

G. G. MERRY.
COIN OPERATED WEIGHING SCALE.

No. 483,787.

Patented Oct. 4, 1892.

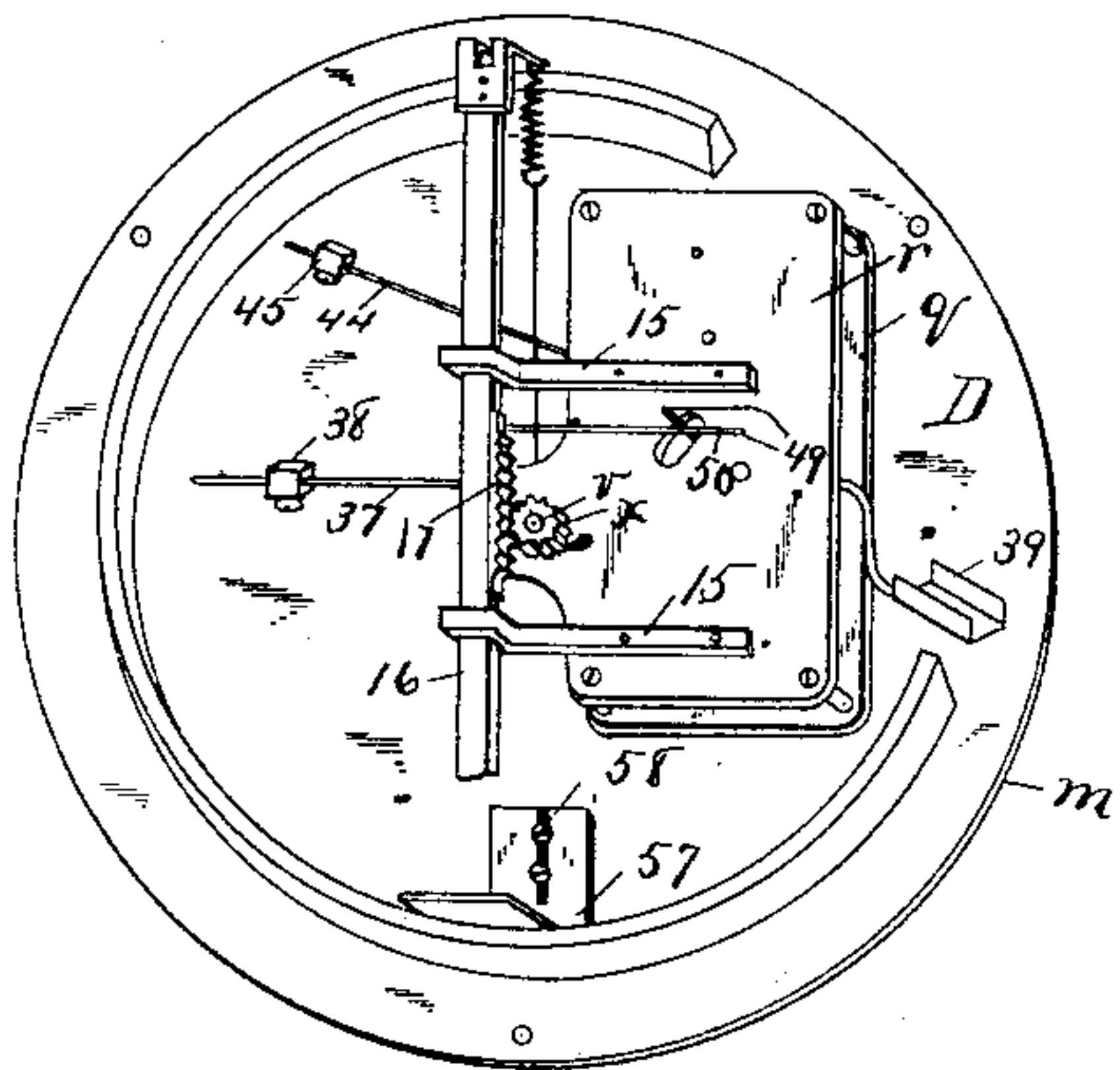


Fig. 3.

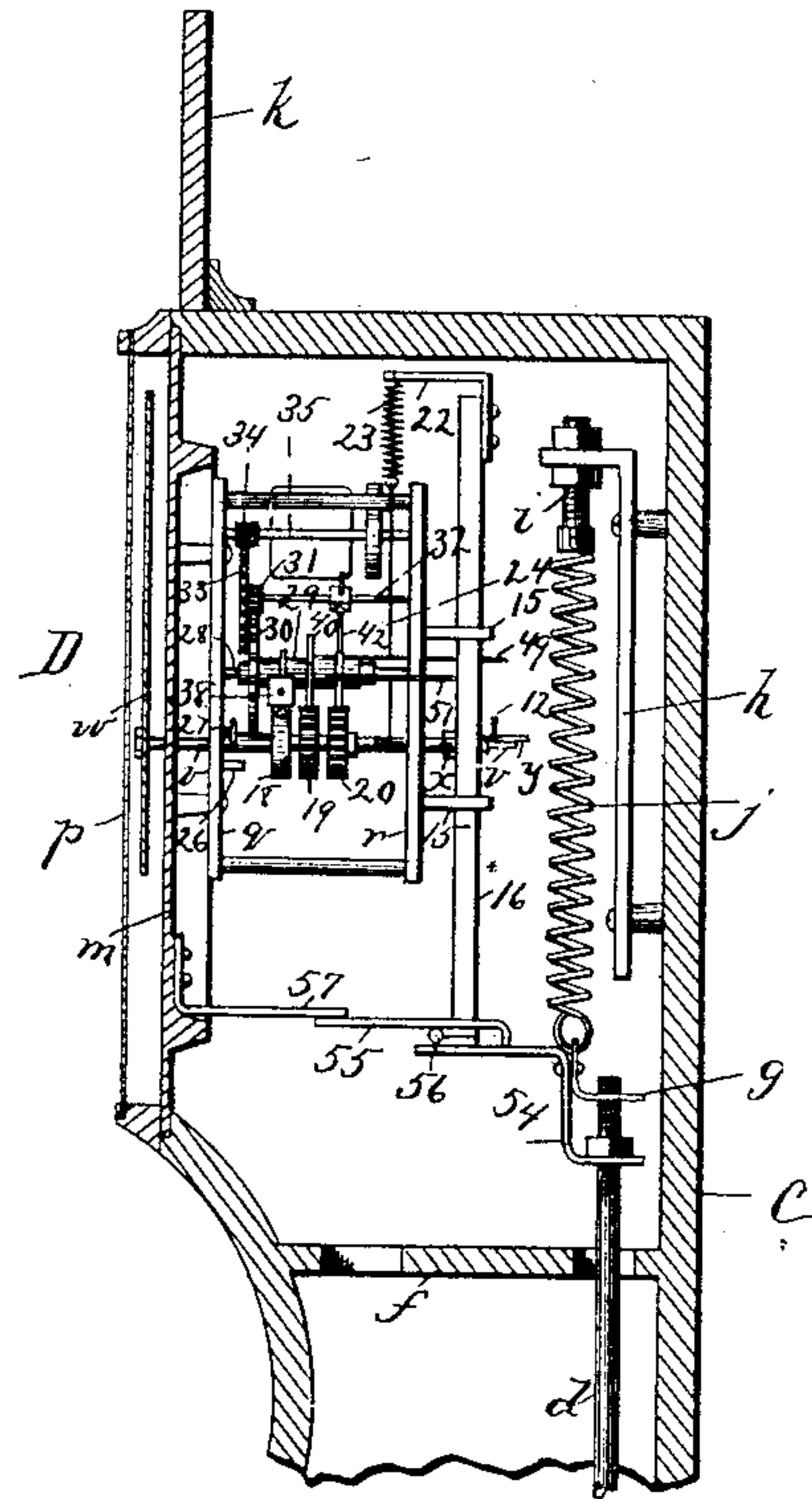
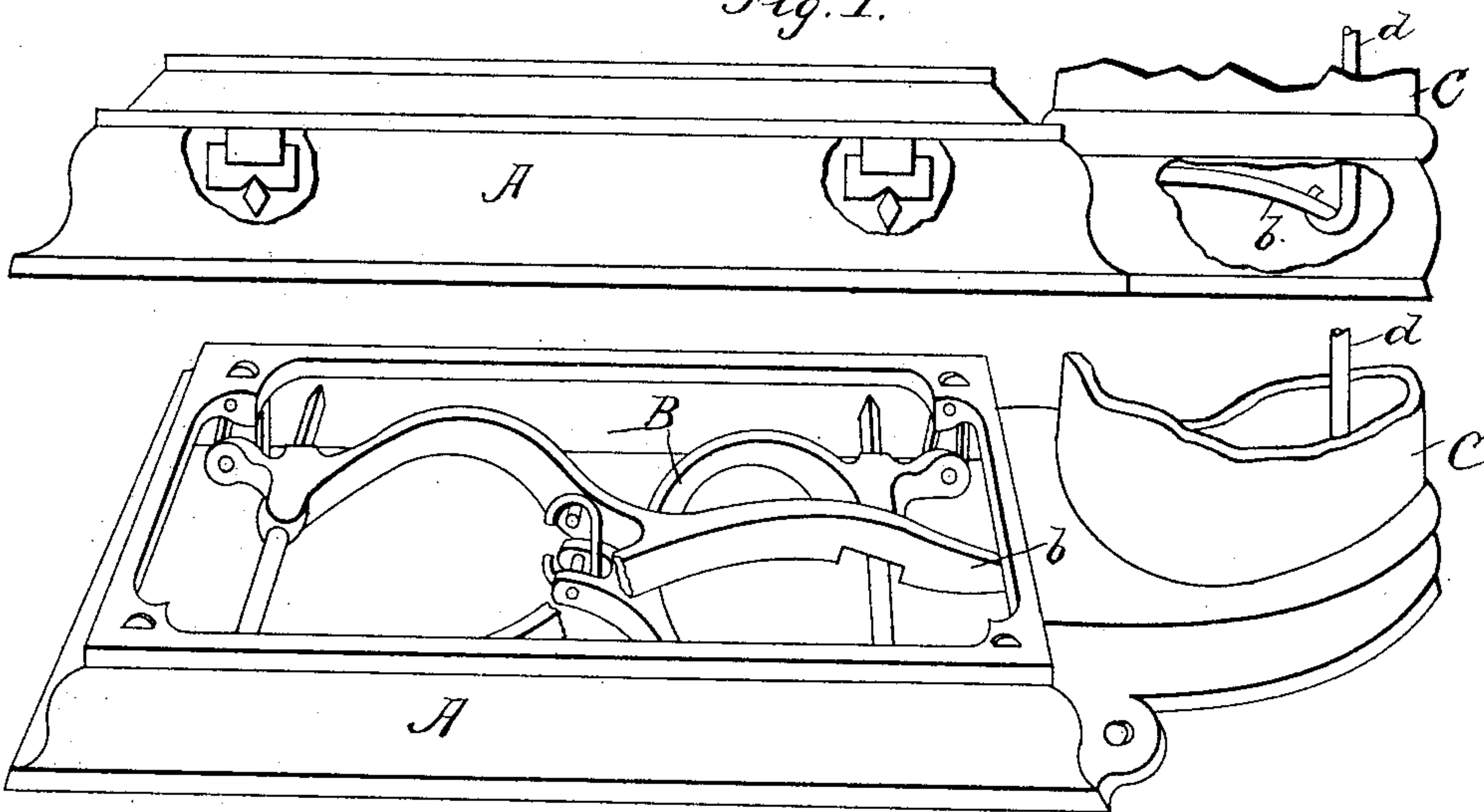


Fig. 1.



(No Model.)

2 Sheets—Sheet 2.

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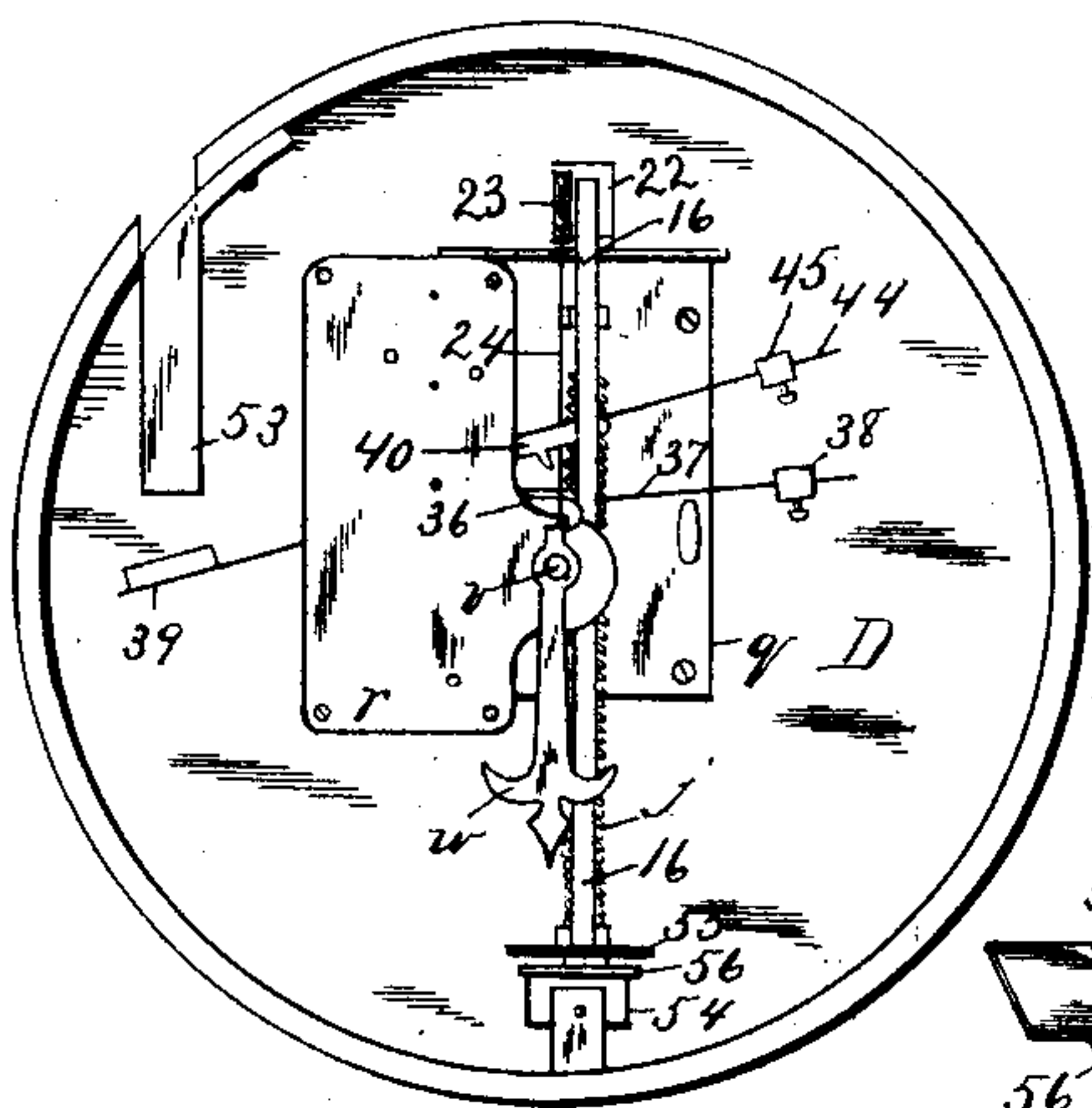


Fig. 5.

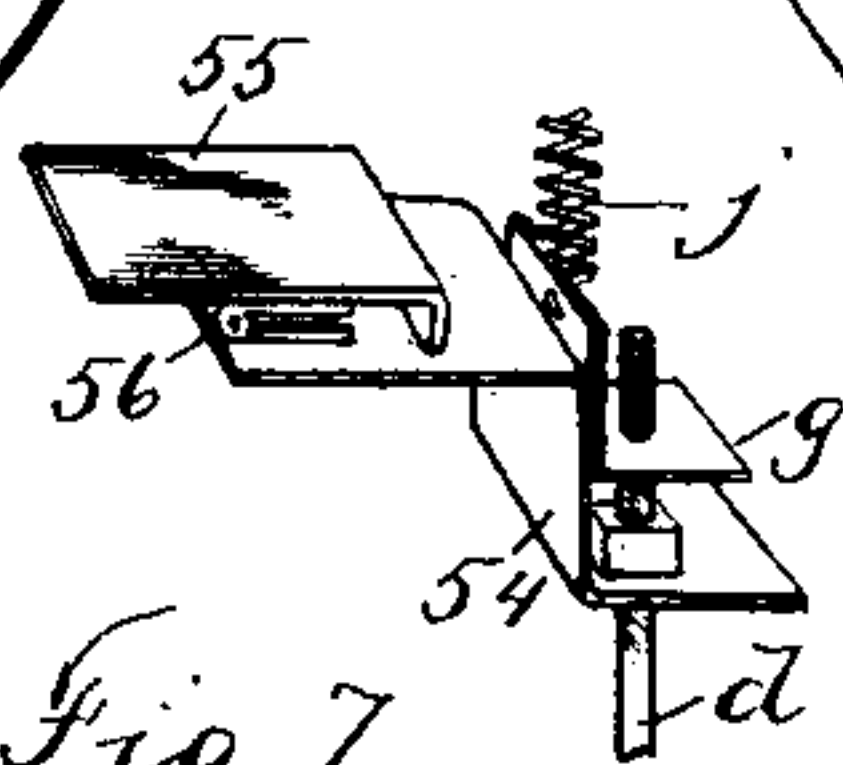


Fig. 7.

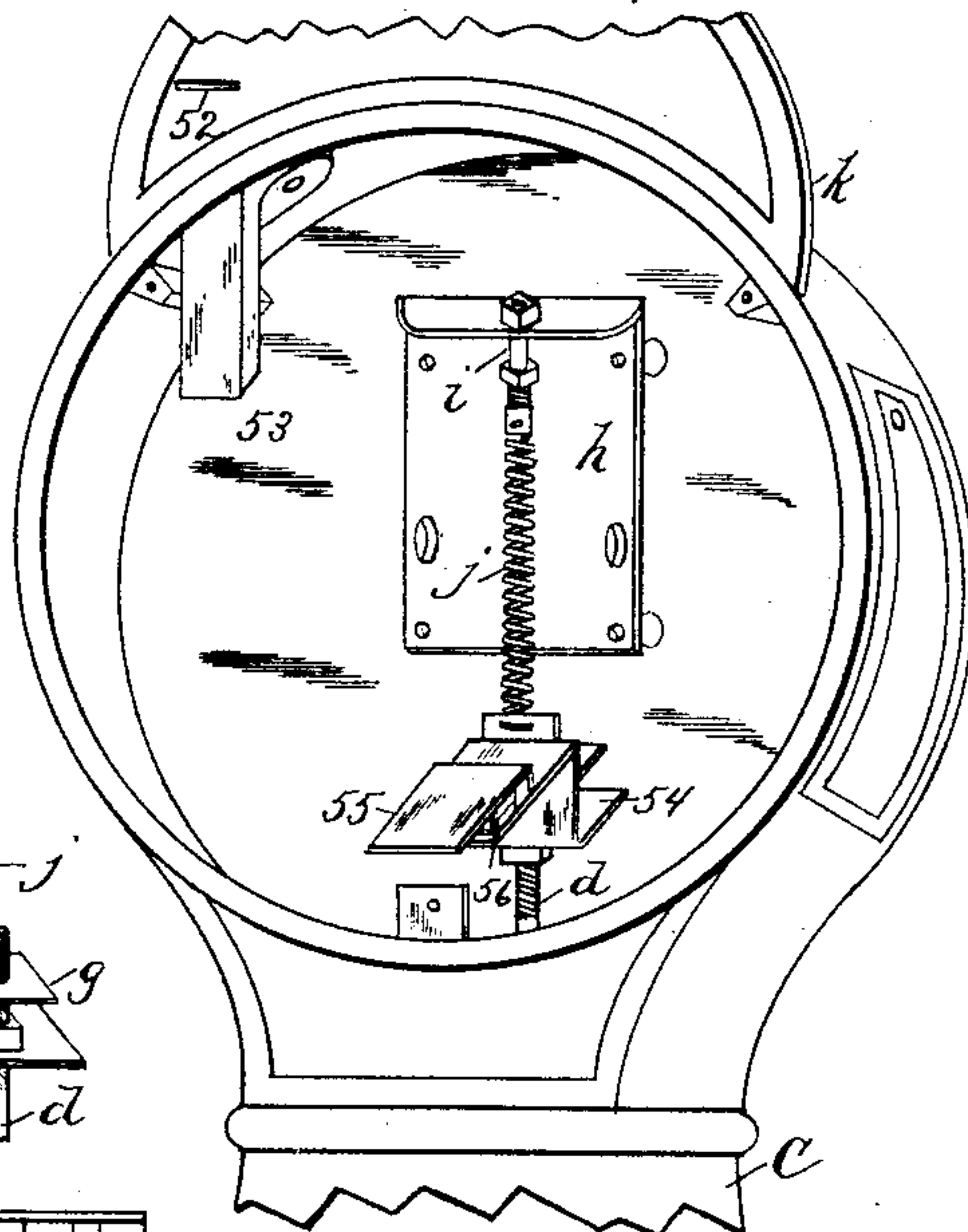


Fig. 4.

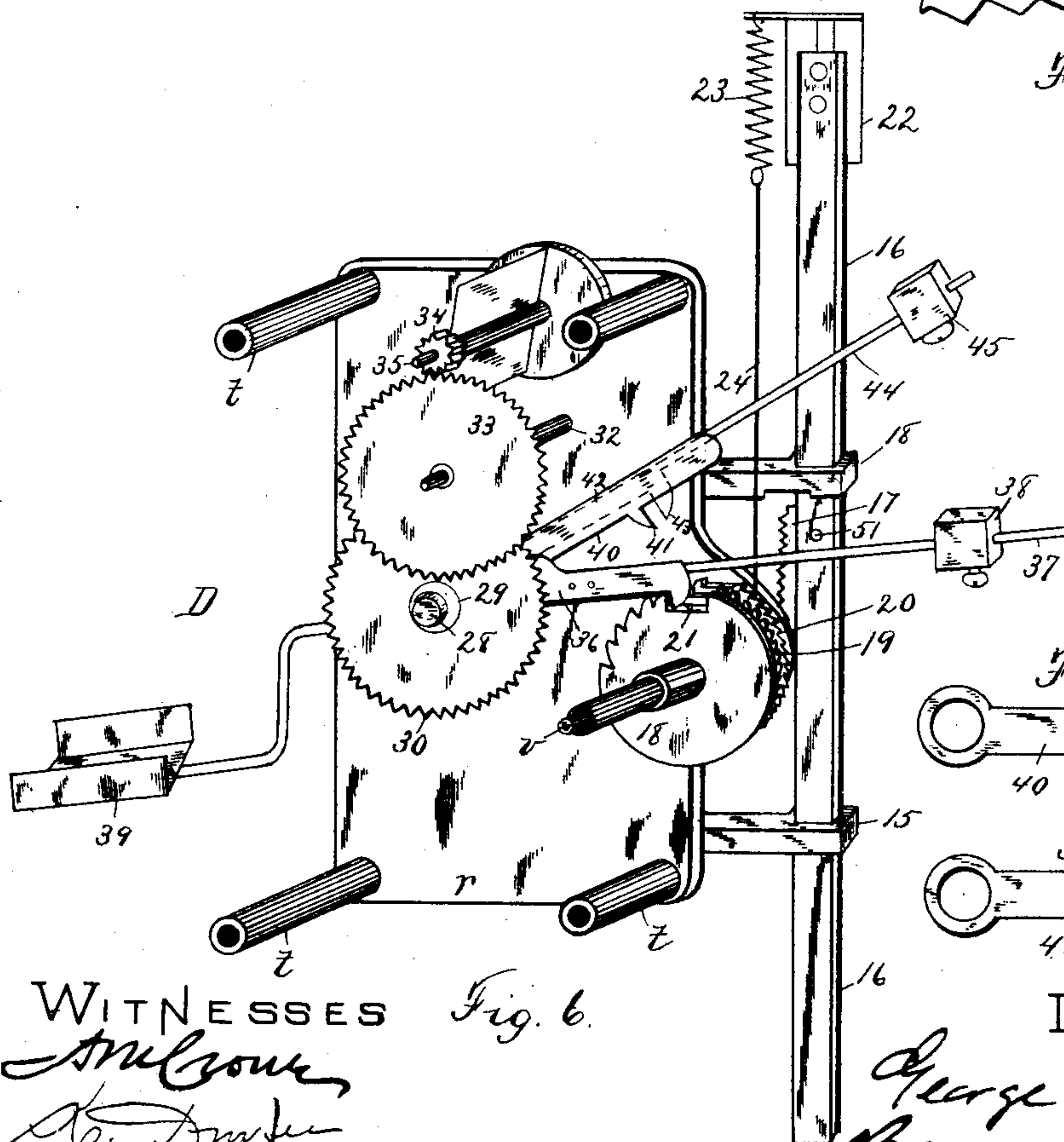


Fig. 6.

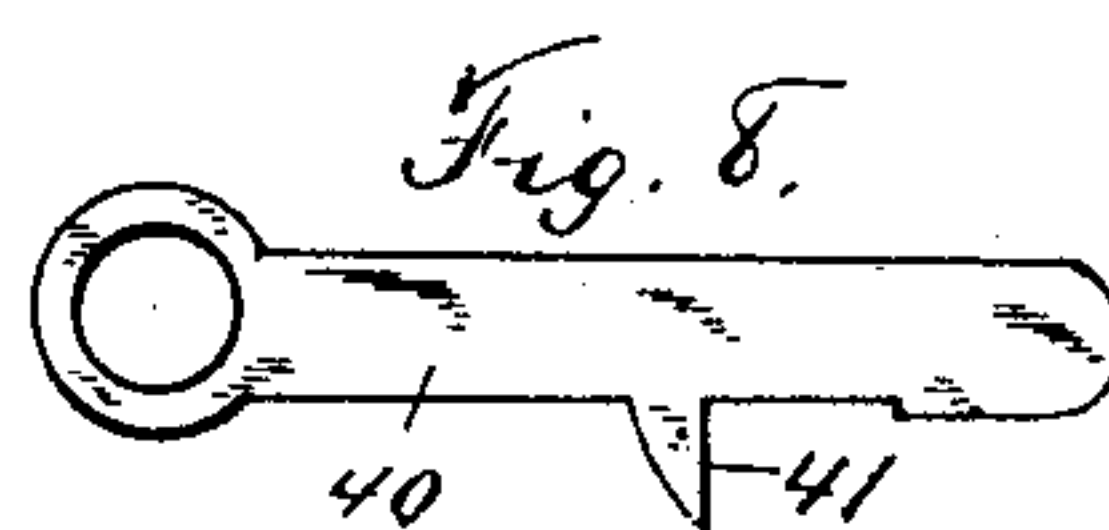


Fig. 8.

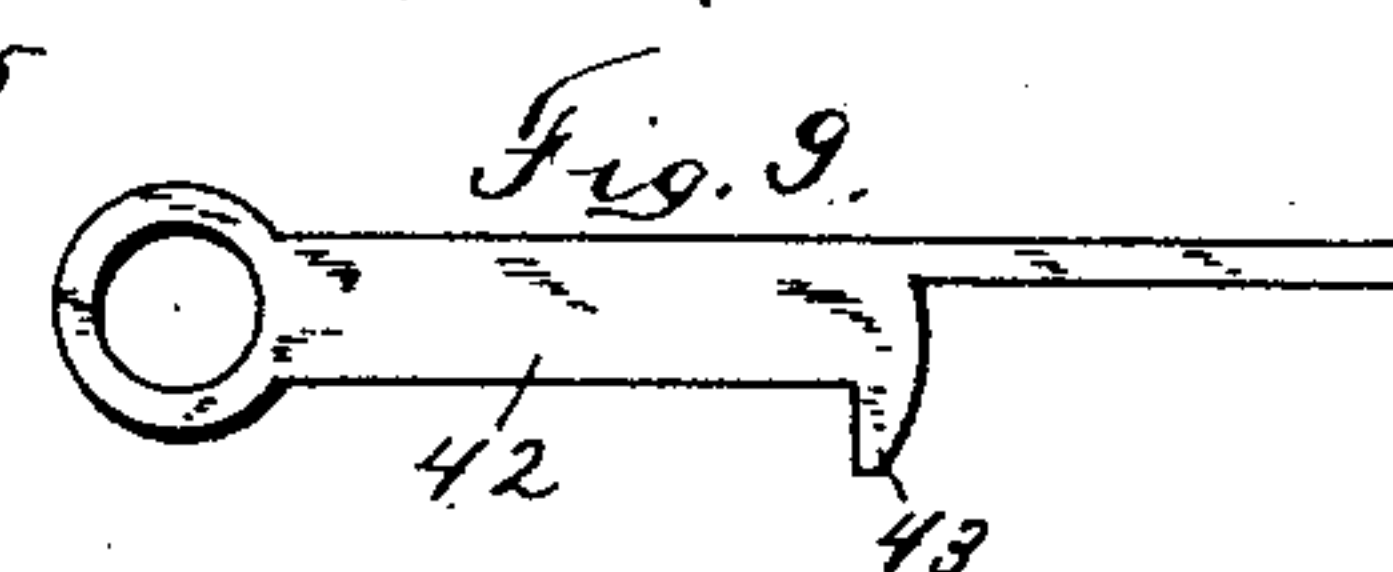


Fig. 9.

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COIN-OPERATED WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 483,787, dated October 4, 1892.

Application filed May 28, 1892. Serial No. 434,808. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. MERRY, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Coin-Operated Weighing-Scales, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved scale, the box being represented in section and broken away, showing the index mechanism in side elevation. Fig. 2 is a perspective view of the platform mechanism, the platform-top being removed. Fig. 3 is a rear elevation of the index mechanism, looking from the right in Fig. 1. Fig. 4 is a perspective view showing the weighing-spring and connecting mechanism, the dial and index mechanism being removed. Fig. 5 is a front elevation of the index mechanism, the dial being removed. Fig. 6 is a perspective view, enlarged, of the index mechanism. Fig. 7 is a perspective view showing the connection between the weighing-spring and platform-lever, and Figs. 8 and 9 are elevations illustrating details.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a coin-released platform weighing-scale mechanism; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the platform, which is provided interiorly with the ordinary arrangement of knife-edged fulcrumed levers B. As this arrangement is of the usual construction, it is not deemed essential to herein specifically describe the same. A verti-

cal box or case C is arranged at one end of the platform, and the main lever *b* is connected at its outer end with a vertical rod *d*, which runs through a guide-plate *f*, Fig. 1, in said case. The upper end of the rod *d* is screw-threaded and a nut *g* is turned thereon. An angle-plate *h* is secured to the back board within the case, and a bolt *i* is adjustable vertically in the top of said plate. A weighing-spring *j* connects the bolt *i* with the nut *g*.

On top of the case at the front there is an advertising-plate *k*. The case is provided in its front with a dial *m*, covered by a glazed face *p*.

D represents the index mechanism considered as a whole. This mechanism comprises two frame-plates *q r*, connected by rods *t*, the plate *q* being bolted to the back of the dial, as shown in Fig. 1. In these plates and the dial an arbor *v* is journaled bearing an index-finger *w* on its outer end. The inner end of the arbor *v* projects through the rear plate *r* and bears a loose pinion *x* thereon. A pin *y* projects longitudinally from the pinion, (see Fig. 1,) and a pin 12 projects laterally from the arbor in position to be engaged by the pin *y*. Secured to the rear plate *r* there are laterally-projecting arms 15, in which a vertically-arranged bar 16, rectangular in cross-section, is fitted to slide. The bar 16 is provided with a rack 17, which meshes with the pinion *x* on the arbor *v*. Between the plates *q r* on said arbor there is a segmental ratchet 18, and adjacent said ratchet there are two more ratchets 19 and 20, secured on said arbor, the teeth of which respectively pitch in opposite directions, as shown in Fig. 6. Each of the ratchets is provided with a broad stop-tooth 21, which register. On the upper end of the bar 16 there is a laterally-projecting plate 22, vertically adjustable on said bar. To the outer end of said plate a coiled spring 23 is attached by an end. A cord 24, wound on the arbor *v*, is connected with the lower end of said spring, whereby said arbor may be rotated. The face-plate *q* has a pin 26 in position to engage a stop-pin 27 on the arbor, limiting the movement thereof. (See Fig. 1.) Centrally in the plates *q r* a shaft 28 is journaled. On said shaft there is a loose sleeve 29. Said sleeve

bears a gear 30, meshing with a pinion 31 on the shaft 32 in the frame, said shaft bearing a gear 33, meshing with a pinion 34 on a fan-wheel shaft 35, said gears and fan forming a
 5 retarding-train for the sleeve 29. Loose on the sleeve 29 there is a pawl 36, from one end of which a rod 37 projects and bears an adjustable counter-balance 38. The pawl 36 engages the ratchet 18. The opposite end of
 10 the pawl bears a coin-pan 39. Fast on the sleeve 29 there is a pawl 40, the tooth 41 of which is in position to engage the ratchet 19. Parallel with the pawl 40 and fast on the sleeve 29, there is a pawl 42, the tooth 43 of which
 15 is in position to engage the ratchet 20. A rod 44 projects from the free end of the pawl 42 and is provided with an adjustable counter-balance 45. A pin 49 (see Figs. 1 and 3) projects laterally from the pawl 40 through the
 20 frame-plate *r* in position to be engaged by a lifting-pin 50 on the rack-bar 16. (See Fig. 3.) A lifting-arm 51 on the rod 16 projects under the counterbalance-rod 44 of the pawl 42. In the plate *k* (see Fig. 4) there is a coin-slot
 25 52, which leads to a coin-chute 53 in the case, said chute terminating over the pan 39 in position to direct the coin thereon.

On the platform-lever-rod *d* there is an adjustable angle-plate 54, to the outer end of
 30 which a plate 55 is connected by a hinge 56. The bar 16 normally rests on the plate 55. The free end of the plate 55 projects under a stop-plate 57, secured to the front of the case under the dial, as shown in Fig. 1, said stop-
 35 plate being slotted and adjustable on screws 58, as shown in Fig. 3.

In the use of my improvement, weight being applied to the platform A, the weighing-rod, as *d*, is drawn downward, thereby in the
 40 ordinary manner distending the weighing-spring *j* and carrying with it the plates 54 and 55, removing the support for the gravity-bar 16. Said bar, however, maintains its normal position until released, as hereinafter
 45 described. Such normal position of the index mechanism is shown in Fig. 6, in which a locking-pawl 36 is in engagement with its ratchet 18, locking the index-shaft *v* against rotation in one direction, the pin 27 on said
 50 shaft engaging the stop-pin 26 on the plate *q*, locking it from rotation in the opposite direction. The pawls 40 and 42 are elevated out of contact with their ratchets, the index still pointing at zero on the dial, although
 55 the weight has been applied to the scale. A coin being inserted in the chute and falling onto the pan 39 disengages the pawl 36 from its ratchet 18 and frees the arbor *v*. The gravity-rod 16 at once commences to fall and
 60 its rack 17 to rotate the arbor *v*, such movement stopping when the lower end of said bar 16 has again engaged and rested on the plate 55, previously drawn downward, as described, by the weight on the platform. This
 65 movement of the arbor carries the index-finger *w* a corresponding distance, indicating on the dial the weight sustained by the

weighing-spring *j*. As the coin falls from the pan 39 the counter-balance 38 carries the
 pawl 36 back, its tooth resting on the smooth 70 periphery of its ratchet 18, said ratchet having been rotated sufficiently far by the movement of the arbor to permit this. The rotation of the arbor has wound the cord 24 thereon and distended the spring 23. The
 75 arm 50 on the gravity-rod 16, engaging the arm 49, connected with the pawl 40, as described, normally holds said pawl and its companion pawl 42 elevated, as shown in Fig. 3. The downward movement of the
 80 gravity-bar releases these pawls, which are carried downward into engagement with their respective ratchets by the counter-balance 45. This downward movement of said ratchets being retarded by the train of gears and fan-
 85 wheel, such engagement does not take place until the arbor *v* has completed its rotation. The pawls 40 and 42 when thus in engagement with their ratchets lock the arbor against rotation in either direction, said pawls
 90 being toothed in opposite directions. This effectually prevents weight additional to the weight already on the platform from being applied and indicated on the dial. As soon as the weight is removed from the platform
 95 the spring *j*, lifting the rod *d*, carries the gravity-bar 16 upward. The pinion *x* on the arbor being loose, such upward movement has the effect only of distending the spring
 100 23 as said arbor is locked by the pawls 40 and 42. As soon as the bar 16 has been elevated a determined distance the arm 51 thereon engages the counterbalance-rod 44, elevating said rod sufficiently to free its pawl-
 105 tooth 43 from the ratchet 20. The pawl being fast to the sleeve 29, this movement also frees the pawl 40 from its ratchet. The spring 23 at once acts to rotate the arbor *v*, the pawl 36 clicking thereon until it reaches the lock-tooth 21, which it enters, locking the
 110 arbor again. The pin 12 on the arbor as it is thus rotated engages the pin *y* on the pinion *x*, continuing the rotation thereof. The arm or pin 50 on the bar 16, engaging the pin 49 on the pawl 40, continues the upward move-
 115 ment of said pawl and holds it when elevated in the position shown in readiness for weighing again when the arbor is released by the falling of the coin in the manner described. The downward movement of the gravity-bar
 120 rotates the arbor by means of the pinion, the pin *v* of which engages the pin 12 on said arbor. The loose pinion permits the lost motion required in the upward movement of the bar.
 125

Having thus explained my invention, what I claim is—

1. In an index mechanism for coin-actuated weighing-machines, an arbor bearing the index, a gravity rack-bar meshing with a pin-
 130 ion loose to move in one direction on said arbor, a spring-tensioned cord on the arbor connecting with said bar, a ratchet on the arbor, a coin-released locking-pawl therefor, two op-

posite pitch-ratchets on said arbor, and gravity locking-pawls therefor adapted to be released by the ascent of said bar.

2. The spring-scale mechanism, in combination with the arbor-segment, ratchet thereon, and locking-pawl, the gravity rack-bar supported by said mechanism and fitted to rotate the arbor in one direction when released, and the spring-tensioned cord connecting the arbor and bar for reciprocating said arbor as the bar ascends.

3. The spring-scale mechanism, in combination with an arm on the connecting-bar thereof, the index-arbor provided with a ratchet 18, the coin-released pawl engaging said ratchet, the gravity-rack normally supported on said arm, the pinion loose on said arbor, and the spring-tensioned cord connecting said arbor and bar, whereby the arbor may be rotated, substantially as described.

4. The platform and spring-scale mechanism, in combination with the index-arbor, the gravity rack-bar supported by said mechanism, the loose pinion on said arbor, mechanism for locking said pinion against rotation in one direction, the segment-ratchet, the coin-released locking-pawl engaging said ratchet, and a spring-actuated connection between said bar and pinion, whereby the pinion may be rotated as the bar ascends.

5. The platform and spring-scale mechanism, in combination with the index-arbor, the loose pinion thereon, the gravity rack-bar meshing with said pinion and supported by

the scale mechanism, the segment-ratchet on said arbor, the coin-released pawl therefor, the ratchets 19 and 20 on said arbor, the counterbalanced pawls therefor, a retarding mechanism for said pawls, mechanism for tripping said pawls as the bar ascends, and a spring-actuated connection between the bar and arbor, substantially as and for the purpose set forth.

6. The platform and spring-scale mechanism, in combination with the index-arbor bearing ratchets 18, 19, and 20, the coin-released pawl engaging the ratchet 18, the lock-pawls 40 and 42 for engaging the companion ratchets, a retarding mechanism for said pawls, the gravity-rack, the loose pinion on said arbor, a spring-actuated connection between the rack and arbor for reciprocating said arbor, and mechanism actuated by the rack for tripping the pawls 40 and 42, substantially as described.

7. The index-arbor, ratchet 18 thereon, and coin-released pawl, in combination with the opposite-toothed ratchets on said arbor, the counterbalanced pawls therefor, retarding mechanism for said pawls, the loose pinion and locking mechanism, the gravity-rack, the spring connection between said rack and arbor, and an arm on said rack for tripping and supporting said locking-pawls.

GEORGE G. MERRY.

Witnesses:

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O. M. SHAW.