

No. 652,713.

Patented June 26, 1900.

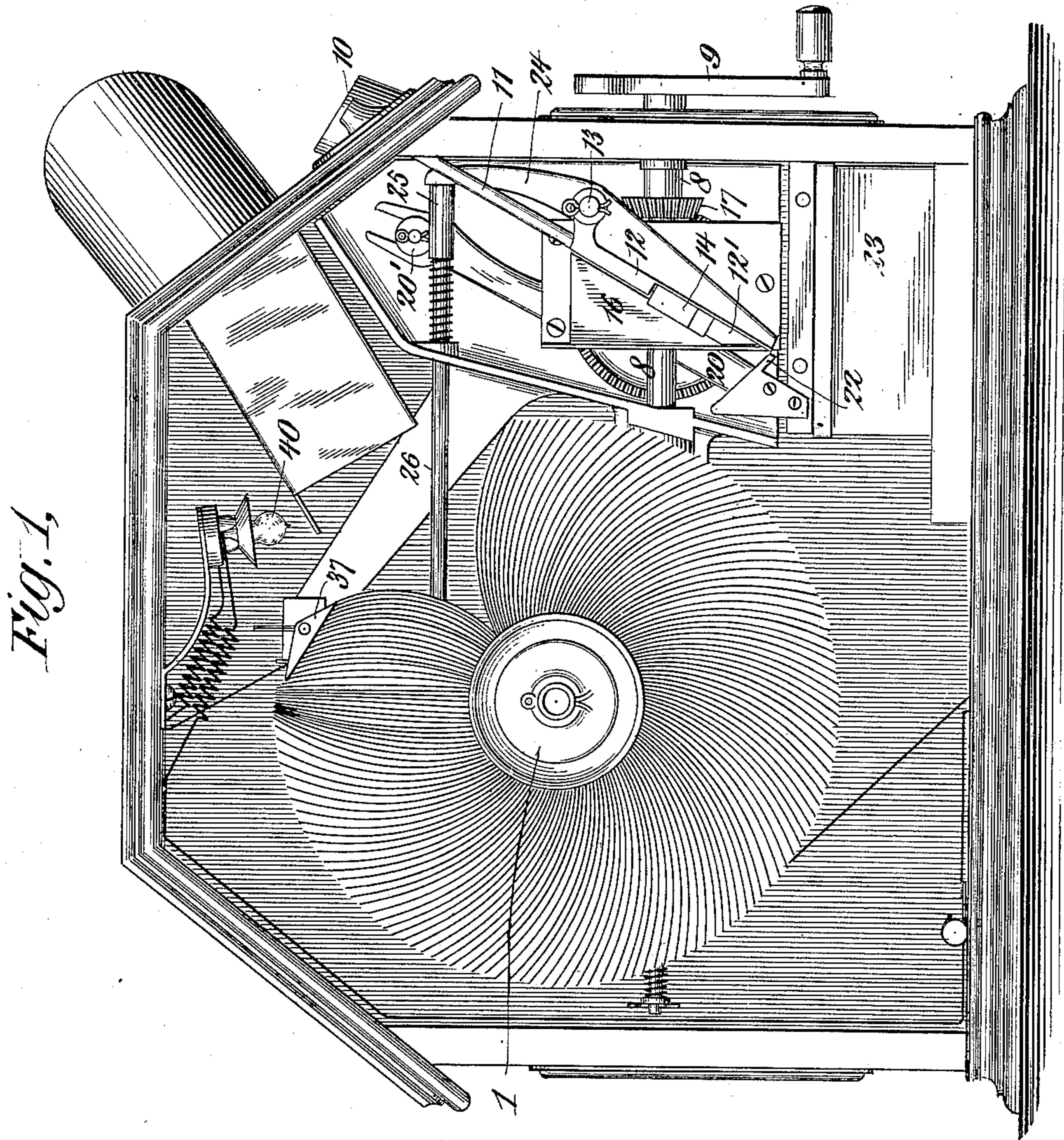
H. CASLER.

COIN CONTROLLED APPARATUS.

(Application filed Feb. 2, 1898.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES:

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ATTORNEYS

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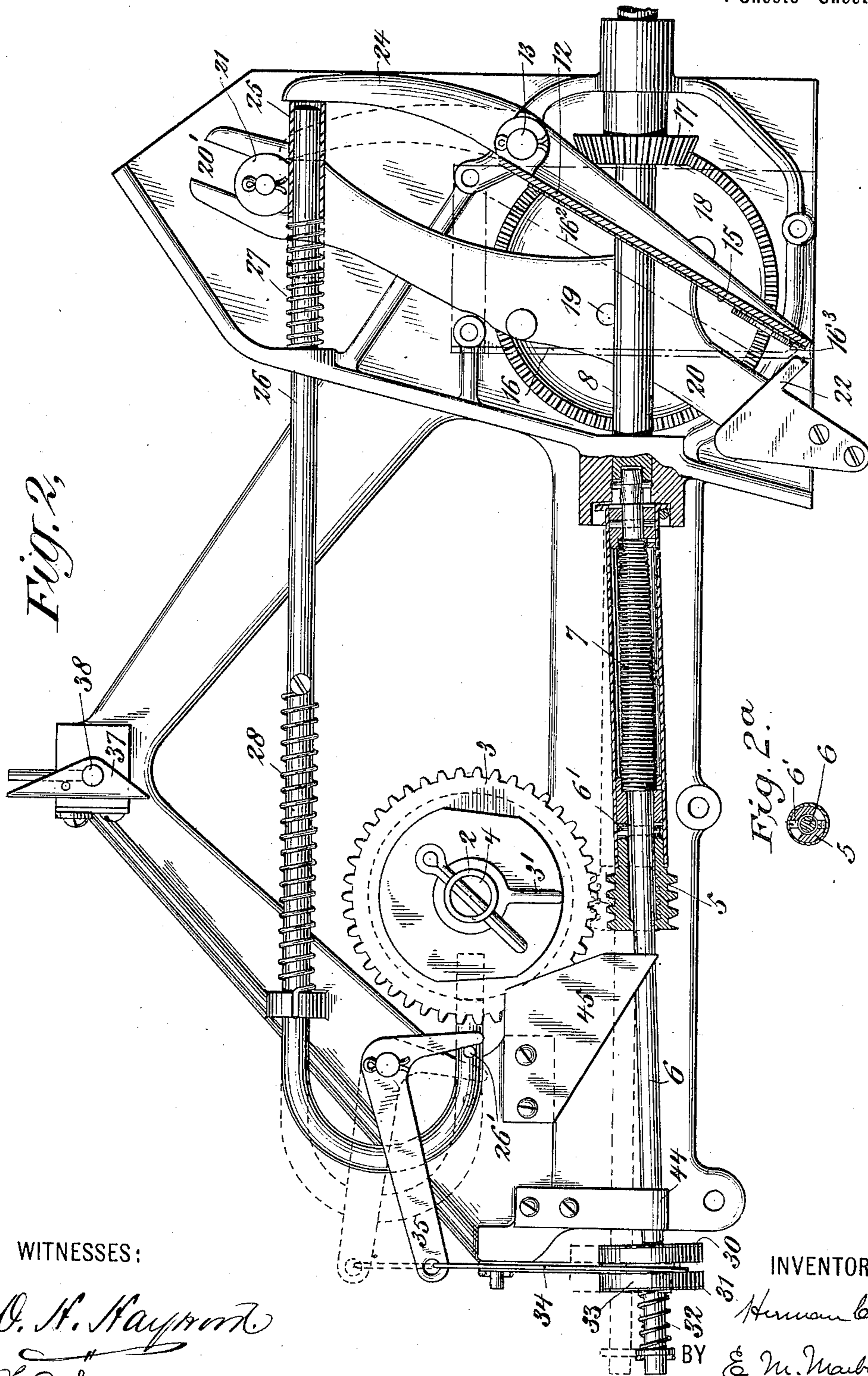
H. CASLER.

COIN CONTROLLED APPARATUS.

(Application filed Feb. 2, 1898.)

(No Model.)

4 Sheets—Sheet 2.



WITNESSES:

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No. 652,713.

Patented June 26, 1900.

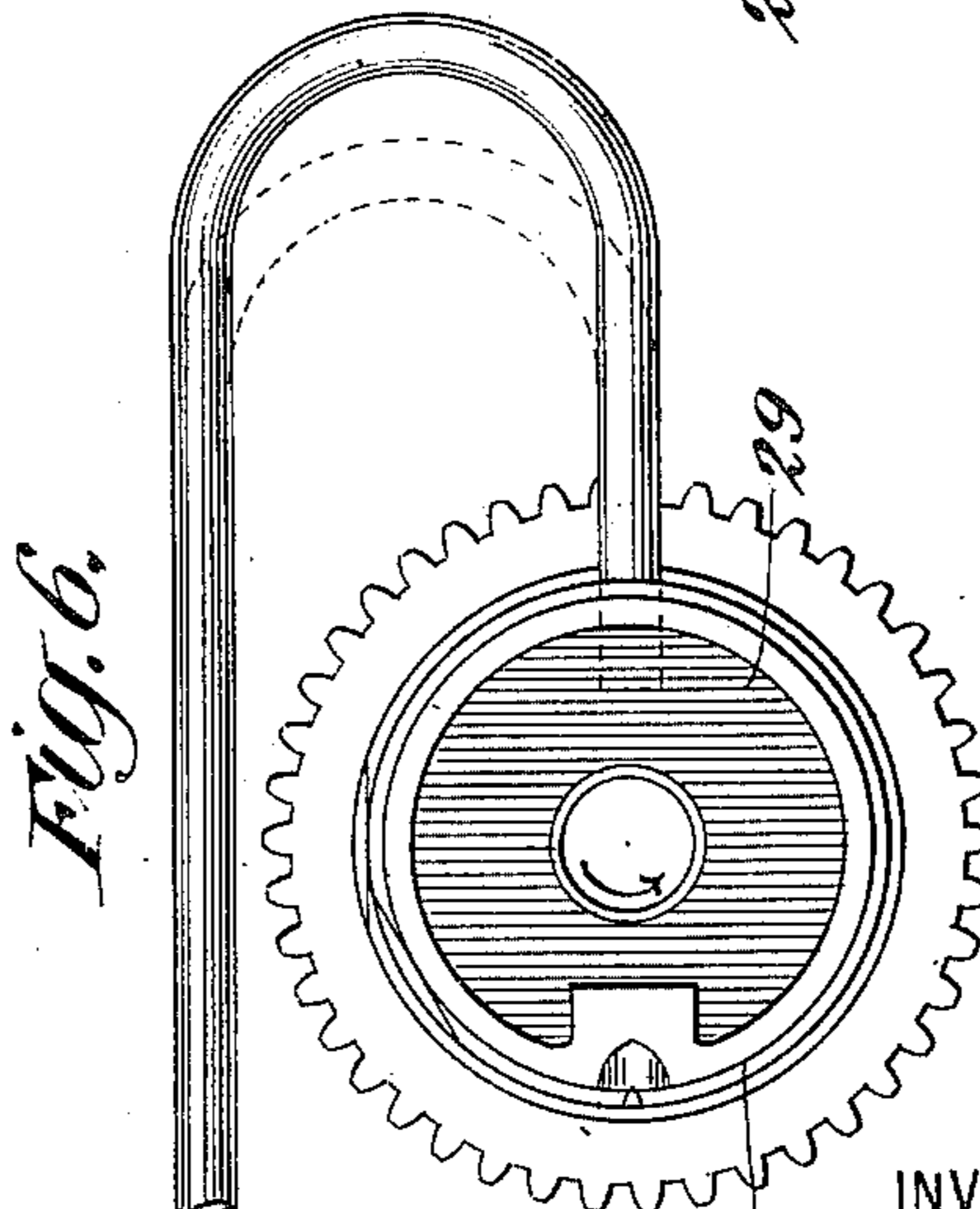
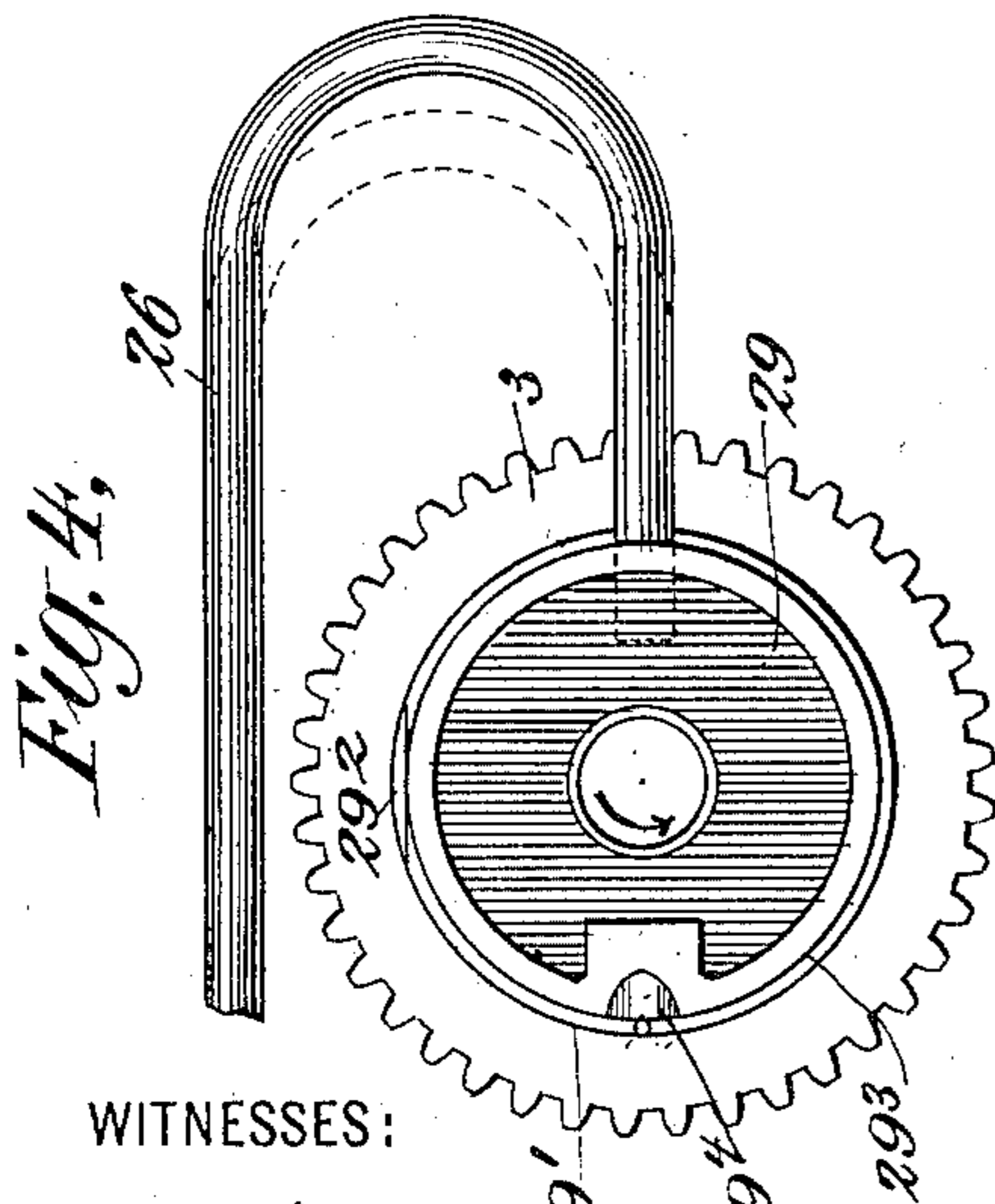
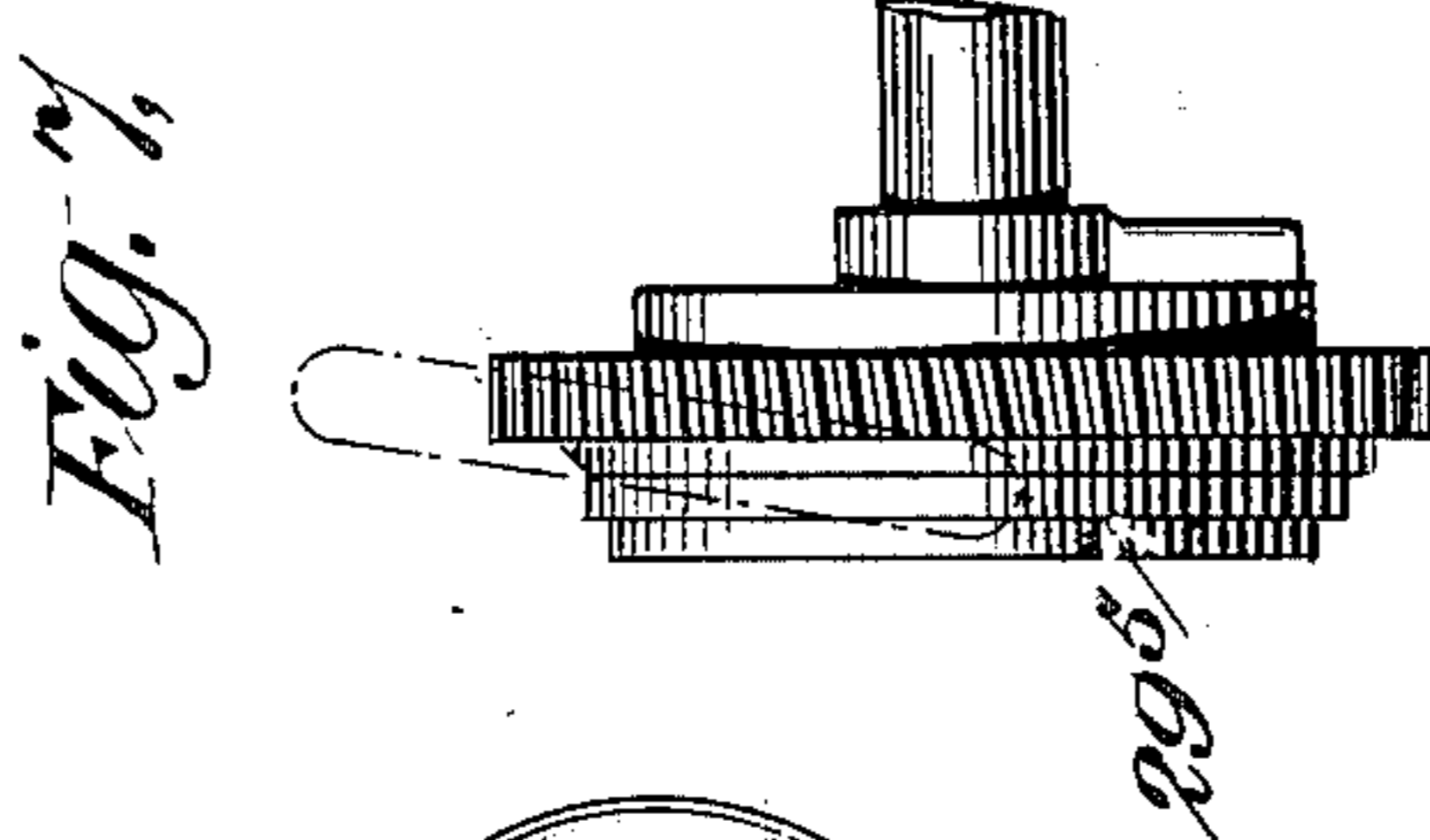
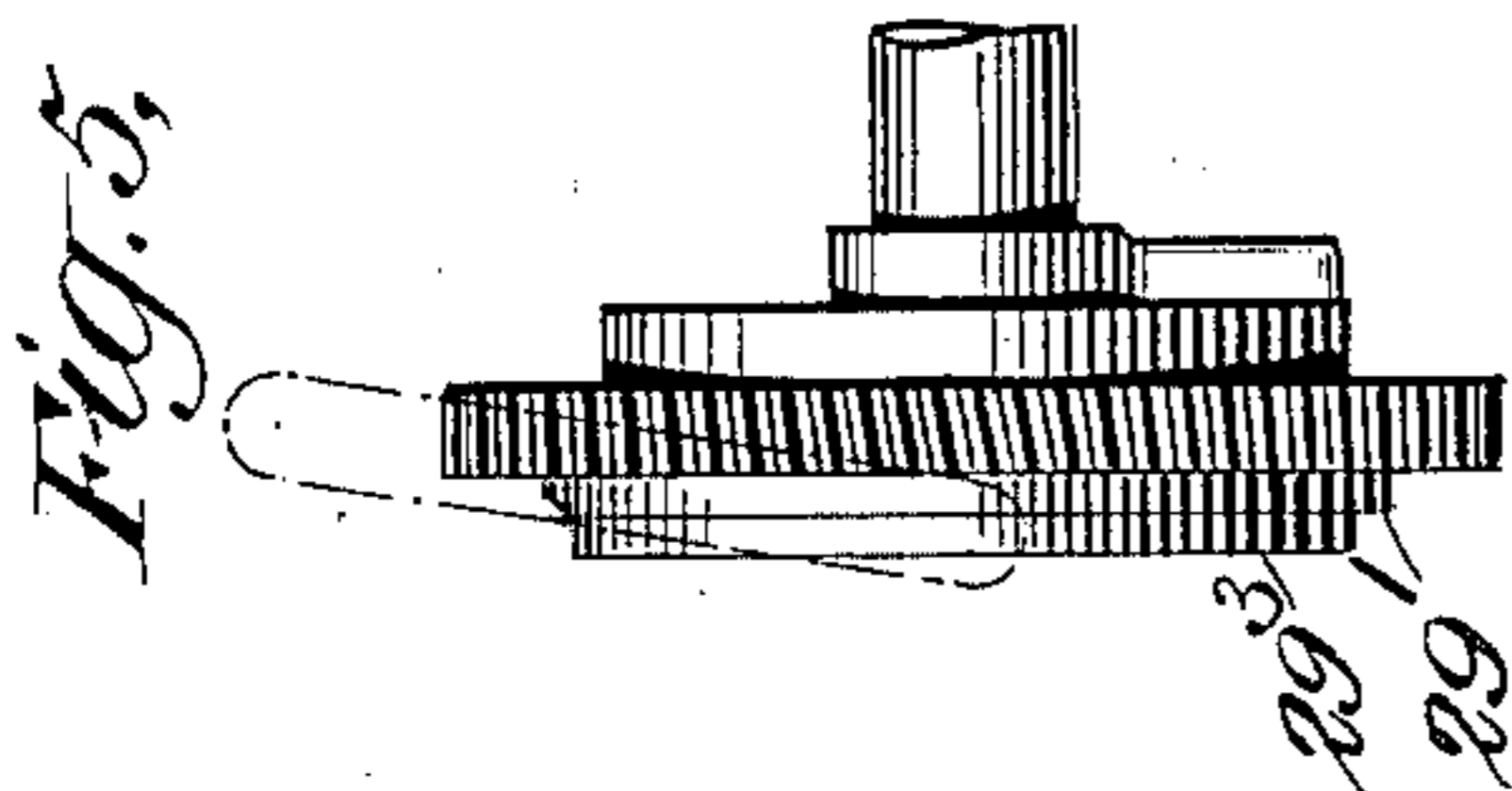
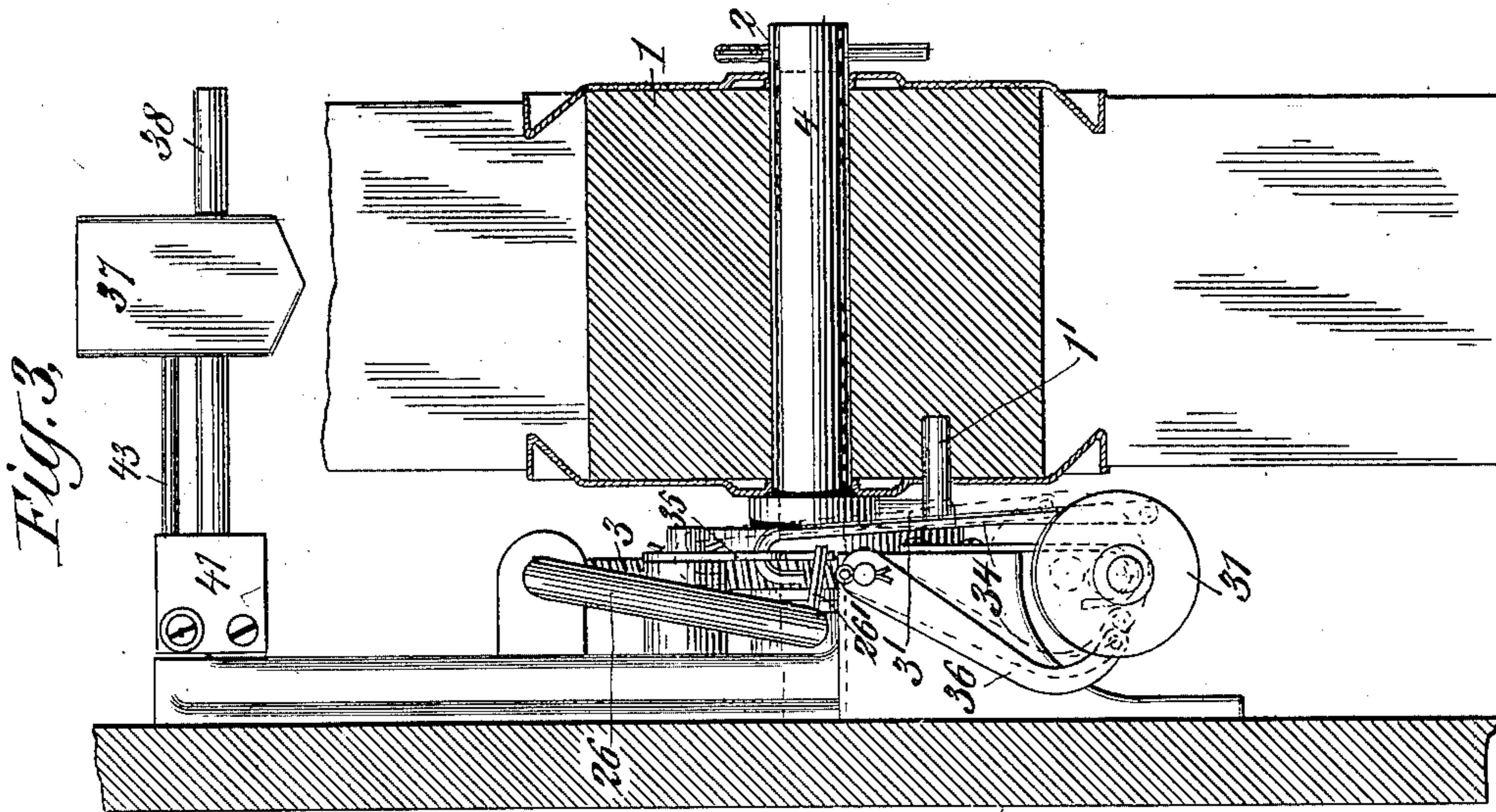
H. CASLER.

COIN CONTROLLED APPARATUS.

(Application filed Feb. 2, 1898.)

(No Model.)

4 Sheets—Sheet 3.



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No. 652,713.

Patented June 26, 1900.

H. CASLER.  
COIN CONTROLLED APPARATUS.

(Application filed Feb. 2, 1898.)

(No Model.)

4 Sheets—Sheet 4.

Fig. 10,

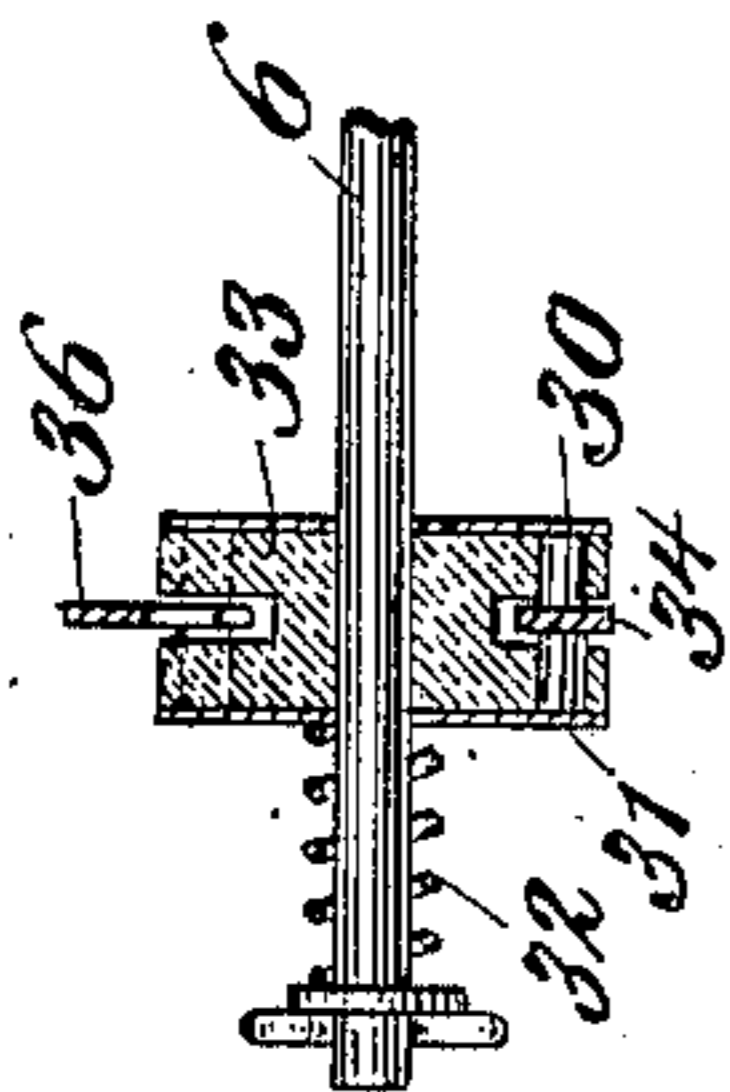


Fig. 9,

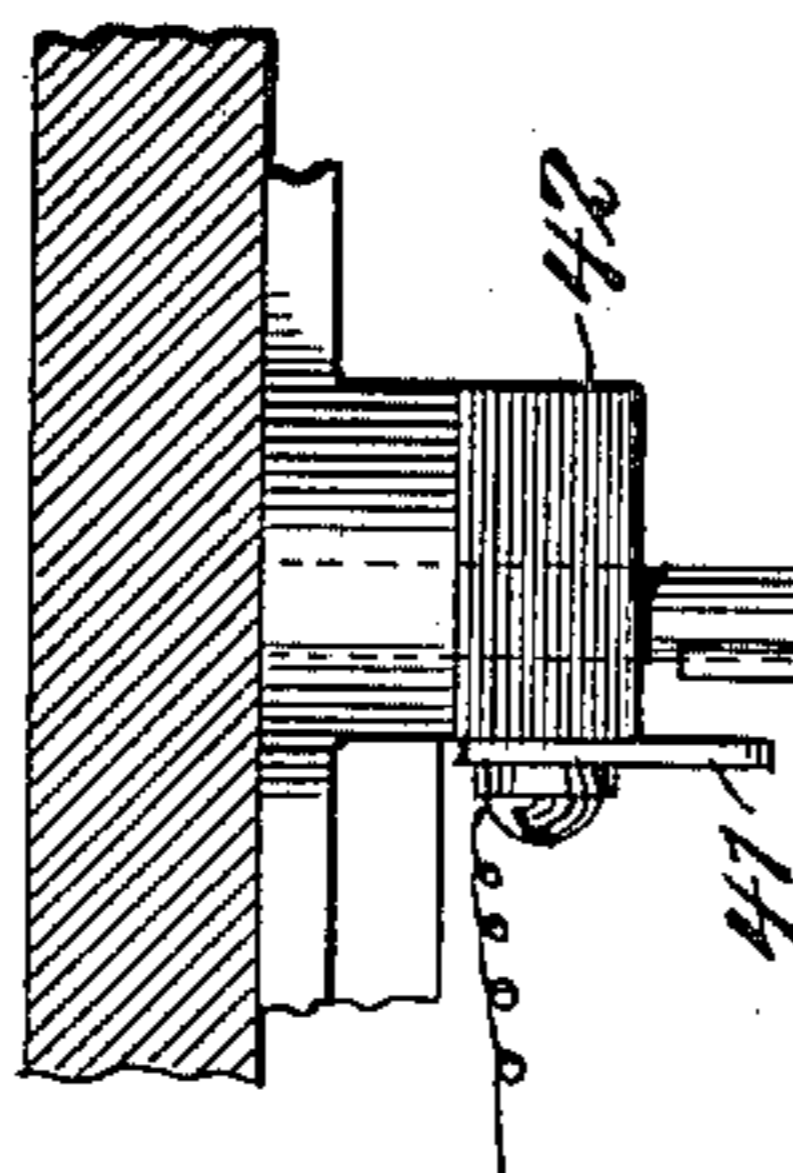


Fig. 12,

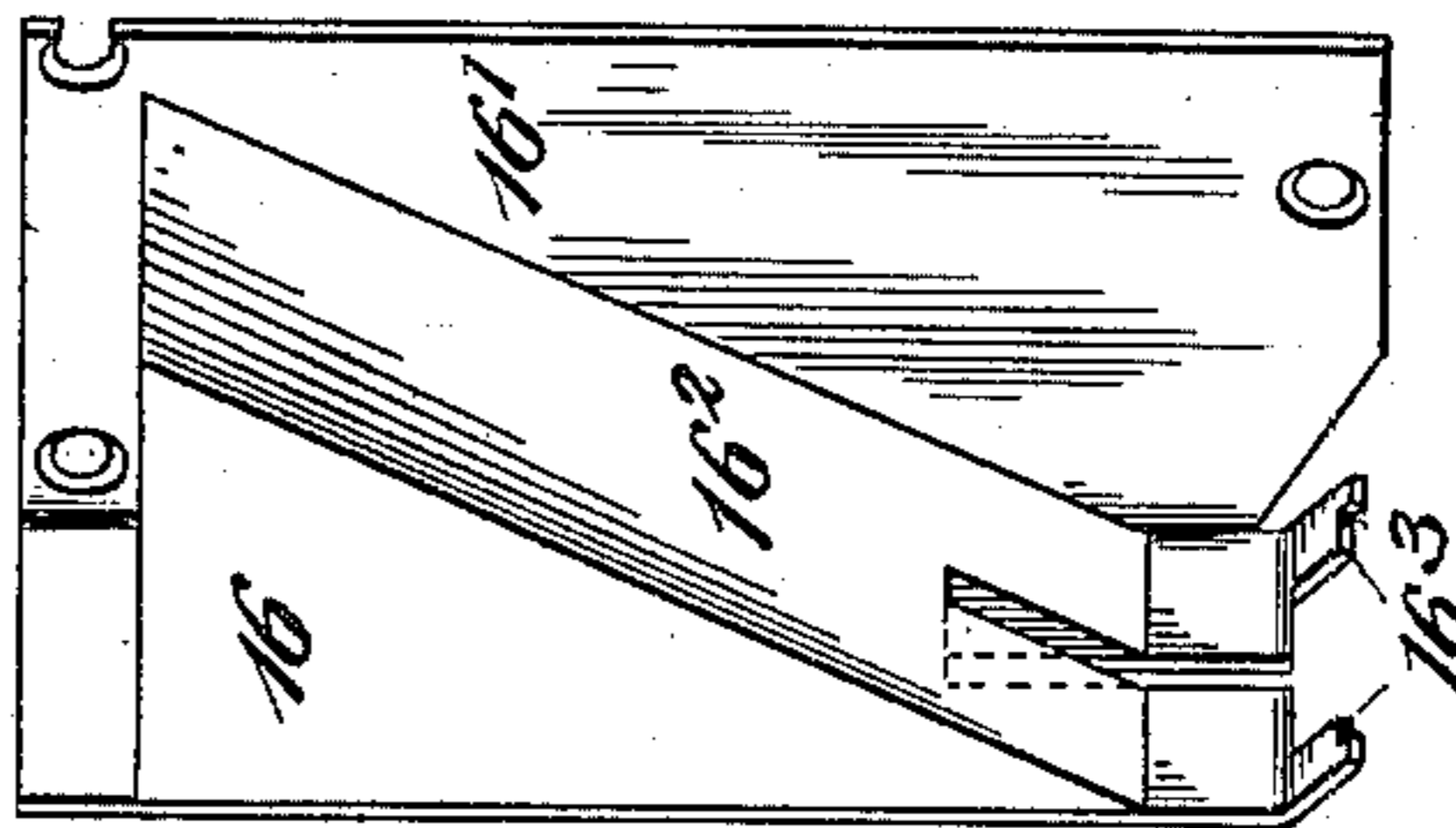


Fig. 11,

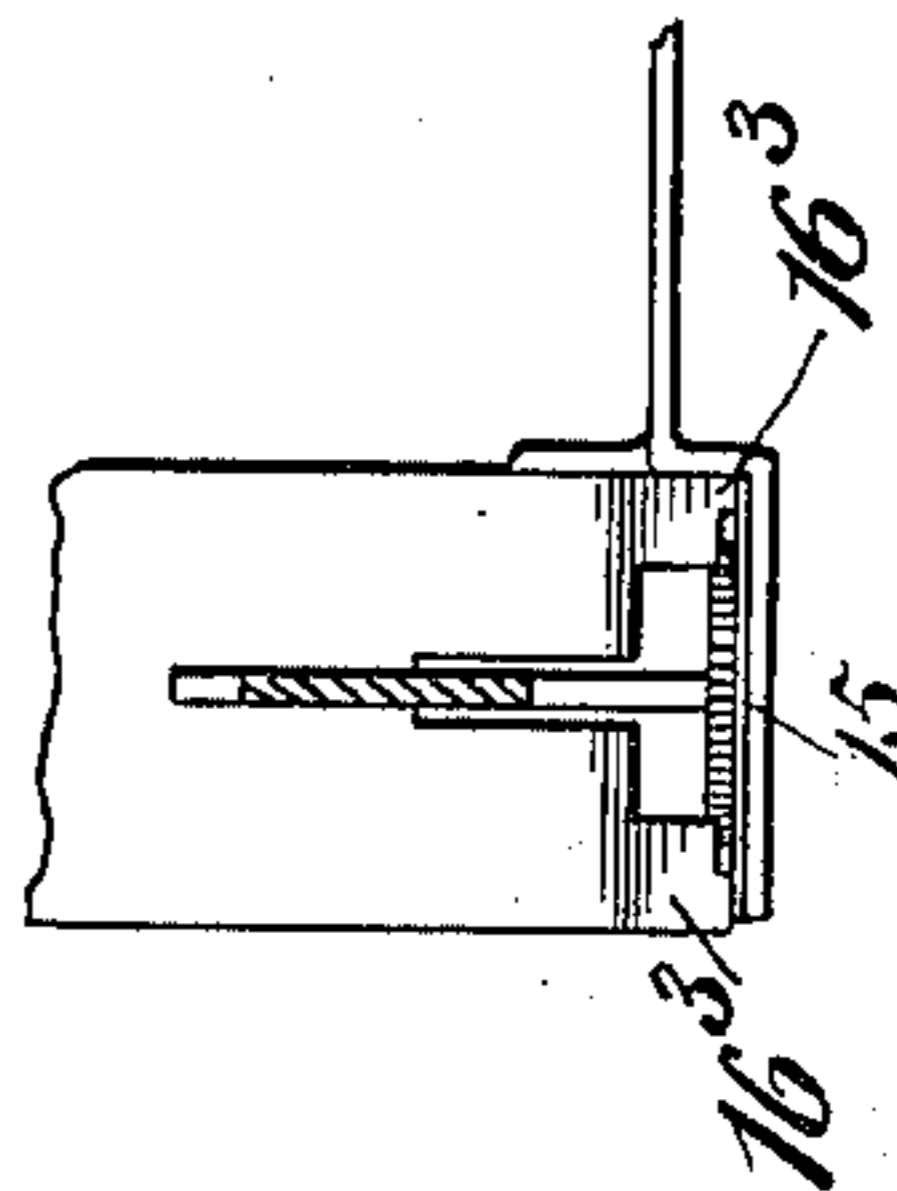
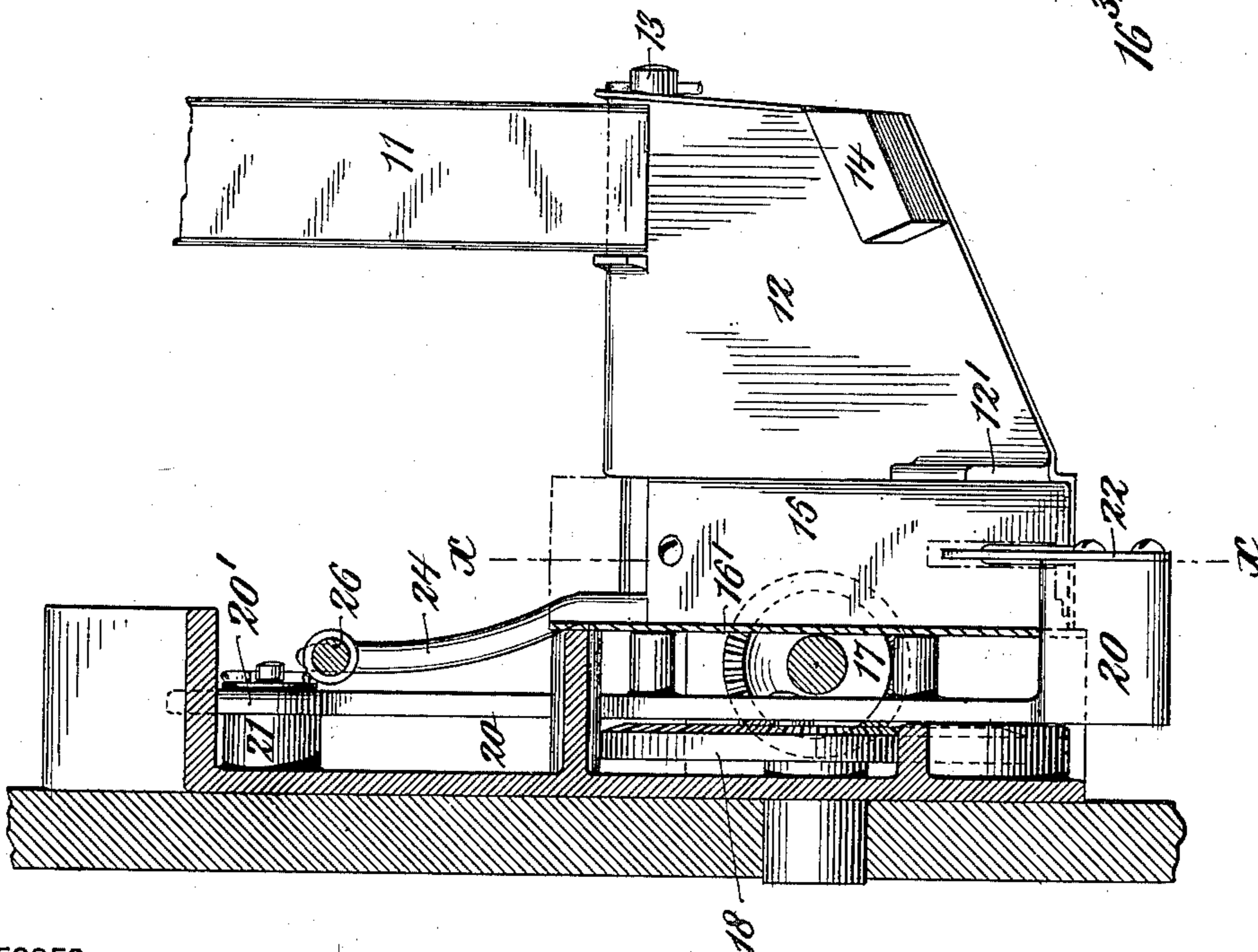


Fig. 8,



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# UNITED STATES PATENT OFFICE.

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## COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 652,713, dated June 26, 1900.

Application filed February 2, 1898. Serial No. 668,796. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN CASLER, a citizen of the United States, residing at Canastota, in the county of Madison and State of New York, have invented certain new and useful Improvements in Coin-Controlled Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to consecutive-view apparatus, and particularly to mutoscopes—such as are covered by Patent No. 549,309, granted to me and dated November 5, 1895—in which the appearance of motion is produced by passing rapidly before the eye a series of picture-cards mounted upon and projecting outwardly from a movable reel or carrier.

My invention consists in a novel coin-controlled operating mechanism by which the operating-handle is thrown into driving connection with the picture-carrier through the instrumentality of a coin of proper denomination. This mechanism is an improvement upon and a substitute for the coin-controlled operating mechanism for apparatus of the same class illustrated and described in the patent of Joseph Mason for a coin-operated device, No. 603,111, dated April 26, 1898.

The object of my invention is to provide a simple, positive, and direct-acting coin-controlled mechanism for automatically connecting and disconnecting an operating-handle or other operating device with mechanism which said handle or device is intended to operate, which coin-controlled mechanism shall unfailingly detect washers, leaden disks, and the like, shall be compact, composed of few parts, not liable to derangement, and inexpensive, and shall be particularly adapted for controlling the operation of consecutive-view-exhibiting apparatus of the mutoscope type. This object is attained in the invention herein described, and illustrated in the drawings which accompany and form a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, and in which—

Figure 1 is a general front elevation of a mutoscope containing the invention herein

described, the door which forms the front of the case of the mutoscope having been removed. Fig. 2 is a detail front elevation of the mechanism of the mutoscope, the picture-reel and the front of the coin-chute and the operating-crank having been removed and the inclined coin-table being sectioned through the line  $x x$  of Fig. 8—that is, through the coin-chute. Fig. 2<sup>a</sup> is a detail transverse section of the shaft 6 and worm 5 through the slot in which the pin 6' works. Fig. 3 is a detail end elevation of the mechanism, taken from the left of Fig. 2, the reel being shown in section. Fig. 4 is a detail rear elevation of the tripping-cam and tripper. Fig. 5 is a detail side elevation of the tripping-cam and tripper. Figs. 6 and 7 are views similar to Figs. 4 and 5, respectively, but show the construction of the tripping-cam when modified to permit two complete revolutions of the picture-reel for each coin deposited. Fig. 8 is a detail elevation, looking from the left of Fig. 2, of those portions of the mechanism which have to do directly with the passage of the coin through the apparatus, these parts being at the right of Fig. 2. Fig. 9 is a detail plan view of the automatic switch which turns on and off the electric light by which the picture-cards are illuminated. Fig. 10 is a sectional detail view of the friction-disks by which the worm is moved up into engagement with the worm-wheel. Fig. 11 is a detail view of the end of the coin-chute looking directly at said end and in line with the chute; and Fig. 12 is a detail view of the piece 16, which forms the top and one side of the coin-chute, detached from the rest of the mechanism.

In the drawings, 1 is a reel carrying a series of resilient picture-cards, which project outwardly from the reel and at their inner ends are rigidly secured to the reel, as described in Patent No. 549,309. This reel is mounted upon a bushing 2, which itself carries and has secured to it a worm-wheel 3. The bushing 2 is revolvably mounted upon a stationary spindle 4. (Indicated in dotted lines in Fig. 3.) A pin 1' upon the rear of the picture-reel is adapted to engage with a shoulder 3' upon the worm-wheel 3, so as to drive the reel.

The worm-wheel 3 is arranged to be rotated by a worm 5, mounted upon a shaft 6 and not keyed to said shaft, but arranged to be driven by the shaft through a pin or key 6', working in a slot in the worm 5. A coiled spring 7 also connects the shaft 6 and worm 5. This worm is normally out of engagement with the worm-wheel 3, but is moved up into engagement with said worm-wheel by instrumentalities hereinafter described when a coin of the proper denomination has been deposited in the opening provided for that purpose. The shaft 6 is connected through a universal joint with a crank-shaft 8, having upon it a crank 9, (shown in Fig. 1,) which forms the operating-handle.

In the inclined end of the case of the mutoscope is a slot-piece 10, containing a slot, (not shown,) into which a coin may be deposited when the apparatus is to be operated. The slot is of such size as not to admit a coin of greater dimensions than the coin for which the apparatus is intended. A coin so deposited passes through a slide 11, Figs. 1 and 8, upon an inclined coin-table 12, pivoted upon a shaft 13 and provided with a deflecting-piece 14 in the path of the coin and beveled so as to deflect the coin to the left of Fig. 8. Coins are usually composed of hard and resilient metals or alloys, and when such a coin strikes the deflecting-piece 14 it is not only deflected to the left of Fig. 8, sliding over the surface of the table 12, but rebounds, so as to clear the upper edge of a guard 12', and slides upon a leaf-spring 15, which is secured to the table 12, but is located in a slight recess in said table, so that the spring is slightly below the face of the table 12. Further sidewise motion of the coin is prevented by the side plate 16' of an angular piece 16, secured to the frame of the mechanism, having an oblique face 16<sup>2</sup>, as indicated in dotted lines in Fig. 2, forming the front of the coin-chute and serving to confine the coin in said chute. The edge of the recess in table 12 and the guard 12' prevent the coin from escaping from the chute by rebounding to the right, so that the coin slides down by gravity to the lower end of the chute, where, if it be of the proper denomination and size, it is held between two stops 16<sup>3</sup> of the piece 16, as indicated in dotted lines in Fig. 2 and as shown in Figs. 11 and 12. These stops are placed at such distance apart that if the coin be of smaller diameter than coins of the denomination which it is intended shall cause the operation of the apparatus it will pass between the stops and will not cause the operation of the apparatus. The stops are cut away, as shown, so that a disk of less thickness than the proper coin will not be held.

The coin is released from the stops 16<sup>3</sup> by the action of a rotating releasing-finger 22, operated as follows: Upon the shaft 8 is a bevel-pinion 17, Figs. 1 and 2. Engaging with this pinion is a bevel gear-wheel 18, revolubly mounted and having a crank-pin

19, upon which the arm 20, carrying the releasing-finger, is mounted. This arm 20 has an upper forked end 20', working upon a guide 21. Upon the lower end of the arm is the releasing-finger 22, which works through slots in the parts of the coin-chute. When the gear-wheel 18 revolves, this finger has imparted to it a nearly-circular motion, which carries it against any coin which may be held in the chute. It strikes the coin at or close to its center and pushes the coin backward, together with the inclined coin-table 12, until the coin is freed from the stops 16<sup>3</sup>, and then drags the coin down and releases it, causing it to drop down into a suitable receptacle 23. The inclined table 12 has an upwardly-projecting arm 24, which abuts against a sleeve 25 upon a tripper 26, Fig. 2. The end of the tripper 26 is also very close to the arm 24. The tripper is mounted in guides in the frame of the mechanism, which guides are arranged to permit the tripper to reciprocate to the right and left of Fig. 2. A spring 27, surrounding the tripper 26, presses the sleeve 25 to the right of Fig. 2, thus normally holding the table 12 in the position shown in the drawings. Another spring 28, to the left of spring 27, also surrounds the tripper and is secured at one end to the tripper and at the other end to the frame of the mechanism, being arranged to act, therefore, both as a compression and as a torsion spring. The end of the tripper 26 is bent downward, as shown in Fig. 2, so as to be adapted to ride upon the face of a tripping-cam 29 upon the rear side of the worm-wheel 3. (Shown in Figs. 3 to 7, inclusive.) The spring 28 by its torsional action tends to swing the tripper to the right of Fig. 3, and when the tripper has been pushed to the left of Fig. 2 through the action of the finger 22 upon the coin, and so upon the table 12, the end of the tripper is moved so far to the left that the spring 28 is enabled to oscillate the tripper, so that when the table 12 begins to return to its normal position the end of the tripper will rest upon the outer face 29' of the cam 29.

Upon the left-hand end of the shaft 6 are two friction-disks 30 and 31, Figs. 2 and 10, both arranged to revolve with the shaft. A spring 32 upon said shaft presses the disk 31 toward the disk 30. Between the disks 30 and 31 is a disk 33, loose upon the shaft. A link 34 is pivoted at one end to this disk 33 at a point to one side of the center thereof and is connected at the other end to a pivoted bell-crank lever 35. Another link 36 (see Figs. 3 and 10) is pivoted to the disk 33 upon the other side of its center and is connected to the frame of the machine. A pin 26' upon the tripper 26 rests against the bell-crank 35. When the tripper 26 is in its normal position—that is, in the position shown in full lines in Fig. 2—the disk 33 is caused to slip between disks 30 and 31, the friction being insufficient to overcome the pressure of the spring 28 upon the tripper 26; but when the

tripper has been moved to the left, into the position shown in dotted lines in Fig. 2, the bell-crank is free to move and the friction of the disks 30 and 31 overcomes the weight of the shaft 6 and causes the disk 33 to rotate about its point of connection with link 36 as a pivot, thus rolling upward upon said link and lifting the shaft 6, thus moving the worm 5 into engagement with the worm-wheel 3. As soon as the worm is in engagement with the worm-wheel the worm-wheel and reel 1 begin to revolve. When the rotation of the worm-wheel 3 commences, the tripping-cam 29 (shown in Figs. 4 and 5) is in a position about diametrically opposite to that position in which it is shown in Figs. 4 and 5, and the end of the tripper rides upon the top ridge 29' of the cam. The rotation of the cam is in the direction indicated by the arrow. In the outer face 29' of this cam is a beveled, inclined, or wedge-shaped portion 29<sup>2</sup>, which when it reaches the end of the tripper causes said tripper to slip down under the action of the spring 28 upon the second face 29<sup>3</sup> of the cam. In this second face 29<sup>3</sup> and at a point close to the point on the face 29' where the tripper rested upon the cam when the revolution began, is another beveled, inclined, or wedge-shaped portion 29<sup>4</sup>. The pressure of the spring 28 causes the tripper to slide down this incline 29<sup>4</sup> as soon as said incline reaches said tripper, thus causing the tripper to slip entirely off from the edge of the cam, and so to return to its original position. (Shown in full lines in Fig. 2.) When the tripper is released in this manner, the pin 26' strikes the bell-crank 35 and forces the friction-disk 33 downward, thus moving the worm 5 out of gear with the worm-wheel 3 and stopping the revolution of the apparatus.

As explained in the above-mentioned patent, No. 549,309, in mutoscopes a detent is employed which engages the ends of the cards at a point just back of the field of view, putting the cards under tension as the reel revolves, and each card when it has passed said detent springs forward with considerable velocity across the field of view. In this way each card remains for an instant substantially stationary and with its face clearly visible in the field of view and then springs forward with great rapidity across the field of view, thus exposing to view the next succeeding card. 37 is this detent. It is pivotally mounted upon a shaft 38. The detent normally occupies the position shown in Figs. 2 and 3, in which position it lies between the cards with the cards relieved from tension; but when the reel begins to rotate the cards move the detent into the position shown in Fig. 1, in which position the cards are free to slip under it after they have been put under a sufficient amount of tension. When the reel is released by the action of the tripper 26, the tension of the cards forces the detent back into the position shown in Figs. 2 and 3 and moves the reel backward sufficiently to

relieve the tension on the cards. It is advisable to relieve the tension on the cards in order that they may not acquire a permanent set. 70

The detent 37 actuates an electric switch by which the current of the lamp which illuminates the pictures is turned on when the operation of the apparatus begins and is turned off when the operation of the apparatus ceases. 40, Fig. 1, is this lamp. One terminal of its circuit is connected to a flexible contact-piece 41, secured to a block 42 of insulating material. The other terminal of the circuit is connected to the metallic frame-work of the apparatus, and therefore is connected to the shaft 38 and the detent 37 thereon. This detent 37 carries a pin 43, which when the detent rotates into the position shown in Fig. 1 makes contact with the flexible contact-piece 41, so completing the circuit of the lamp 40 and turning on the light. When the reel turns backward, however, so that the detent returns to its normal position, the pin 43 breaks contact with the piece 41 and the light is turned off. In the drawings a spring 39 is shown mounted upon the shaft 38 and tending to hold the detent in the position shown in Figs. 2 and 3. This spring is not a necessary feature of the apparatus, but may be employed, if desired, its function being to hold the detent in such a position that the electric switch is open at times when no reel is in the apparatus. 80 85 90 95

The shaft 6 is supported in its lower or normal position by a loop 44, of sheet-metal, which also serves as a guide to the shaft when it moves up and down. A plate 45, which serves to hold the gear-wheel 3 in place, may also serve as an additional guide for the shaft. The purpose of the spring 7, which serves as a connecting medium between the shaft 6 and worm 5, is to automatically disconnect the worm 5 and worm-wheel 3 in case the operating-crank 9 should be released before the cam 29 has been rotated far enough to operate the tripper 26 and throw the worm out of gear. The spring 7 is of course under tension while the shaft 6 is revolving, and if the crank 9 be released the spring causes a backward rotation of the shaft 6, which necessarily moves the shaft downward. 100 105 110 115

The operation of the apparatus is as follows: When a coin of proper denomination is deposited in the slot in the slot-piece 10, it passes through the chute 11 upon the coin-table 12 and striking the deflecting-piece 14 rebounds to the left, sliding over the surface of the table until it encounters the plate 16', and then sliding down the coin-chute until held by the stops 16<sup>3</sup>. If now the crank 9 be rotated, the shafts 8 and 6 and the gear-wheel 18 are rotated and the coin-releasing finger 22, being thereby rotated, strikes the coin at its center and swings the coin-table about its pivot, thus causing the arm 24 to push the tripper 26 to the left. As this is done the spring 28 by its torsional action oscillates the tripper to the right of Figs. 3 and 5 until when 120 125 130

the releasing-finger begins to move to the left again the end of the tripper rests upon the upper face 29' of the tripping-cam 29. By the action of the releasing-finger 22 the coin is freed from the stops 16<sup>3</sup> and drops downward into the box 23. As the tripper begins to move to the left the friction-disk 33, being free to rotate, since the pin 26' is no longer in engagement with the bell-crank 35, rises, rolling upward upon the link 36, Fig. 3, until the worm 5 is in mesh with the worm-wheel 3. Some further rotation of the crank 9 is absorbed by the spring 7 until the pin 6' upon the shaft 6, which pin works in a slot in the worm 5, as already stated, and acts as a key to transmit motion from the shaft 6 to the worm 5, reaches the end of its slot. The reel then begins to rotate, and the detent is moved into the position shown in Fig. 1, thus turning on the light, and the cards begin to pass under the detent and across the field of view. After the reel has rotated a short distance the first beveled portion 29<sup>2</sup> of the tripping-cam 29 reaches the tripper 26 and forces the tripper down upon the second face 29<sup>3</sup> of said cam. The purpose of this will be hereinafter explained. After the reel has rotated until it is opposite the position where the cards first began to slip under the detent the tripper encounters the second beveled portion 29<sup>4</sup> of the cam 29 and is forced over the edge of said cam and to the right of Fig. 2 by its spring 28, the pin 26' striking the bell-crank 35 and moving the friction-disk 33 and shaft 6 downward, thus throwing the worm 5 out of mesh with the worm-wheel 3. As soon as the worm is out of mesh with the worm-wheel the detent 37 returns to its normal position, rotating the reel backward, so as to relieve the tension on the cards and turning off the light. If the crank 9 should be released at some intermediate point, the shaft 6 will be rotated backward by the spring 7, because of the tension of said spring produced by the motion of the shaft 6 after the worm 5 engaged the worm-wheel 3, but before the pin 6' reached the end of its slot in said worm, and the worm 5 is disengaged from the worm-wheel 3, thus permitting the reel to turn backward, relieving the cards of tension and turning off the light. If after being so released the crank 9 is again rotated in a forward direction, the worm 5 will be moved up into engagement with the worm-wheel 3 and the reel will rotate again until rotation is stopped by the action of the tripper.

The purpose of employing two faces upon tripping-cam 29 may now be seen. If after the reel has been rotated through, say, half a revolution the crank 9 should be released and the person who has been operating the machine should leave it and then another person ignorant of the fact that the first person has left the machine in an intermediate position should deposit another coin in the machine, then if the cam 29 were not provided with two faces the second person would

see but half of the pictures, in spite of the fact that he had deposited a proper coin in the apparatus. This is obviated by the employment of the two faces, for even though the machine be left at an intermediate point, with the tripper 26 resting upon the lower face, when a coin is again deposited the tripper is raised to the first face again. If it be desired to permit each person to see the views twice for each coin deposited, the cam may be provided with a third face 29<sup>5</sup>, as shown in Figs. 6 and 7. Two revolutions of the cam will then take place before the tripper throws the worm out of gear.

An important function of this mechanism is the detection of leaden disks, washers, and the like of about the size of the coin by which it is intended that the operation of the mechanism shall be controlled. For the detection of leaden disks advantage is taken of the fact that lead is less resilient than the harder metals of which coins are made. A leaden disk passing down the slide 11 and encountering the deflecting-piece 14 will not rebound sufficiently to clear the upper edge of the guard 12', but will pass downward through the open space between the guard 12' and the deflecting-piece 14. (Shown in Fig. 8.) A washer which, because composed of some hard metal, may clear the upper edge of the guard 12' will be detected by the releasing-finger 22, which will pass through the central hole of the washer without moving the table 12 about its pivot to a sufficient extent to move the tripper opposite one of the ridges in the cam 29, but will nevertheless drag the washer out of the coin-chute, and a disk which is thinner than the coin will not be held by the stops 16<sup>3</sup>, because of the way in which these stops are cut away. The finger 22, by reason of its clawing movement, serves to remove from the coin-chute any objects—such as paper, cord, wire, and the like—which may be placed therein and which might otherwise obstruct the chute and stop the operation of the apparatus.

The function of the spring 15 is simply to compensate for possible warping of the coin-table 12. This table is a casting and is liable to be warped to some extent, and the effect of this warping might be to cause it to droop at the end of the coin-chute. To avoid the necessity of machining the table, the spring 15 is employed, which, since it presses up against the end of the piece 16, as shown in Figs. 2 and 11, compensates for any possible drooping of the corner of the table 12.

I do not claim herein the electric switch operated by the detent for turning on and off the light, nor do I claim the mechanism employed for throwing the operating-handle into and out of driving connection with the reel and for releasing the reel and permitting it to turn backward as soon as the operating-handle is released, apart from the combination of such mechanism with coin-controlled apparatus controlling the throwing of the op-

erating-handle into driving connection with the reel. The switch mechanism and the mechanism for throwing the operating-handle into and out of connection with the reel and for releasing the reel, together with the tripper and tripping-cam, are claimed in a divisional application filed March 1, 1899, Serial No. 707,295.

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

1. In a coin-controlled apparatus, the combination, with a coin-holding device having a movable member, of a movable releasing-finger which contacts with the coin and moves the same in the direction of movement of the said movable member, thereby moving said member also and releasing the coin, said finger having a clawing movement, so that if the coin-holding device be obstructed, the releasing-finger acts to remove the obstruction, and means operated by the movement of said movable member for setting the apparatus in operation, substantially as described.

2. In a coin-controlled apparatus, the combination, with a coin-chute having a movable member and means for holding a coin in said chute, said movable member being slotted opposite the position of the coin for the passage of the releasing-finger, of a movable releasing-finger which contacts with said coin in proximity to its center and moves the same in the direction of movement of the movable member of the coin-chute, thereby moving said member also and releasing the coin from the chute, but passes through a washer occupying the position of said coin, so as not to move the movable member of the chute to the full extent of its travel, if a washer has been placed in the chute and which, when no coin is in the chute, moves through, along, and out of the slot in the movable member with a clawing movement, thereby serving to clear the chute of obstructions, and means operated by the said movable member of the chute when moved to the full extent of its travel for setting the apparatus in operation, substantially as described.

3. In a coin-controlled apparatus, the combination, with a coin-chute having a tilting member, and means for holding a coin in said chute, the members of said chute being slotted opposite the position of a coin held in the chute, of a releasing-finger mounted upon a movable member which passes said finger through and along said slot at intervals in the direction of motion of the movable member of the chute with a clawing action, thereby contacting with a coin in the chute and tilting said movable member, if a coin be in place within the chute, and clearing the chute, if it be obstructed, and means operated by the movement of the movable member for setting the apparatus in operation, substantially as described.

4. In a coin-controlled apparatus, the combination, with a coin-chute, one of the members of which is a tilting table provided with a deflecting-piece in the path of a coin, arranged to deflect coins of predetermined denomination into said chute, and having a guard by which objects of less resilient metal are prevented from passing into said chute, and means for holding a coin in said chute, of a releasing device for releasing the coin from said chute and simultaneously tilting said table, and means operated by the movement of said table for setting the apparatus in operation, substantially as described.

5. In a coin-controlled apparatus, the combination, with a driving-shaft, gearing driven by said shaft, a tripper, a tripping-cam regulating the action of the tripper, mechanism operated by the tripper for throwing the gearing out of gear and retaining it in that condition until said tripper is set to permit the operation of the apparatus, and mechanism for throwing said gearing into gear as soon as the tripper has been set, of a coin-holding device having a movable member, means for delivering a coin thereto, a movable releasing-finger which contacts with the coin and moves the same in the direction of movement of said movable member, thereby moving said member also and releasing the coin, and means operated by the movement of the said movable member for setting the tripper, thereby permitting the operation of the apparatus, substantially as described.

6. In a coin-controlled apparatus, the combination, with a driving-shaft, gearing driven by said shaft, a tripping-cam driven by said gearing and against the edge of which a spring-pressed tripper may bear, and provided with means whereby the tripper may be deflected to one side when the cycle of operations has been completed, a spring-pressed tripper adapted to bear against the face of said cam, mechanism operated by the tripper for throwing the gearing out of gear and retaining it in that condition until said tripper has been set, and mechanism for throwing said gearing into gear as soon as the tripper has been set, of a coin-chute having a tilting member, means for holding a coin in said chute, means for delivering a coin to said chute, a movable releasing-finger which contacts with the coin and moves the same in the direction of movement of the tilting member of said chute, thereby moving said finger also and releasing the coin, and an arm projecting from the tilting member of said chute, and adapted to contact with the tripper and set the same, substantially as described.

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

HERMAN CASLER.

Witnesses:

H. M. MARBLE,  
H. A. CASE.