upon the case, the free end of the bell-crank lever 9 being provided with an adjusting-screw 12, there being stops 11 upon opposite sides of the free end of the said lever, the screw 12 providing for the application of the proper tension to the springs. These parts just described are old in weighing-machines of this class, and I therefore do not claim the same.

The face *c* of the weighing-machine occupies a position in front of the indicator-dial *b*, and said face may be ornamented and made attractive in any desired manner, the face

being of such a character as to cause the indicator-dial behind the same to be invisible. At one side in the face *c* I provide a rectangular opening *c'*, disposed vertically, and an adjacent pointer upon the face is centrally located with reference to the said opening, the said pointer being preferably on an imaginary horizontal line drawn through the axis of the weighing-machine. A shutter *d* occupies a position behind the face *c*, normally covering the opening *c'* therein. This shutter is larger than the said opening and is mounted upon an arm *d'*, connected to a hub *d³*, and which hub preferably carries a second arm *d²*. The arm *d'* is between the face *c* and the dial *b* and the arm *d²* behind the dial *b*. The hub *d³* is upon a stud projecting from the back of the case of the machine, and from the said hub extending downward there is an arm which is practically a continuation of the arm *d'* and which arm carries the same letter of reference. A swinging movement is imparted to the arms *d'* *d²* and the shutter *d* upon the hub *d³* by a suitable operative mechanism.

I do not limit myself to the details of the operative mechanism; but for the purpose of an operative mechanism I have illustrated the following parts: A handle *e*, connected to a crank-arm *e'*, is in turn pivoted by a shaft 14 to a frame *f*, the said parts being within the case and the handle *e* projecting through a curved mortise in the case. The crank-arm *e'* carries a stud 15, passing through a curved slot 16 of the frame *f*, and the said stud on the other side of the frame is connected to a reciprocating plate *g*, moved back and forth by the handle *e* and crank-arm *e'* and the said stud, and to insure the return movement of these parts I provide a spring *i*, with one end fastened to the frame *f* and the other end to a projection of the reciprocating plate *g*. I provide a slideway 17, formed as a continuation of the frame *f*, and a pin or projection 18, connected to the reciprocating plate *g*, the pin or projection moving over the slideway and adapted to come against the lower end of the arm *d'*, which is adjacent thereto, so as to swing the arms *d'* *d²* and move the shutter *d*. The movement of the handle device and this reciprocating plate *g* thereby effects this swinging movement and removes or retracts the shutter *d* from the opening *c'* in the face *c*, so that the weight may be discovered upon the dial.

My present invention relates particularly to the parts hereinafter described and which parts are acted upon by the operative mechanism hereinbefore described, said action being simultaneous with the operation thereby of the shutter mechanism, so that the shutter is operated, the registration effected, and the music-box mechanism set in operation with one movement of said operative mechanism.

A stud *k* is secured to and projects from the case *a*. Upon this stud is a sleeve *l*, held to

the stud by a screw 19. I employ arms *m*, *n*, and *o* and a support 20, which parts are preferably formed integral with the sleeve *l* and bear the relation to one another shown in Figs. 1, 2, and 3 of the drawings. A spring 21 is fastened at one end to a pin of the case *a*, and the other end thereof passes through an opening in the arm *m* to hold the sleeve and the series of arms in a predetermined position, in which the upper end of the arm *n* comes against an adjustable stop 33 upon the case. A spring 22 is secured to the support projection 20 of the sleeve, and I provide an eccentric 23 upon the free end of the arm *o*. This eccentric is held in place by its stem, which passes through the arm *o*, and on the end of which stem is a clamping-nut bearing upon the opposite side of the arm *o*. (See Figs. 2 and 3.) An auxiliary arm *o'* is pivoted to the arm *o*, and the free end of said arm *o'* has a sidewise-projecting lug. There is a pin 24 projecting from the back of said arm *o'* and upon which the spring 22 bears to force the said arm *o'* against the surface of the eccentric 23. By reference to Fig. 1 it will be noticed that the position of the auxiliary arm *o'* with reference to the eccentric 23 is practically at its extreme limit and that with the turning of the eccentric said arm is moved toward the left hand, in which the spring 22 is strained to a greater extent. A rod 25, pivoted to the free end of the arm *m*, extends therefrom to the registering mechanism *r*. Projecting from the surface of the arm *n* is a hollow hub 26, mortised in opposite sides, and in this hub is a spring-actuated tooth 27. A pin passes through this tooth and through the mortises of the hub to limit the outward movement of the tooth and to prevent the tooth turning in said hub, the extent of the inward movement of the said tooth being controlled by the spring.

A bracket 28 projects from the case *a*, (see specially Fig. 3,) and a vertical rod *s* is journaled at its lower end in said bracket and at its upper end in a bracket 34 of the case of the music attachment. Near the lower end of the rod *s* is a toothed wheel 29, engaged by the aforesaid spring-actuated tooth 27. At the upper end of the rod *s* is a star-wheel 30. Arms 35 36 project from a common bracket secured to the case of the music attachment.

t represents the case of the train of gears or other device for actuating the toothed wheel *v*, and the shaft of the governor *w* projects from this movement-case *t* and its upper end has a bearing in the forward end of the arm 36.

A pivoted lever *u* is connected to the forward end of the arm 35, and the same is provided with a finger 37 and with an arm 39, and the governor-shaft is provided with a spring-arm 40. The toothed wheel *v* is provided with a mortise, and a spring-actuated slide operates in this mortise and is connected to the toothed wheel. This slide is formed

of two plates upon opposite surfaces of the toothed wheel, connected through the mortise by a screw, and between these plates is a helical spring, with one end bearing upon the toothed wheel and the other upon the slide. Figs. 4, 5, and 6 show the normal or position of rest of these parts, in which the finger 37 occupies a position in the said mortise of the toothed wheel *v*, partially retracting the said slide 38. In this position the arm 40 of the governor is engaged by the arm 39 of the lever *u*, and a pin 42, also formed on the lever *u*, but on its other end, is in engagement with the star-wheel 30.

In the operation of the parts and with the movement of the operative mechanism hereinbefore described the projection 18, moving over the surface of the slideway 17, comes simultaneously into engagement with the end of the arm *o'* and the lower end of the shutter-arm *d'* and moves said shutter-arm and shutter and at the same time swings the arms *m n o* and the auxiliary arm *o'*, these parts moving with and by the projection 18 to the limit of its movement when they are released. In this movement the spring 21 is put under tension, the rod 25 has been moved to effect the operation of the registering mechanism *r*, and the spring-tooth 27 has been moved over the surface of the toothed wheel 29 to a point where the said tooth engages with one of the teeth of said wheel. The return movement is effected by the contraction of the spring 21, which in moving the arms *m*, *n*, and *o* back to the normal position, Fig. 1, turns the toothed wheel 29 and the vertical rod *s* and the star-wheel 30, swinging the lever *u* and withdrawing its finger 37 from engagement with the toothed wheel *v* and its arm 39 from engagement with the arm 40. The music mechanism is thus released and in its operation produces musical tones for the entertainment of the person upon the platform while being weighed. The movement of the star-wheel 30, actuating the lever *u*, puts under tension the spring 41, so that when the pin of the lever *u* passes into the next notch of the star-wheel the spring 41 returns the lever *u* to as nearly as possible the normal position—that is to say, with the point of the finger 37 against the surface of the toothed wheel *v*. The music mechanism continues for one rotation of the toothed wheel *v* in the direction of the arrow, Fig. 1, and when the edge of the slide 38 comes around against and contacts with the finger 37 the finger acts to move back the slide and uncover the mortise therein with the further forward movement of the toothed wheel *v*, and as soon as sufficient of the mortise is uncovered the spring 41 draws the point of the finger into the opening, and as soon thereafter as the arm 40 of the governor rotating therewith comes in contact with the upturned end of the arm 39 the movement of the parts is arrested until again actuated by the movement of the lever device by the operative mechanism hereinbe-

fore set forth, when the movement of the parts is again repeated in the manner described. It will thus be observed that the movement by the operative mechanism of the lever device simultaneously effects the registration, operates the shutter mechanism, and sets in motion the music-box mechanism. The eccentric 23 is useful for the adjustment of the auxiliary arm *o'* to bring its outturned end into substantial alinement with the lower end of the shutter-arm *d'*, but principally to adjust the position of the lever mechanism, so as to impart the requisite amount of movement to the rod 25, extending to the registering mechanism, and to the spring-actuated tooth 27 for operating the rods and the toothed wheels 29 and 30.

I claim as my invention—

1. In a weighing-machine, the combination with the weighing mechanism, a face covering the indicator-dial thereof and having an opening therein, and a shutter for normally covering the opening, and a hand-operated mechanism for effecting the movement of the shutter, of a rod extending from a registering mechanism, a lever device to which said rod is connected and which lever device is set in motion by the hand-operated mechanism simultaneously with the shutter mechanism for effecting the registration of the number of times the machine has been used, and a spring-actuated adjustable device connected with the lever mechanism and which may be set in proportion to the movement required of the rod extending to the registering mechanism, substantially as set forth.

2. In a weighing-machine, the combination with the weighing mechanism, a face covering the indicator-dial thereof and having an opening therein, and a shutter for normally covering the opening, and a hand-operated mechanism for effecting the movement of the shutter, of a lever mechanism comprising the arms *m n* and *o*, a hub upon which the same are mounted, a stop for limiting their movement, and a spring for holding the same in a normal position of rest, a spring-actuated adjustable device connected to said lever mechanism, a spring-actuated tooth connected to the arm *n*, and devices set in motion by the lever mechanism for effecting the release and permitting the movement of a music-box mechanism, substantially as set forth.

3. In a weighing-machine, the combination with the weighing mechanism, a face covering the indicator-dial thereof and having an opening therein, and a shutter for normally covering the opening, and a hand-operated mechanism for effecting the movement of the shutter, of a lever mechanism comprising the arms *m n* and *o*, a hub upon which the same are mounted, a stop for limiting their movement and a spring for holding the same in a normal position of rest, an auxiliary arm *o'* pivoted to the arm *o*, an eccentric device upon the free end of the arm *o*, a pin on the auxiliary arm and a spring for holding the

said auxiliary arm against the eccentric device, a hollow hub on the arm *n*, and a spring-actuated non-rotatable tooth in said hub, and devices, substantially as set forth and adapted to be set in operation by the spring-actuated tooth of the arm *n* for releasing said mechanism and permitting the movement of a music-box mechanism, substantially as set forth.

4. In a weighing-machine, the combination with the weighing mechanism, a face covering the indicator-dial thereof and having an opening therein and a shutter for normally covering the opening, and a hand-operated mechanism for effecting the movement of the shutter, of a lever mechanism comprising the arms *m n* and *o*, a hub upon which the same are mounted, a stop for limiting their movement, and a spring for holding the same in a normal position of rest, an auxiliary arm *o'* pivoted to the arm *o*, an eccentric device upon the free end of the arm *o*, a pin on the auxiliary arm and a spring for holding the said auxiliary arm against the eccentric device, a hollow hub on the arm *n*, and a spring-actuated non-rotatable tooth in said hub, a rod *s* extending vertically from the case of a music-box mechanism through the case of the weighing-machine upon which the mechanism is superposed, supports therefor, a toothed wheel on the lower end of said rod adapted to be engaged by the tooth 27, a star-wheel on the upper end of said rod, a pivoted lever *u* having a pin engaged by the star-wheel, a finger 37 on the free end of the said lever and an arm 39 connected to said lever, means connected to the governor of the music-box mechanism and adapted to engage the said arm 39, a spring-actuated slide in the toothed wheel of the said music-box mechanism moving through a mortise in said wheel and which parts are engaged by the finger of said lever, substantially as set forth.

5. In a weighing-machine, the combination with the weighing mechanism, a face covering the indicator-dial thereof and having an opening therein and a shutter for normally covering the opening, and a hand-operated mechanism for effecting the movement of the shutter, of a case for a music-box mechanism superposed upon the case of the weighing-machine, an arm projecting from the shaft of the governor thereof, a spring-actuated slide movable in a mortise in the toothed wheel thereof, a pivoted lever *u* having a finger on one end adapted to engage said spring-actu-

ated slide and enter the mortise in the toothed wheel, an arm 39 connected to said lever and adapted to engage the arm of the governor-shaft, a pin upon the other end of said lever *u*, a vertical shaft *s* extending through the case of the music-box mechanism into the case of the weighing-machine, a star-wheel 30 on its upper end engaging the pin of said lever, a toothed wheel 29 on its lower end, bearings for said vertical rod *s*, and devices, substantially as herein shown and described and operated by the hand-operated mechanism simultaneously with its operation of the shutter device for releasing and setting in motion the music-box mechanism, substantially as described.

6. In a weighing-machine, the combination with the weighing mechanism, a face covering the indicator-dial thereof and having an opening therein, and a shutter for normally covering the opening, and a hand-operated mechanism for effecting the movement of the shutter, of a case for a music-box mechanism superposed upon the case of the weighing-machine, an arm projecting from the shaft of the governor thereof, a spring-actuated slide movable in a mortise in the toothed wheel thereof, a pivoted lever *u* having a finger on one end adapted to engage said spring-actuated slide and enter the mortise in the toothed wheel, an arm 39 connected to said lever and adapted to engage the arm of the governor-shaft, a pin upon the other end of said lever *u*, a vertical shaft *s* extending through the case of the music-box mechanism into the case of the weighing-machine, a star-wheel 30 on its upper end engaging the pin of said lever, a toothed wheel 29 on its lower end, bearings for said vertical rod *s*, and a lever mechanism comprising the arms *m n* and *o*, the adjustable spring-actuated auxiliary arm *o'*, the spring 21, and a spring-actuated tooth 27, said lever mechanism being set in motion by the hand-operated mechanism simultaneously with its movement of the shutter mechanism and a tooth 27 upon the return movement engaging the toothed wheel 29 to release the devices actuated by the rod *s* to permit the operation of the music-box mechanism, substantially as set forth.

Signed by me this 31st day of May, 1901.

EDGAR H. COOK.

Witnesses:

GEO. T. PINCKNEY,
S. T. HAVILAND.