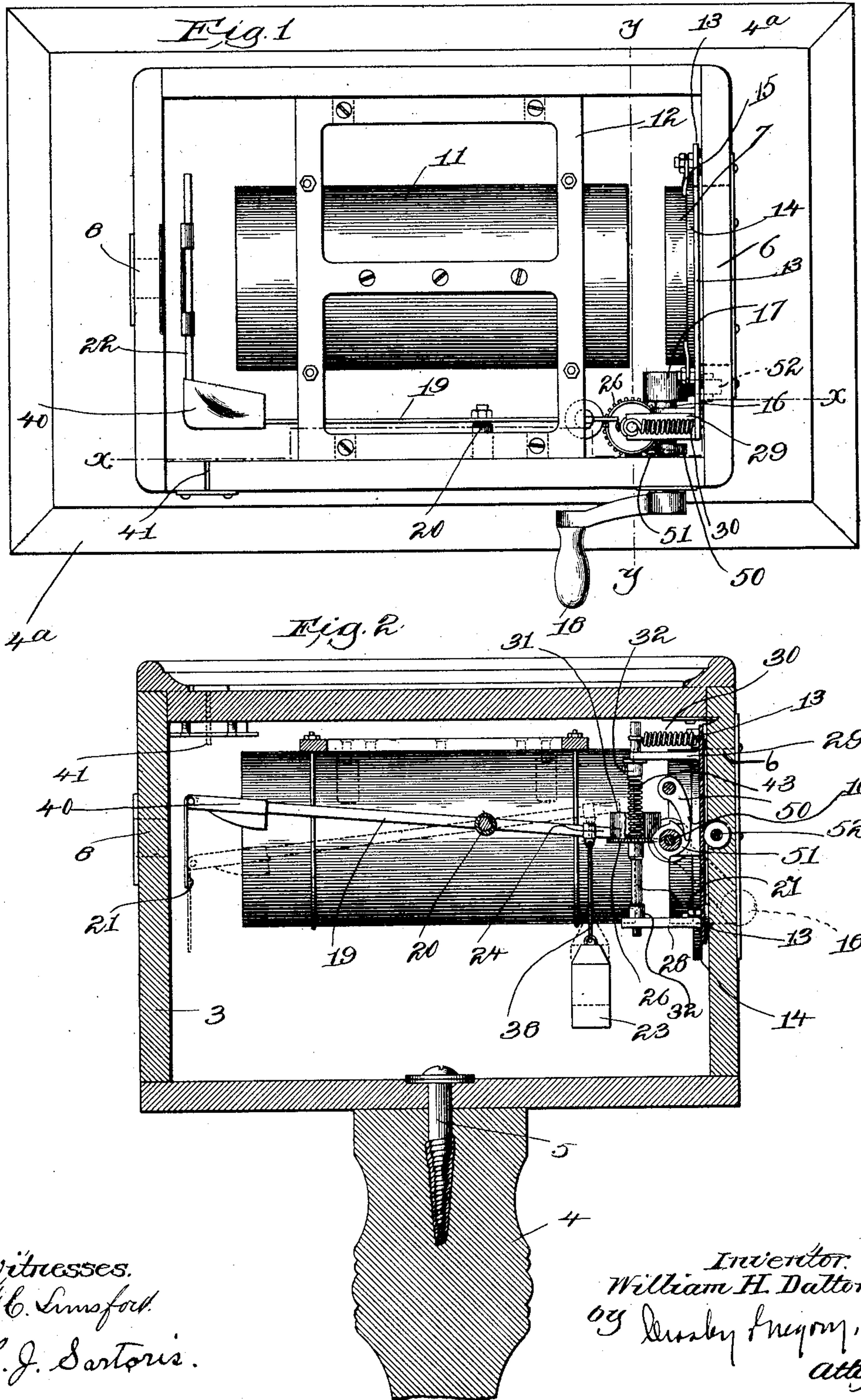


W. H. DALTON.
COIN CONTROLLED KALEIDOSCOPE.

APPLICATION FILED JUNE 9, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses.
W. C. Simsford.
H. J. Sartoris.

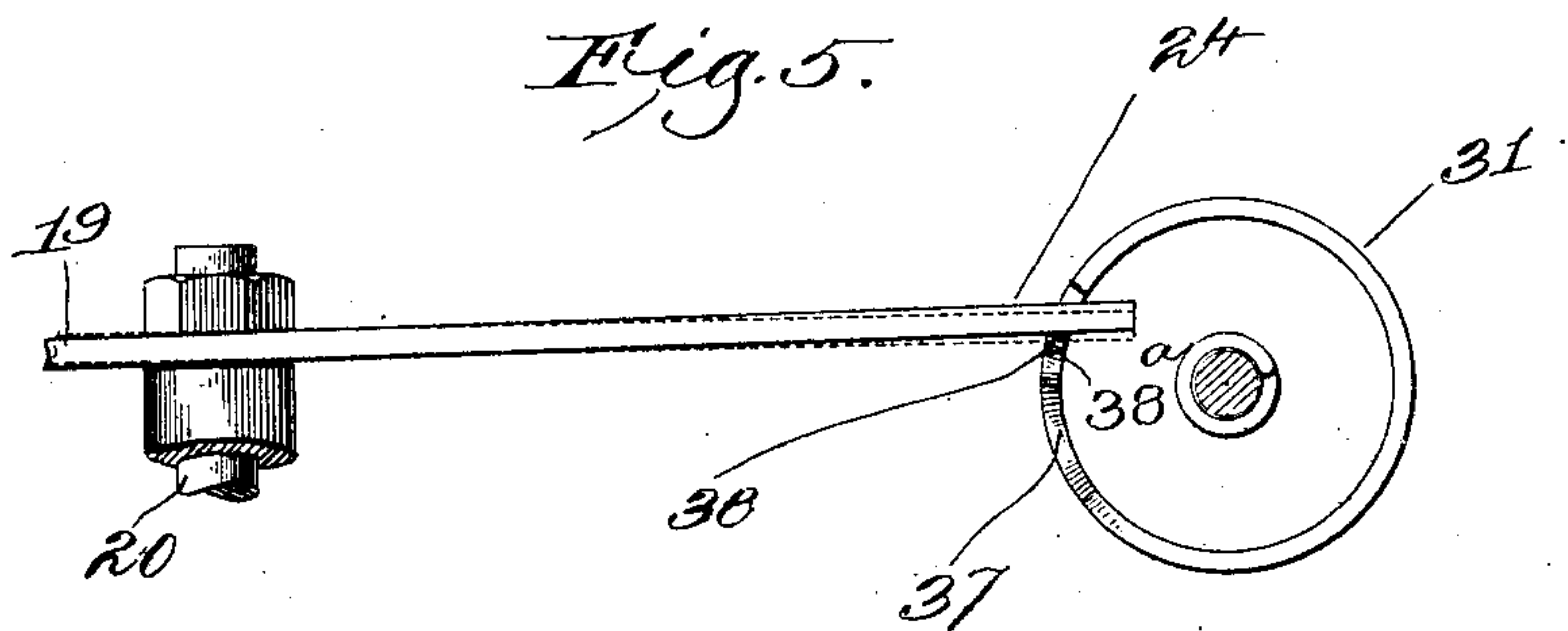
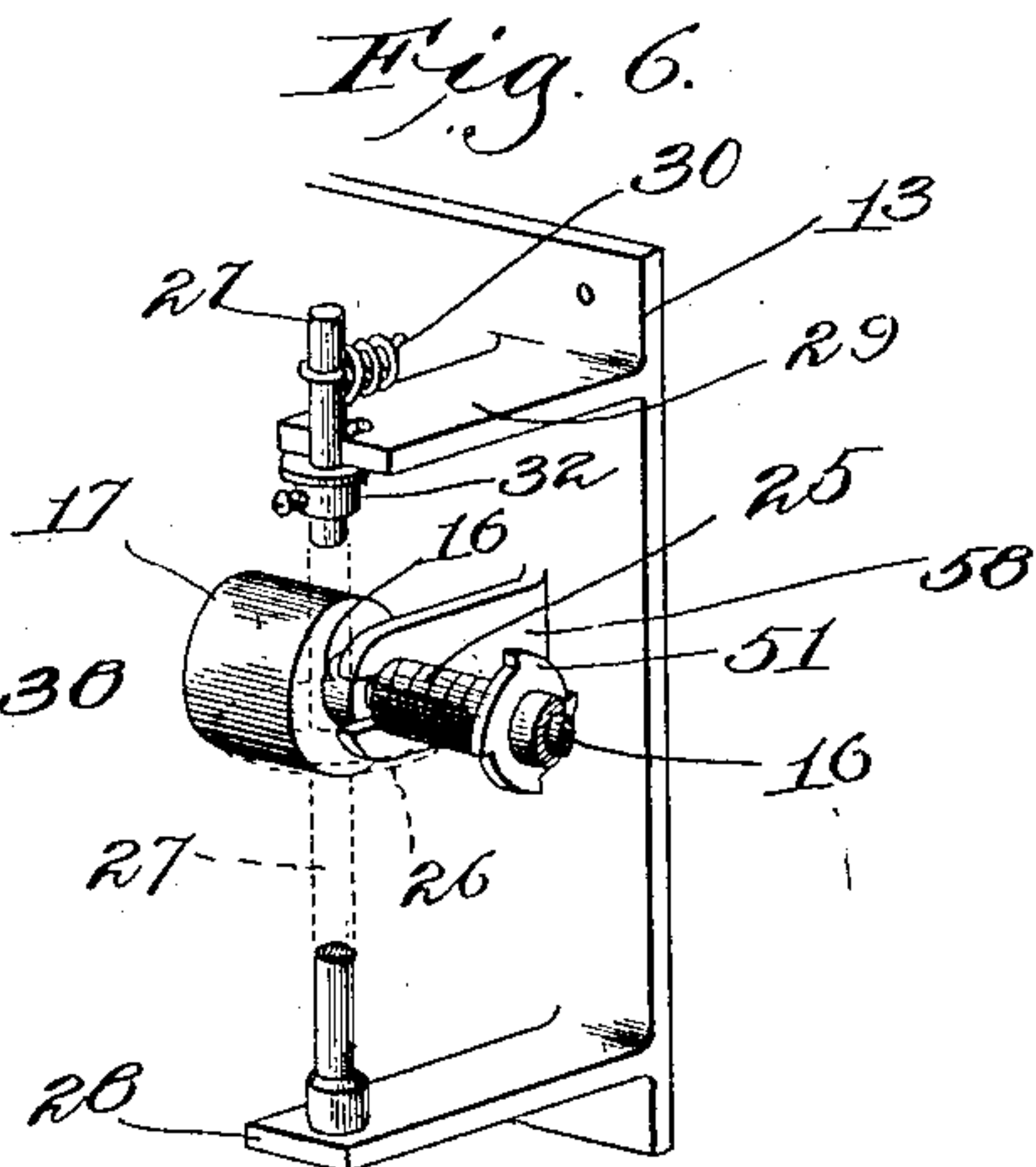
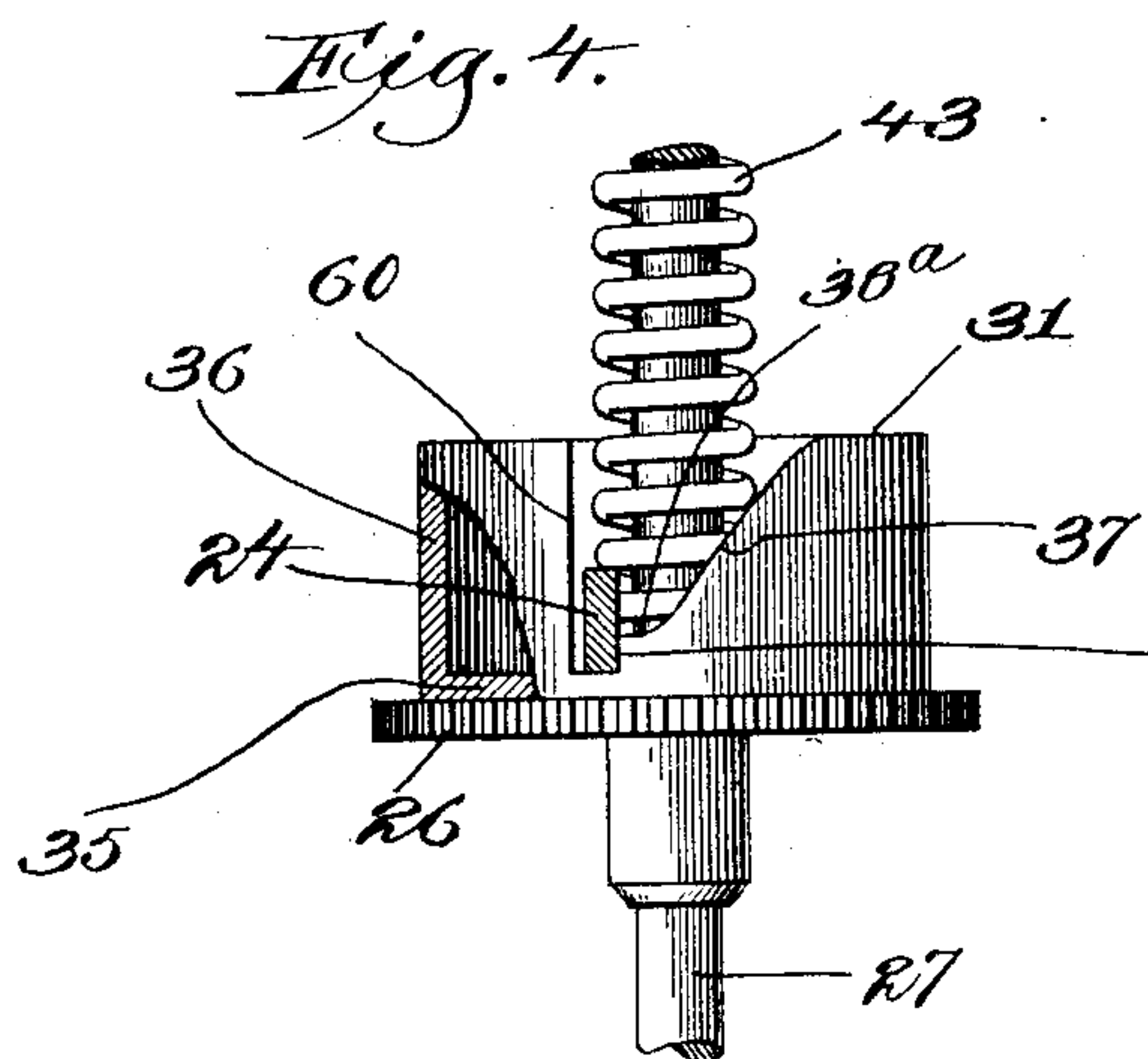
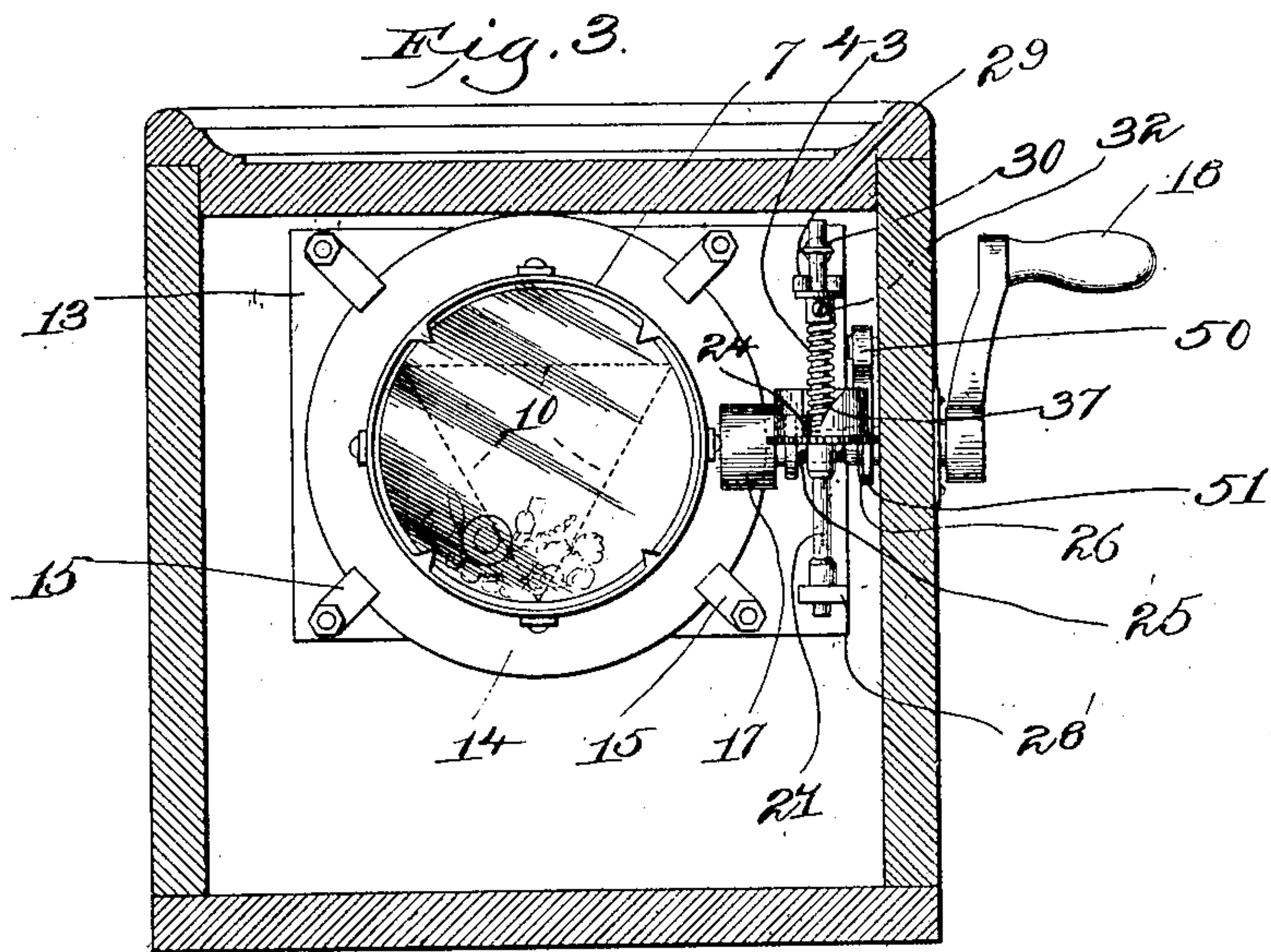
Inventor.
William H. Dalton,
by Leroy Frey,
attys.

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2 SHEETS—SHEET 2.



Witnesses.
W. C. Lunsford.
H. J. Sartoris.

Inventor.
William H. Dalton.
By Wesley Frey
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM H. DALTON, OF LYNN, MASSACHUSETTS.

COIN-CONTROLLED KALEIDOSCOPE.

SPECIFICATION forming part of Letters Patent No. 747,383, dated December 22, 1903.

Application filed June 9, 1902. Serial No. 110,705. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DALTON, a citizen of the United States, residing at Lynn, county of Essex, State of Massachusetts, have
5 invented an Improvement in Coin-Controlled Kaleidoscopes, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

10 This invention relates to coin-controlled mechanism, and especially to a coin-controlled kaleidoscope.

The kaleidoscope feature of the device comprises a rotatable object-chamber in which
15 the differently colored and shaped objects commonly used in kaleidoscopes are placed and the usual mirrors arranged to reflect the objects in the object-chamber, and thereby form differently-shaped designs as the object-chamber is revolved.

20 My invention relates to the coin-controlled apparatus as used in connection with a kaleidoscope whereby when a penny is deposited in the slot the rotating mechanism for the
25 object-chamber is unlocked and a shutter or screen is removed from the observation-opening, the parts remaining in such operative position until the object-chamber has been rotated to a predetermined extent, when the
30 device becomes automatically locked and the screen replaced in front of the observation-opening.

The particular features of my invention will be more fully hereinafter described, and
35 pointed out in the claims.

In the drawings, Figure 1 is a top plan view of my apparatus with the cover of the casing removed to better show the operative parts. Fig. 2 is a section on the line *xx*, Fig. 1, looking
40 toward the top of the sheet. Fig. 3 is a section on the line *yy*, Fig. 1, looking toward the right. Figs. 4, 5, and 6 are details hereinafter described.

The operative parts of the device are in-
45 closed within a suitable casing 3, which is preferably supported upon any suitable or usual standard 4, rising from a base 4^a, so as to be capable of turning thereon. Any suitable means may be employed for thus securing
50 the casing to the pedestal or standard, and for convenience I have herein shown a screw

5, passing through the bottom of the casing and into the top of the pedestal.

The casing 3 has at one end an opening 6, in register with which is mounted a circu- 55 lar object-chamber 7, having glass sides, the said object-chamber containing the objects of different colors or shades, as usual in kaleidoscopes. The opposite end of the casing is provided with an observation-opening 8, 60 (shown in dotted lines, Figs. 1 and 2,) through which the person using the device looks, and between the observation-opening and the object-chamber and extending parallel to the line of vision are the usual mirrors 10, which 65 by their reflection make the varying designs as the object-chamber is rotated and the objects therein moved. The mirrors may be supported in any suitable way, and I have herein illustrated a supporting member 11, 70 which is shown as tubular and on the interior of which the mirrors are secured, the said supporting member being secured to a suitable spider or framework 12, which in turn is carried by the casing. It will now be 75 observed that should a person look through the observation-opening and should the object-chamber be revolved at the same time the mirrors will produce the desired varying design. The purpose in pivotally mounting 80 the casing 3 on the standard 4 is to permit the casing to be turned in any desired direction to direct the object-chamber toward the light.

While it is entirely within the scope of my 85 invention to support the object-chamber in any suitable way, I have chosen herein to provide a suitable supporting-plate 13, which is secured to the end of the casing 3 and which has an aperture therein in which the 90 object-chamber is received, the said object-chamber preferably being provided with the driving-flange 14 and being held in place in the aperture in the plate 13 by suitable buttons or clamps 15, which are secured to the 95 plate 13 and overlies the said flange.

Journaled in the side of the casing is a driving-shaft 16, which may be driven in any suitable way and which has at one end the friction driving-roll 17 bearing against the 100 driving-flange 14. I will preferably either make the surface of the flange or the surface

of the driving-roll, or both, of some suitable frictional material, such as rubber, to prevent any slipping between the parts. If the device is to be operated by hand, I will preferably attach a suitable crank 18 to the extended end of the shaft 16.

I have herein provided a shutter or screen which normally obscures the observation-opening 8, but which may be thrown into abnormal or open position by the insertion of a coin or other toll and which when thrown into its abnormal position will remain thus while the object-chamber is revolved through a definite distance.

19 designates a tripping-lever which is pivoted to any suitable fixed support 20 and which carries at one end a shutter or screen 21. Where the lever is pivoted to the side of the casing, as herein shown, the end of the lever will be bent, as at 22, and to such bent end the screen or shutter 21 will be secured, said screen in its normal position standing in front of and obscuring the opening 8, as seen in Fig. 2. The lever is counterbalanced by means of a weight 23, the said weight being just sufficient to hold the lever in the position shown in Fig. 2, but allowing said lever to be turned about its fulcrum by the addition of a very small weight to the shutter end thereon.

The shaft 16 carries a suitable worm 25, which meshes with a worm-gear 26, fast upon a vertical shaft 27, which shaft is supported at its lower end in a suitable bearing in a bracket 28. The upper end of the shaft is received by a slot in an upper bearing member 29, and a suitable spring 30, fixed at one end to the casing and having an eye at its other end which encircles the said shaft, serves to yieldingly hold the said shaft in operative position, with its worm-gear in engagement with the worm. Suitable collars 32 upon the shaft serve to hold the same against longitudinal movement. A controlling device 31, which is loosely mounted upon the shaft, rests upon the upper face of the worm-gear 26 and serves to control the length of time that the shutter is held away from the observation-opening. The said member 31 is herein shown as having a frictional base-piece 35, which rests upon the worm-gear 26 and the annular flange 36. The flange 36 is of the shape shown in Fig. 4, it being cut to present the inclined cam portion 37, the locking-shoulder 38, and the vertical shoulder 60.

When the lever 19 is in the position shown in Fig. 2, the end 24 thereof is in engagement with the locking-shoulder 38, and, as stated, it is held in such a position by reason of the fact that the said end of the lever is slightly overweighted. The lever 19 will either be of some elastic material, so as to be capable of yielding laterally, or it will be loosely pivoted on the support 20, so as to have a slight lateral movement. When the controller or controlling member is in its normal position or

that position in which it is left at the finish of the preceding operation, the shoulder 38 will be forced against the end 24 of the lever 19 with sufficient pressure to deflect the latter laterally slightly, as seen in full lines, Fig. 5. The shorter end of the lever is provided with a suitable coin-receiving platform 40, which is so positioned as to receive a coin or other toll which may be deposited through the coin-slot 41, which is formed in the side of the casing. The member 19 is so delicately balanced that the weight of the coin or other toll as it is received upon the platform 40 from the coin-chute will depress the said end of the lever and raise the end 24 thereof above the locking-shoulder 38, at which time the elasticity of the lever will cause the end 24 thereof to spring laterally into the dotted-line position, Fig. 5, and over the flattened portion 38^a. As the coin or toll rolls off from the platform, the counterweight 23 depresses the end 24 and brings the same against the flattened bearing-surface 38^a, thus unlocking the controller. The platform 40 is so constructed that the coin does not remain on it, but after being dropped on it will immediately roll off. To unlock the device, it is only necessary that the lever be swung into the dotted-line position, Fig. 2, so as to carry the end 24 of the lever above the locking-shoulder 38. It is not necessary that the coin should remain on the platform to hold the lever in this position, because the elasticity of the lever brings it into the dotted-line position, Fig. 5, and over the bearing-surface 38^a. If now the driving-shaft 16 be operated, the object-chamber will be rotated, as above described, and the worm-gear 26 will also be operated through the worm 25. The friction between the base 35 of the controlling member 31 and the said worm-gear, which is caused by the action of the spring 43, causes the controlling member to rotate with the shaft and carries the inclined portion 37 underneath the end of the lever, thus swinging the lever from the full-line position, Fig. 2, to the dotted-line position and fully uncovering the observation-opening. The observer may now obtain a full and complete view of the varying designs produced by the rotation of the object-chamber, and such view will continue unobstructed until the controller has made one complete revolution, when the end 24 of the locking-lever will drop over the shoulder 60 and again engage the locking-shoulder 38, thus bringing the lever to the full-line position, Fig. 2, and obscuring the observation-opening and also locking the controller. If now the operator continues to turn the driving-shaft, the object-chamber will be rotated, yet, since the end of the locking-lever engages the locking-shoulder 38, the controller is prevented from rotation, and the observation-opening remains obscured and will remain obscured until the locking-lever has again been released by the insertion of another toll. This continued operation of the driv-

ing-shaft and the consequent rotation of the shaft 27 after the controller is locked is permitted by the slipping of the frictional driving engagement between the controller and the worm-gear 26. The friction between the controller and the gear 26 is, as stated above, sufficient to drive the controller when the same has been unlocked, and when one complete rotation thereof has occurred and it is again locked as above described such friction is sufficient to cause the lever 19 to flex and assume the full-line position, Fig. 5. The lever is thus put into its normal position, and the machine is ready for another operation by the insertion of another coin. It will thus be observed that the driving member for the object-chamber is not of itself locked, but a person is prevented from obtaining any benefit from the rotation of the chamber without the insertion of a coin by providing means whereby the observation-opening is obscured until the coin has been inserted. I have thus accomplished the objects designed by any coin-controlled apparatus without employing a rigid locking connection for the driving parts. This I consider quite an advantage, because where a rigid locking means is employed a person sometimes by wrenching or putting undue strain upon the operating parts will succeed in breaking or otherwise injuring the device. On the other hand, with my improved structure the free operation of the driving-shaft is permitted at all times, but the view is obscured until a suitable coin has been inserted to release a frictional locking device. A suitable pawl 50, engaging a ratchet 51, fast to the driving-shaft, prevents backward rotation of the shaft.

The driving-shaft 16 will preferably be mounted for movement toward and from the driving-disk 14 by supporting the said shaft in a slotted bearing 58. The spring 30 performs a double function: First, it serves to hold the worm-gear 26 in engagement with the worm 25, and, second, it operates to draw the shaft 16 toward the flange 14, and thus maintain a frictional engagement between the driving-roll 17 and said flange. I will preferably support a suitable bearing-roll 52 in the casing, against which the outside of the flange 14 engages.

While I have herein chosen to illustrate my invention as applied to a kaleidoscope in which the object-chamber rotates relative to the mirrors, yet it should be obvious that it is within the scope of my invention to apply the device herein illustrated to a kaleidoscope wherein the mirrors revolve instead of the

object-chamber, and I will consider such a construction as coming within my invention. I would also state that while I have herein shown my improved coin-controlled apparatus as used in connection with a kaleidoscope, yet I do not wish to limit it to such use, as it will be obvious that the coin-controlled features herein described could be used in connection with other apparatus.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, a casing having an observation-opening, a device to be operated inside of the casing, a coin-controlled pivoted lever, a shutter operated by the movement of said lever, a cam-like controller having a shoulder to be engaged by the lever, and means whereby the movement of the device to be operated tends to move the controller and thus flexes the lever, the construction being such that when the lever is rocked by means of a coin it is disengaged from the shoulder and moved laterally out of line therewith.

2. In a coin-controlled apparatus, a casing having an observation-opening, a plurality of movable objects visible through said opening, means to give the objects their movement, a pivoted locking-lever carrying a shutter which normally obscures the opening, a controller having a locking-shoulder engaged by said lever, and a yielding driving connection for said controller which tends to crowd the locking-shoulder against the lever with sufficient force to flex the latter whereby when said lever is lifted out of engagement with the locking-shoulder by the action of a coin, the elasticity of said lever causes it to be carried out of the plane of said shoulder.

3. In an apparatus of the class described, a device to be operated, a controller therefor having a locking-shoulder, a locking-lever normally engaging said shoulder, and means tending normally to maintain said shoulder against the lever with sufficient force to flex the latter, whereby when said lever is lifted out of engagement with the shoulder by the operation of a coin, the elasticity of the lever causes it to move laterally with reference to the shoulder.

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

WILLIAM H. DALTON.

Witnesses:

GEO. W. GREGORY,
MARGARET A. DUNN.