

(No Model.)

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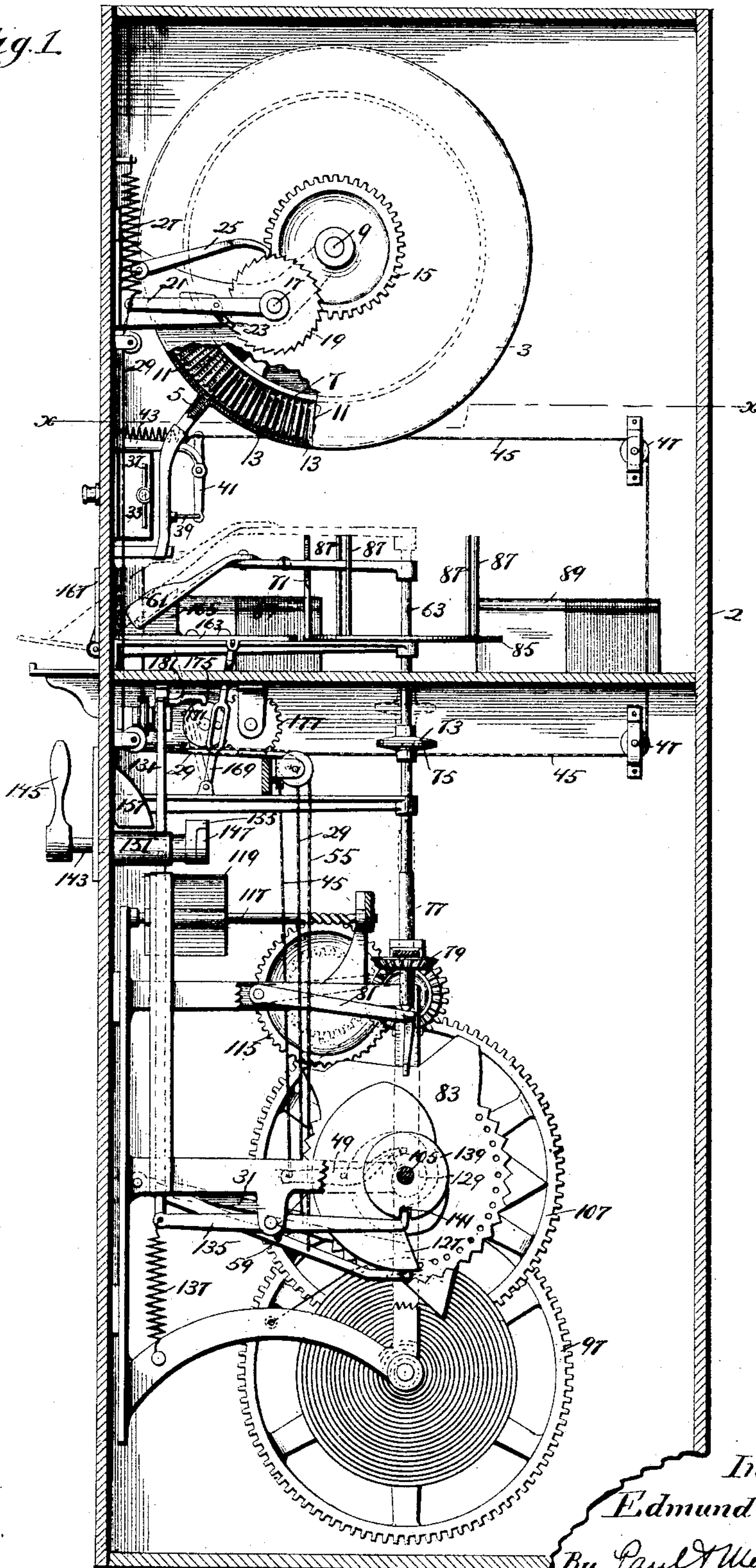
E. G. FISHER.

COIN CONTROLLED AUTOMATIC PHOTOGRAPHIC APPARATUS.

No. 444,487.

Patented Jan. 13, 1891.

Fig. 1



Witnesses.  
J. Jensen  
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Inventor,  
Edmund G. Fisher.  
By Paul W. Merwin atty's

(No Model.)

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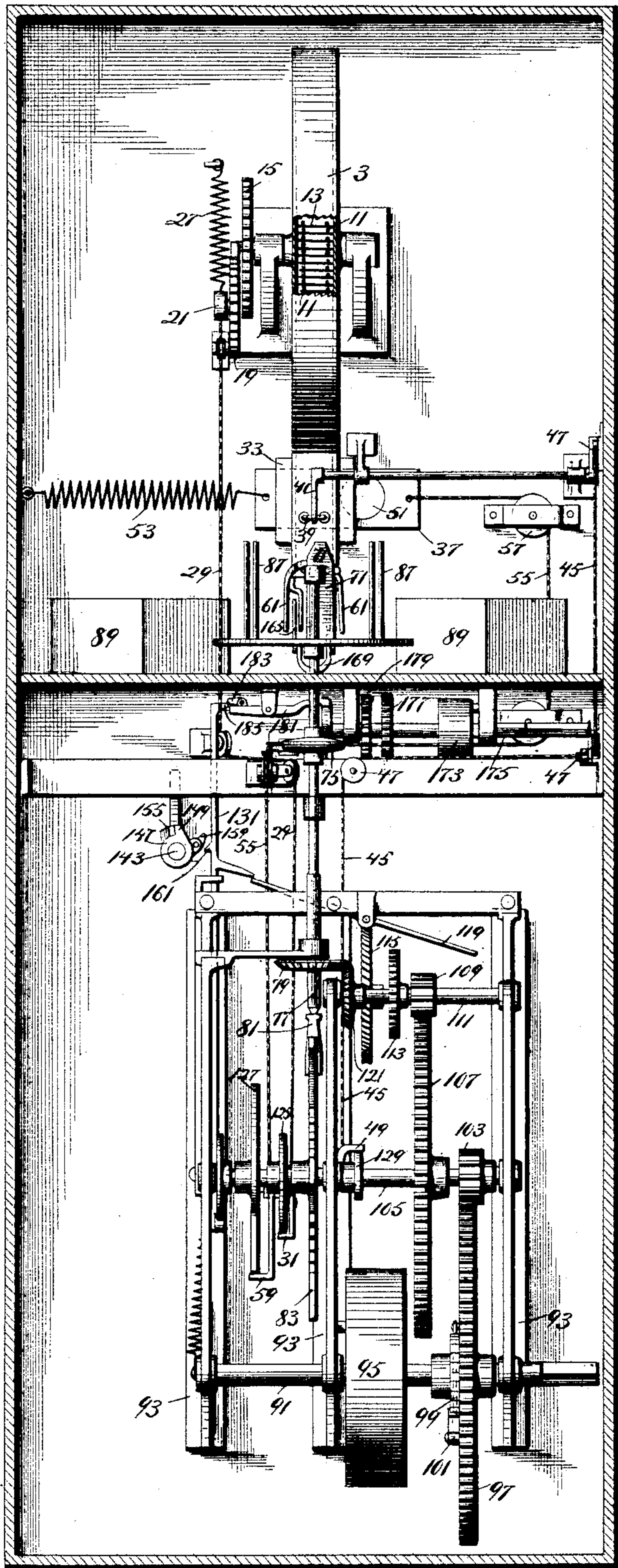
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Fig 2.



Witnesses.  
J. Jensen  
Aug. J. Gaskill

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Edmund G. Fisher.

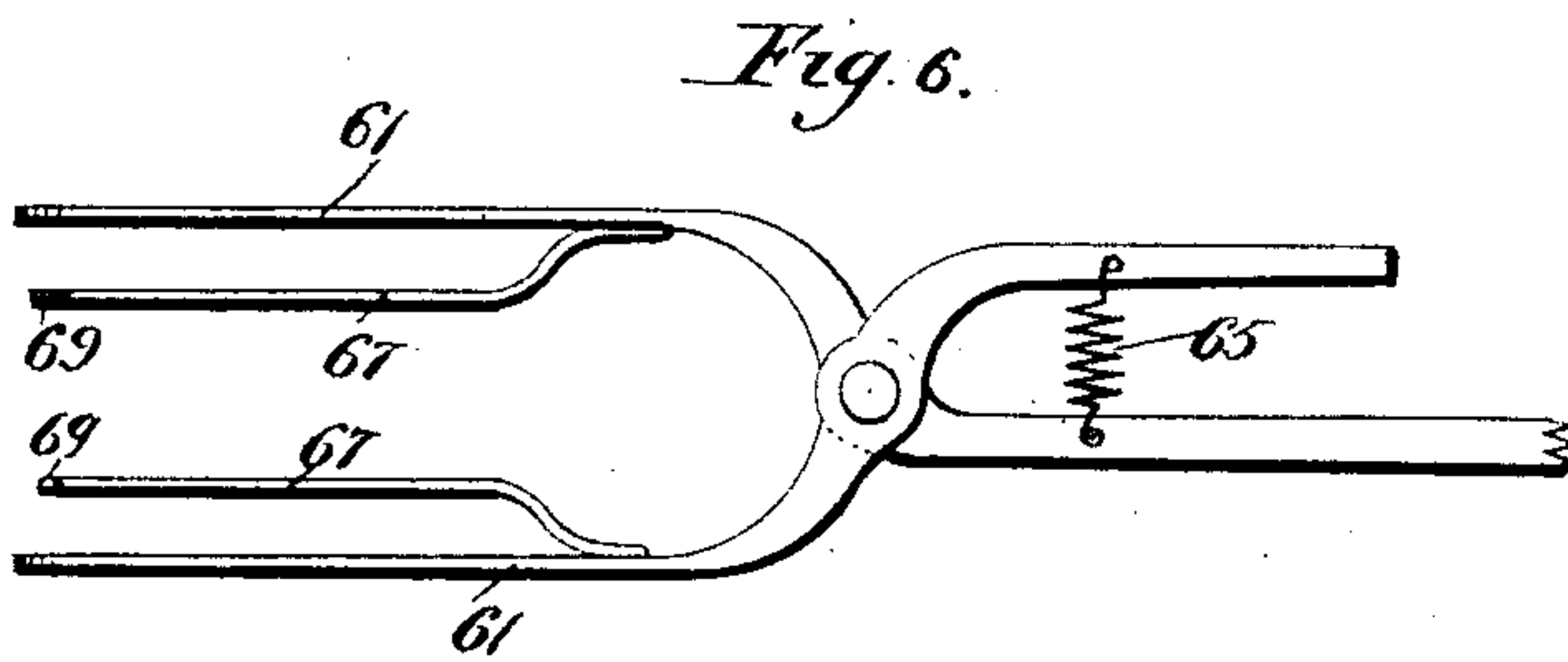
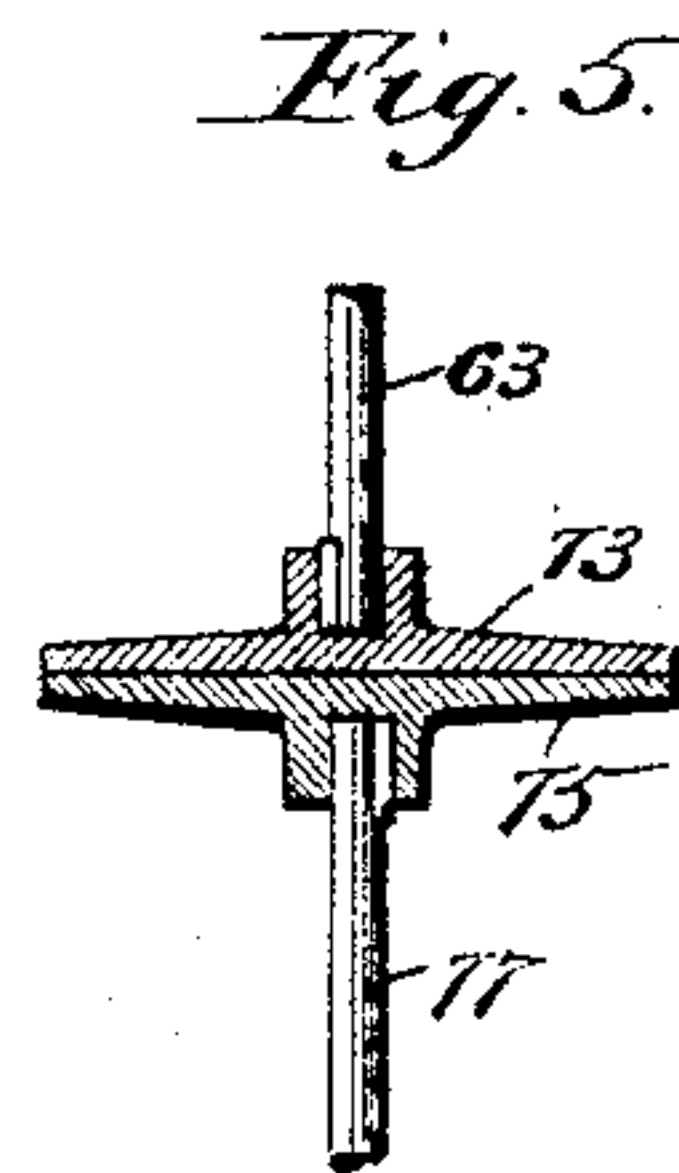
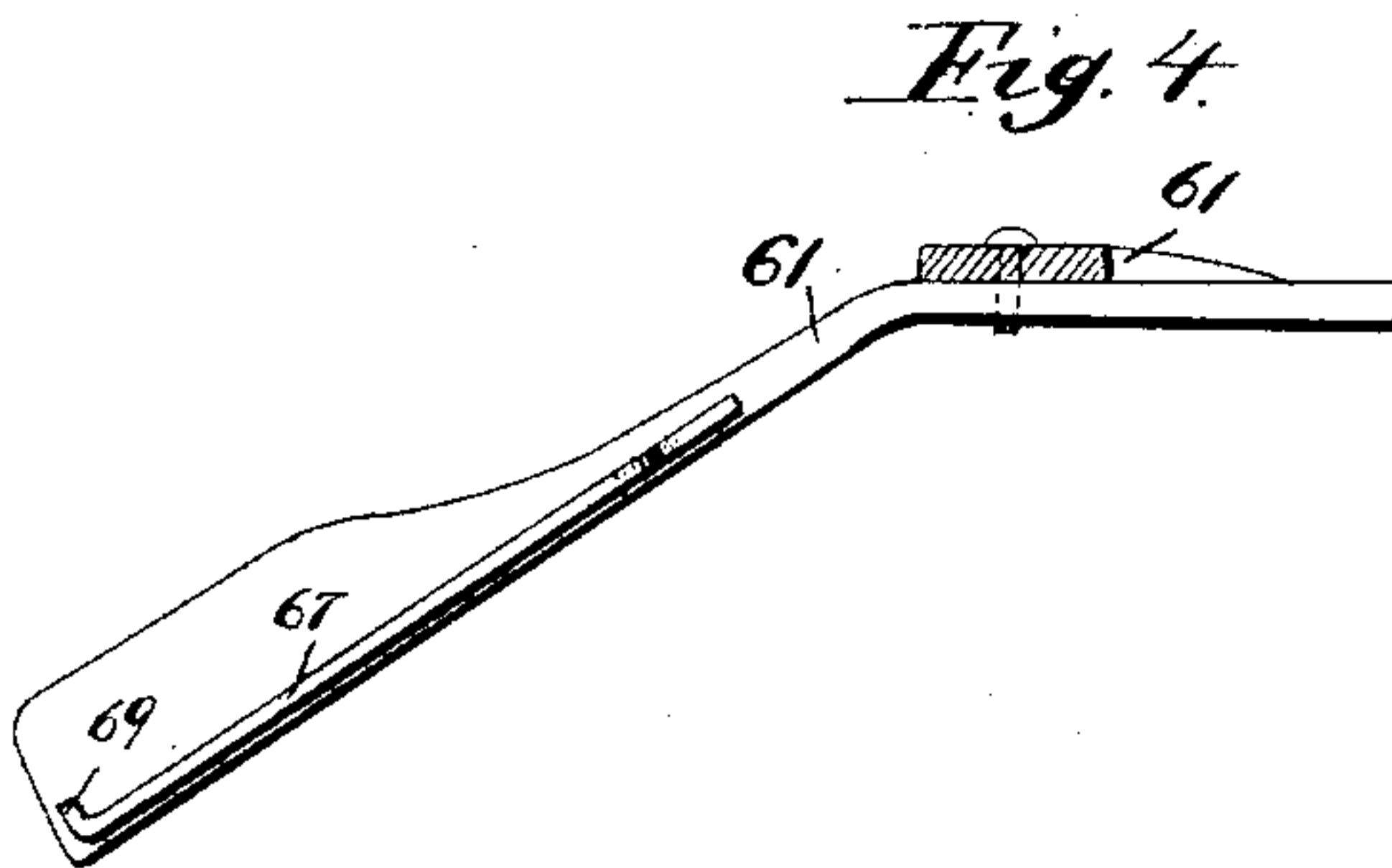
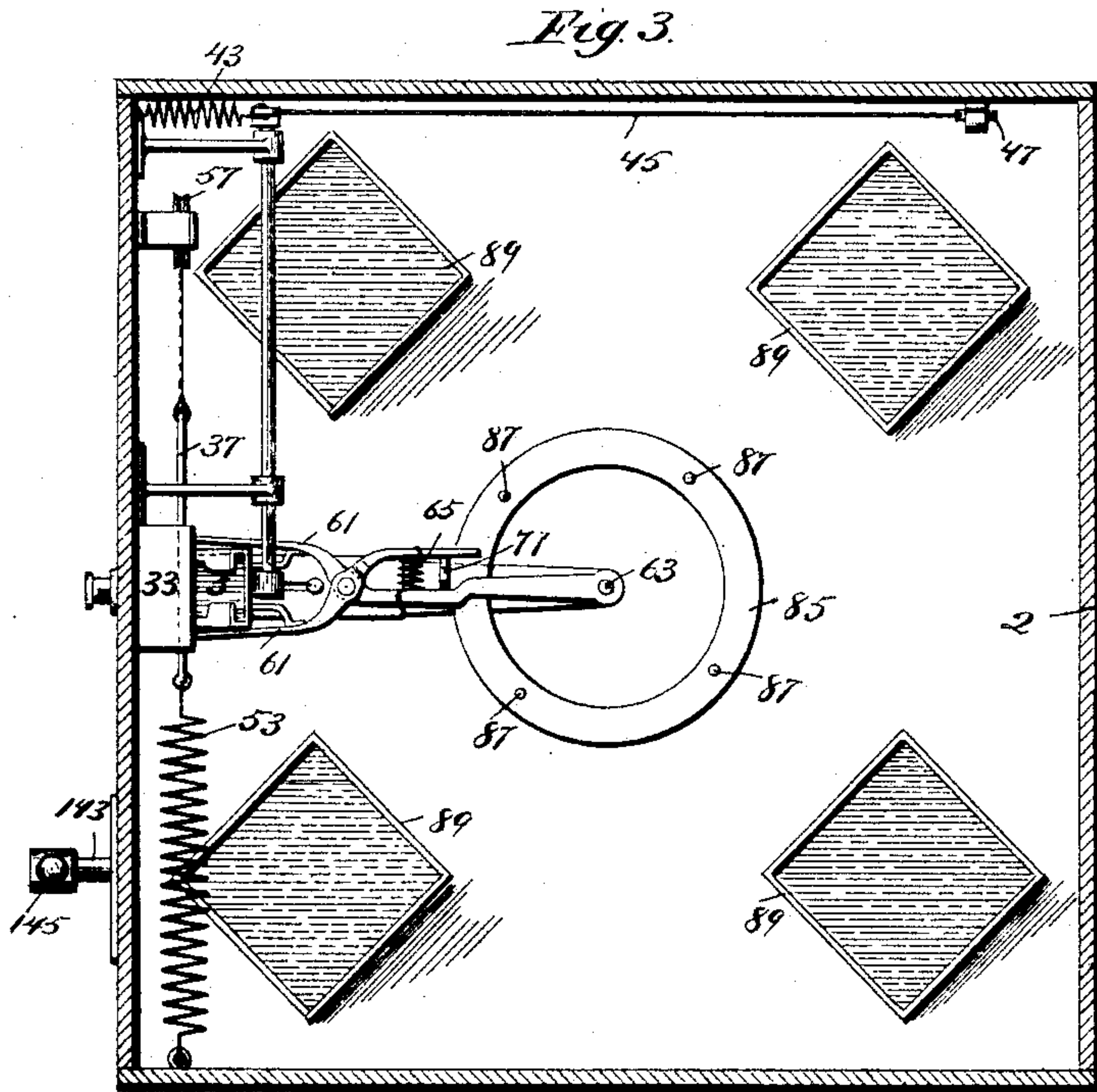
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(No Model.)

4 Sheets—Sheet 3.

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COIN CONTROLLED AUTOMATIC PHOTOGRAPHIC APPARATUS.  
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(No Model.)

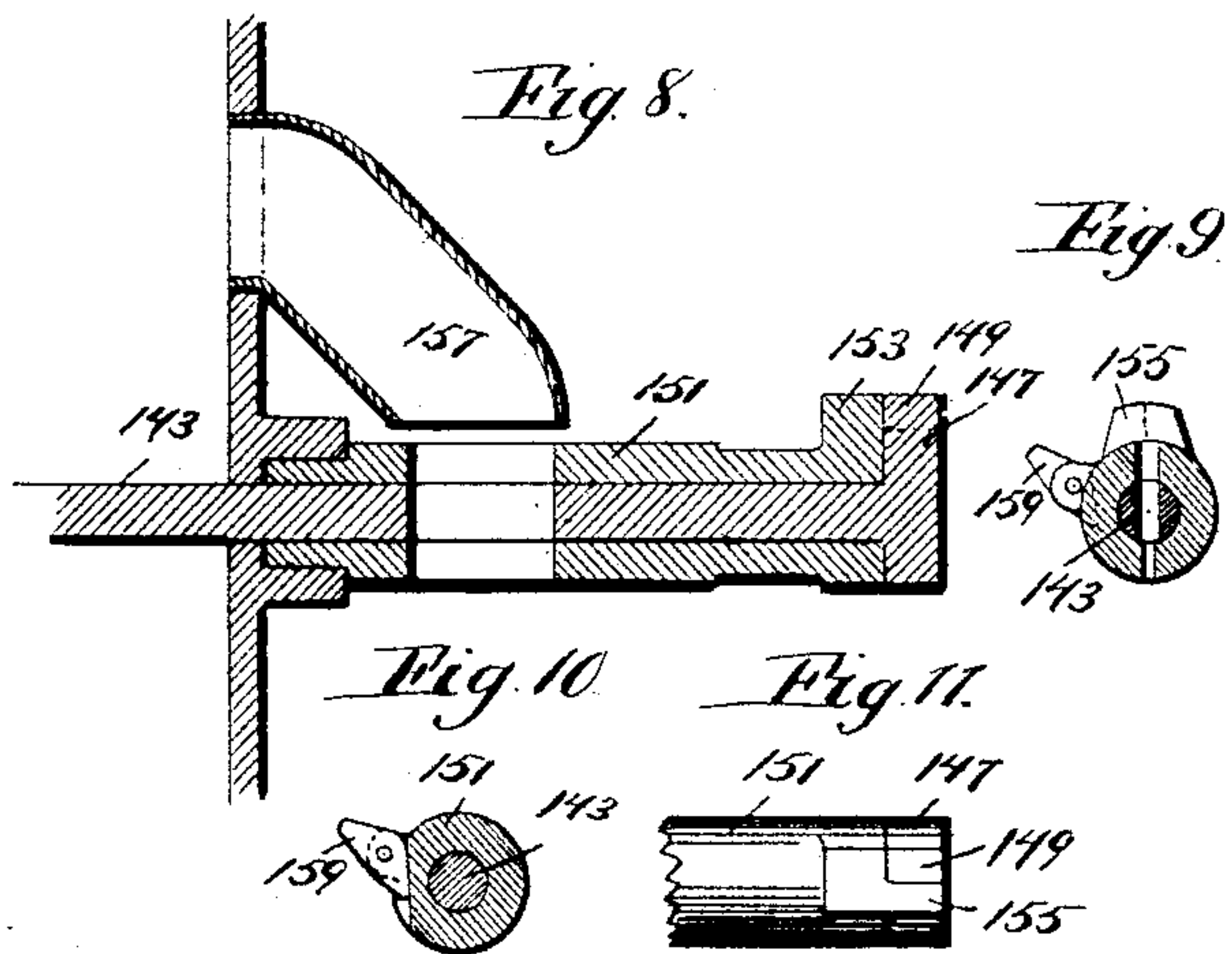
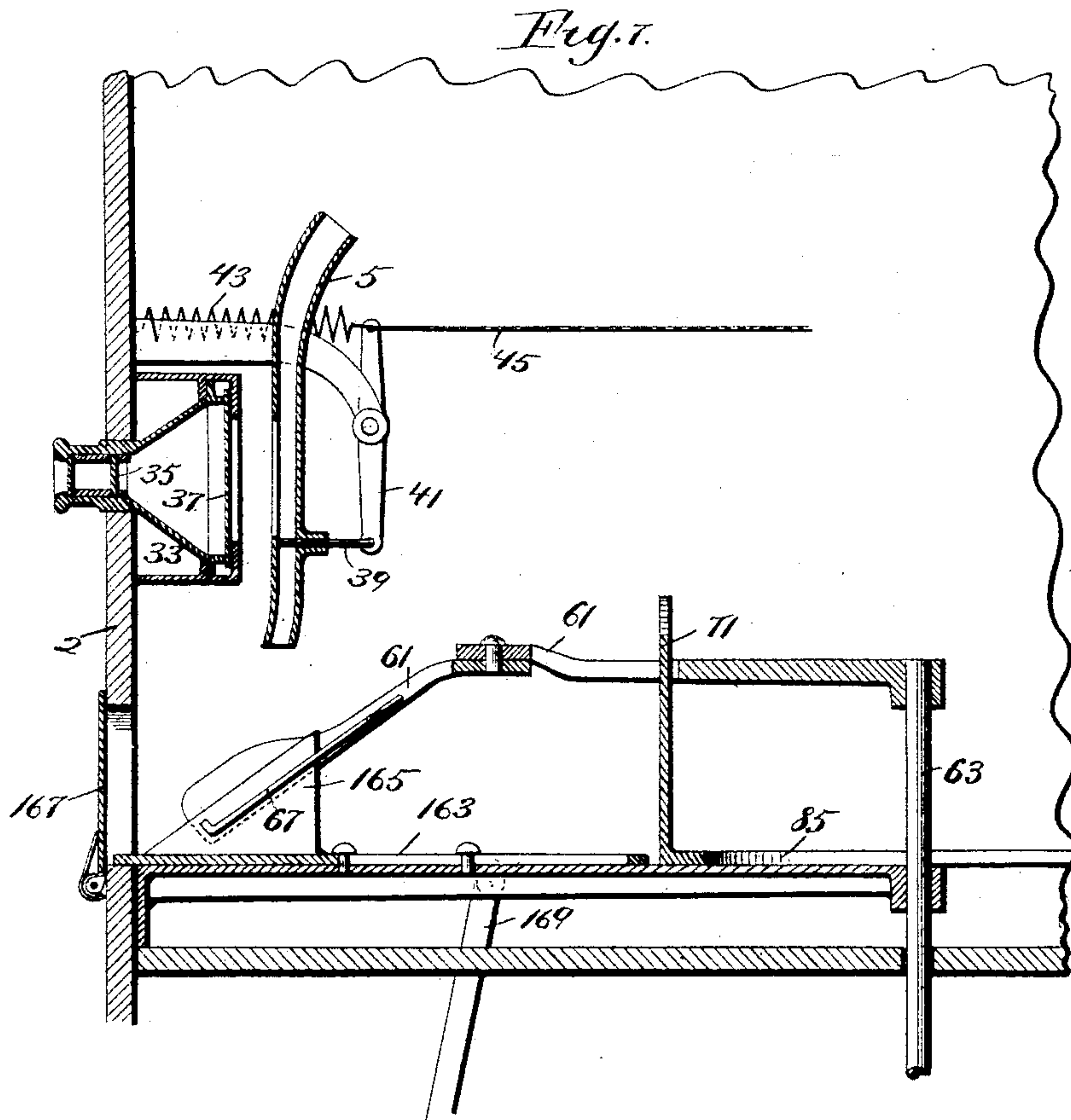
4 Sheets—Sheet 4.

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COIN CONTROLLED AUTOMATIC PHOTOGRAPHIC APPARATUS.

No. 444,487.

Patented Jan. 13, 1891.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

EDMUND G. FISHER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO THE  
FISHER SPECIALTY MANUFACTURING COMPANY, OF SAME PLACE.

## COIN-CONTROLLED AUTOMATIC PHOTOGRAPHIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 444,487, dated January 13, 1891.

Application filed August 6, 1889. Serial No. 319,924. (No model.)

*To all whom it may concern:*

Be it known that I, EDMUND G. FISHER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain  
5 new Improvements in Coin-Controlled Automatic Photographic Apparatus, of which the following is a specification.

The object of this invention is to provide  
10 an apparatus which upon the introduction of a suitable coin will automatically take, finish, and deliver a picture of a person or other object located in proper position in front of the machine, and the apparatus is preferably  
15 so arranged that a person may stand in front of the machine, drop a coin in the slot, set the machine in motion, and have his own picture taken and delivered to him.

The invention consists, generally, in providing a suitable reservoir or receptacle for  
20 holding the plates, a camera to which the plates are delivered and by which they are exposed, a plate-holder which receives the plate from the camera and carries it through suitable baths and develops and fixes the  
25 picture, and actuating mechanism which upon the introduction of a suitable coin automatically causes said devices to be operated.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side  
30 elevation of my apparatus, the inclosing case being shown in section, a portion of the plate-reservoir being broken away to show the interior arrangement and a portion of the frame being broken away to show the arrangement  
35 of the cams upon the cam-shaft. Fig. 2 is a rear end elevation, the casing being shown in section and a portion of the wall of the plate-reservoir being broken away. Fig. 3 is a horizontal section on line *xx* of Fig. 1. Fig.  
40 4 is a detail side elevation of the plate-holder. Fig. 5 is a detail of the friction-driving mechanism of the plate-holder. Fig. 6 is a plan view of the plate-holder. Fig. 7 is a detail section through the camera and plate-  
45 holder. Figs. 8, 9, 10, and 11 are details of the coin-controlled mechanism for releasing the actuating mechanism.

In the drawings, 2 represents a suitable casing, which may be of any convenient size,  
50 shape, and material, and which incloses the mechanism of the apparatus. Arranged in

the casing is a suitable receptacle or reservoir, which holds a desired number of plates upon which the pictures are to be taken. The casing is also provided with a suitable camera to which the plates are delivered from the  
55 receptacle and by which they are exposed for the purpose of receiving the image of a person or other object standing or placed in front of the camera. A plate-holder is arranged within the casing and receives the  
60 plate from the camera after the exposure. While held by the plate-holder the plate is carried through or dipped in suitable baths for developing, fixing, and washing the picture, which is then delivered to the outside of  
65 the casing. These devices are arranged to be operated by a suitable actuating mechanism, which is so arranged that it may be set in motion upon the introduction of a suitable  
70 coin.

The plate reservoir or receptacle which I have shown consists of a circular casing 3, having a suitable delivery-chute 5. Arranged  
75 within the casing 3 is a wheel 7, mounted upon a suitable shaft 9, and provided with a series of radial plate-spaces formed, preferably, by pins 11, projecting from the periphery of the wheel. The plates 13, upon which  
80 the pictures are taken, are placed between the pins 11, and as the wheel is rotated the plates drop into the chute 5. The wheel is arranged so as to be rotated with a step-by-step motion, and the plates are delivered one  
85 at a time to the chute. For rotating the wheel I prefer to provide a gear 15 upon the shaft 9, which is engaged by a suitable pinion upon a shaft 17. A ratchet-wheel 19 is arranged upon the shaft 17, and is operated by  
90 an arm 21, provided with a pawl 23. A dog 25 engages the ratchet and prevents any backward movement thereof. A spring 27 is connected to the arm 21 and returns it to its normal position after each movement of the  
95 wheel. A cord 29 is connected to the arm 21 and extends to a pivoted lever 31, that is operated by the actuating mechanism hereinafter described. A camera 33 is provided with a suitable lens 35, and a slide 37 is arranged, preferably, opposite an opening in the  
100 wall of the chute 5. Stop-pins 39 project into the chute 5, and when a plate passes into the



chute it is arrested by the stop 39 and held in a vertical position opposite the camera. The stop 39 is connected to a lever 41, and a spring 43, also connected to this lever, tends to withdraw the stop, so as to permit the plate to pass through the chute. A cord 45 is connected to the lever 41, passes over suitable pulleys 47, and is connected to a lever 49. (Shown by dotted lines in Fig. 1.) The lever 49 is controlled by a suitable cam upon the actuating mechanism hereinafter described, and holds the stop 39 in position to retain a plate in the chute, except when it is desired to permit the plate to drop out of the chute at each time the stop is released, and is withdrawn by the spring 43. The camera-slide 37 is provided with a suitable opening 51. This slide is held normally with an imperforate portion opposite the lens of the camera. A spring 53 is connected to the slide 37, and when the slide is released draws it quickly across the camera, thus permitting an instantaneous exposure of the plate. After the plate has been exposed and has dropped out of the chute the slide is returned to its original position, and is held there until released for the next exposure. For the purpose of retracting and holding the slide, I preferably connect to the slide a cord 55, which passes around suitable pulleys 57, and is connected to a lever 59, that is controlled by a cam on the actuating mechanism hereinafter described.

The plate-holder is arranged, preferably, below the chute 5, and receives the plates as they drop out of the chute. This plate-holder consists, preferably, of two jaws 61, that are pivoted together like a pair of tongs. One of these jaws is secured to a shaft 63, that is mounted in suitable bearings, in which it is free to rotate. A spring 65 is arranged between the jaws and tends to press them toward each other. A plate-support 67 is arranged upon the inner side of each jaw, and consists, preferably, of a strip of wire having an upturned end 69. The plate drops from the chute between the jaws, the outer ends of which are preferably downwardly inclined, and rests upon the plate-supports 67. When in position to receive the plate, the jaws are held apart by a wedge-shaped projection 71, that extends between the rear portion of the jaws and forces them apart. The shaft 63 has at its lower end a friction-disk 73, which rests upon a similar disk 75 upon the upper end of a shaft 77. The shaft 77 has secured to it a suitable driving-wheel 79, preferably a bevel-gear. The shaft 77 rotates with the gear 79, but is free to slide longitudinally through said gear. The lower end of the shaft 77 is supported upon a lever 81, having preferably a downwardly-extending portion that rests upon a cam-wheel 83 of the actuating mechanism hereinafter described. While the actuating mechanism is in operation the shaft 77 is given a continuous rotary movement and an up-and-down movement

that is occasioned by the projections upon the cam-wheel 83. The shaft 63 and the plate-holder carried by it move up and down with the shaft 77 and rotate with that shaft when they are free to do so. When the plate-holder is held from turning, the friction-plates 73 75 permit the shaft 77 to turn, and the shaft 63 and the plate-holder then have an up-and-down movement only. A ring 85 is arranged beneath the plate-holder, and is provided with a series of upwardly-projecting pins 87, preferably four in number. The wedge-shaped projection 71, hereinbefore described, may also be conveniently secured upon this ring, as shown in Fig. 1. Suitable receptacles 89 are arranged within the casing opposite the pins 87, and these receptacles contain the chemicals for developing and fixing the picture. After the exposed plate has dropped into the plate-holder said plate-holder is raised by the movement of the shaft 77 until it clears the projection 71. The spring 65 then causes the plate-holder to securely grip the plate. The shaft 63 then begins to rotate and moves until the plate-holder strikes the first pin 87. The plate-holder will then be over the first receptacle 89, which contains the developing-solution. The rotary movement of the plate-holder will now be stopped, but it will now have an up-and-down movement, which will cause the plate to enter the developing solution and be moved up and down therein. The plate-holder will then be raised until it clears the pin 87, when it will begin to rotate and at the same time to descend, striking the next pin 87 and stopping over the next receptacle containing water, in which the plate will be moved up and down for the purpose of washing it. The plate-holder will be again raised and carried over the next pin 87 and rotated and lowered, striking the next pin and holding the plate over the next receptacle containing the fixing solution. The plate will be moved up and down in this solution and will then be raised, carried over the pin 87, rotated and lowered and brought against the next pin and stopped over the next receptacle containing water. The plate will be moved up and down in the water and will then be raised sufficiently to clear the next pin 87, and will be brought around to the starting-point and again lowered, bringing the projection 71 between the parts of the plate-holder and releasing the plate, which will then be removed from the plate-holder and brought outside of the casing, preferably by the means hereinafter described.

The devices hereinbefore described may be moved by any suitable actuated mechanism. I prefer to employ a strong clock-work that is arranged within the casing and is released upon the insertion of a suitable coin and runs for a predetermined length of time, giving to the mechanisms hereinbefore described the movements set forth. A shaft 91 is mounted in bearings in a suitable frame 93,



and a strong clock-spring 95 is connected to this shaft, which may be wound up by applying a suitable wrench or key to the shaft 91. A gear-wheel 97 is mounted upon the shaft 91, to which it is connected by means of a suitable ratchet 99 and pawl 101. The gear-wheel 97 engages the pinion 103 upon the cam-shaft 105. This shaft is provided with a gear-wheel 107, which engages a pinion 109 upon a shaft 111. The shaft 111 is in turn provided with a gear-wheel 113, which engages the pinion upon a short shaft carrying a worm-wheel 115. The wheel 115 engages a worm-shaft 117, that is provided with a fan or speed governor 119. This train I find to be adapted for the purposes desired; but it will be understood that I do not confine myself to the details thereof, as the same may be modified or varied without departing from my invention.

The cam-shaft 105 is provided with the cam-wheel 83, which has a series of projections thereon for the purpose of giving to the shaft 77 and the plate-holder the desired up-and-down movement. This shaft is also provided with the cam 125, which controls the movement of the lever 31, a cam 127, which controls the movement of the lever 59, and a cam 129, which controls the movement of the lever 49. The shaft 111 is provided with a bevel-gear 121, which meshes with the gear 79 on the shaft 77. The actuating mechanism is held normally with its parts stationary by means of a suitable stop device. When a suitable coin is inserted, the actuating mechanism is released, the cam-shaft 105 makes a complete revolution and then stops. Any suitable coin-controlled mechanism may be used for releasing the actuating mechanism.

The device which I have shown and which I prefer to use for this purpose is constructed and arranged as follows:

A bar 131 is arranged to slide in bearings upon the frame of the machine, and is provided with a projection that is adapted to engage the fly 119, and when in engagement with the fly the train is held stationary. A lever 135 is pivoted in bearings upon the frame of the machine, and its end is connected to the lower end of the sliding bar 131. The other end of the lever 135 is provided with a projection which bears upon the periphery of a disk 139, that is mounted upon the shaft 105. This disk is provided with a suitable notch 141, that is adapted to engage the end of the lever 135. When the end of the lever 135 is in engagement with this notch, the bar 131 is drawn down by the spring until the projection on the bar comes into the path of the revolving fan and stops it. When the end of the lever is raised out of the notch 141 and bears upon the periphery of the disk 139, the bar 131 is raised so that the projection thereon is out of the path of the revolving fan.

A shaft 143 is mounted in bearings in the casing, and is provided at the outside thereof with a suitable handle 145, by which it may

be rotated. At its inner end this shaft is provided with a collar 147, having a projection or lug 149. A sleeve 151 surrounds the shaft 143, and is provided with a collar 153, having a projection 155, that extends over the outside of the collar 147. Both the sleeve 151 and the shaft 143 are slotted, the slot being of tapering or wedge shape and of sufficient size to permit a small coin to drop through both the sleeve and shaft, while a coin of the desired size may be retained therein and will lock the shaft and sleeve together. A suitable coin-conduit 157 is arranged to guide the coin into the slot in the sleeve and shaft. The sleeve 151 has pivoted to it a dog or pawl 159. This dog turns freely in one direction, but is prevented from turning in the other direction beyond a predetermined point by a shoulder or lug that strikes on the sleeve. The parts being in the normal position shown in the drawings, if there is no coin in the slot it will be impossible to turn the sleeve in one direction by turning the shaft, as the lug 149 will move away from the lug 151 upon the sleeve. If a coin is inserted in the slot, the sleeve and shaft will turn together, and the dog 159 will pass under a projection 161 on the rod 131. When the shaft and sleeve have been given nearly a half-revolution, the coin drops out of the slot into a suitable receptacle. The dog 151 having now passed below the projection 161, the movement of the shaft 143 is reversed. The projection 149 engages the projection 155 on the sleeve and reverses the movement of the sleeve, causing it to turn with the shaft. The dog 159 engages the projection 161 and raises the sliding bar 131 and disengages the lever 135 from the notch 141. The actuating mechanism will then be released and will begin its operations. A further movement of the shaft and sleeve releases the bar 131, and as soon as the cam-shaft 105 has made a revolution the end of the lever 135 will drop into the notch in the disk 139, the bar 131 will be depressed, and will engage and stop the fly, thereby stopping the train.

I prefer, also, to provide means for removing the picture from the plate-holder after it has been completed and delivering it outside of the casing. Any suitable means may be used for this purpose. The device which I have shown, and which I prefer to use, consists, essentially, of a sliding plate 163, that is provided with an inclined forward end 165, which is arranged beneath the plate-holder when the plate-holder is in its normal position. This slide is arranged opposite an opening in the casing that is normally covered by a spring-door 167. After the picture has been completed the slide 163 moves forward, taking the picture from the plate-holder upon its inclined end 165, pushing open the door 167, and delivering the picture outside of the casing. The plate 163 is preferably operated by a slotted lever 169, that is engaged by a pin on a disk or wheel 171. This disk is arranged to be operated by a spring 173, secured to a



shaft 175, by which the spring may be wound up, and operating through suitable gears 177 179. The disk 171 is provided on its periphery with a notch. A lever 181 bears upon the periphery of the disk 171, and is adapted to engage the notch therein. The lever 181 is provided near one end thereof with a pivoted dog 183, which is adapted to be engaged by a projection 185 on the sliding bar 131. When the bar 131 is raised, the projection 185 passes freely the dog 183. When the bar 131 is lowered for the purpose of stopping the actuating mechanism as the projection 185 passes the dog 183, it raises the lever 181 out of the notch in the disk 171, and then releases said lever. As soon as the lever 181 is raised out of the notch in the disk 171 said disk will be moved by the spring 173 through the train already described, and thereby the lever 169 will be operated. The disk 171 will make a complete revolution, and will be again stopped by the lever 181. The slide 163 will by this means be projected through the door 167, and the picture may then be removed. The slide will at once be retracted and the door will close.

It will be understood that many of the devices herein described may be variously modified, or equivalents may be substituted therefor, or that any suitable actuating mechanism may be used in place of that described without departing from my invention.

I claim—

1. The combination, with a suitable camera, of a plate reservoir or receptacle arranged to deliver plates to said camera, a plate-holder arranged to receive the plates from said camera and to dip them in suitable baths, means for vibrating said holder while the plates are in said baths, and an actuating mechanism arranged to be set in motion and to operate said devices upon the introduction of a suitable coin.

2. The combination, in a machine of the class described, with the actuating mechanism and the camera, of the slide provided with a suitable opening, a spring arranged to move said slide, and mechanism controlled by said actuating mechanism for releasing said slide and returning it after it has been moved by the spring to its former position.

3. The combination, in a machine of the class described, with the actuating mechanism and the camera, of the slide 37, the spring 53, connected to said slide, a cord also connected to said slide, a lever to which said cord is connected, and a cam controlling said lever, substantially as described.

4. The combination, with a suitable camera, of a plate-holder arranged to receive plates from said camera, and a coin-controlled actuating mechanism connected with said plate-holder and adapted to carry said plate-holder to suitable baths and dip the plates therein and vibrate said holder while the plates are in said baths for the purpose of developing and fixing the pictures upon the plates, substantially as described.

5. An automatic apparatus of the class described, comprising, in combination, a plate-receiver, a camera, a plate-holder, suitable developing, washing, and fixing baths, actuating mechanism connected with said plate-receiver, said camera, and said plate-holder, means for vibrating said plate-holder while the plate carried by it is in said baths, and a coin-controlled mechanism adapted to release said actuating mechanism upon the introduction of a suitable coin.

6. The combination, with a suitable camera, of a plate-receptacle arranged to deliver plates successively to said camera, a plate-holder adapted to receive the plates from said camera after they have been exposed therein and to pass them through and vibrate them in suitable baths for the purpose of developing and fixing the picture thereon, a plate-remover adapted to remove the plates from said holder and deliver them to the outside of the inclosing casing, and actuating mechanism automatically operating said several devices in succession, and a coin-controlled mechanism adapted upon the introduction of a suitable coin to release said actuating mechanism.

7. The combination, in a machine of the class described, of a plate-reservoir, a plate-holder, a chute for guiding the plates from said reservoir to said holder, a camera, a stop arranged to hold the plate in said chute opposite said camera, a slide arranged to expose said plate, and a coin-operated mechanism controlling said devices, substantially as described.

8. The combination, in a machine of the class described, with the plate-reservoir, the camera, and the chute, of the stops projecting into said chute, a spring arranged to withdraw said stops, and mechanism controlled by a suitable cam arranged to hold said stops and to release them when they are to be withdrawn by said spring, substantially as described.

9. The combination, in a machine of the class described, with the camera, of the slide provided with a suitable opening, a spring arranged to move said slide, and mechanism controlled by a suitable cam arranged to hold said slide and to release it when it is to be moved by said spring, substantially as described.

10. In a device of the class described, the combination, with the actuating mechanism, of the plate-holder comprising the jaws pivoted together and arranged to receive the plates as they pass from the camera.

11. The combination, with the actuating mechanism, of the shaft 77, having a rotary and longitudinal movement, the shaft 63, arranged in line therewith, the friction-plates connecting said shafts, and the plate-holder carried by said shaft 63, substantially as described.

12. The combination, with the actuating mechanism, of the plate-holder connected therewith, receptacles adapted to contain the



fixing, developing, and washing materials, and stop-pins arranged to stop said plate-holder over each of said receptacles, substantially as described.

5 13. The combination, with the camera, of the plate-holder arranged to receive plates from said camera and to carry them to and vibrate them in the developing and fixing baths, and a plate-remover arranged to re-  
10 move the plates from said plate-holder and to pass them outside of the inclosing casing, substantially as described.

14. The combination, with the camera, of the plate-holder arranged to receive plates  
15 from said camera and to carry them to and vibrate them in the developing and fixing

baths, and an actuating mechanism arranged to operate said plate-holder, adapted to be set in motion upon the introduction of a suitable coin.

20 15. The combination, with the camera, of a plate-holder arranged to receive plates from said camera and carry them to and move them up and down in the developing and fixing baths, and mechanism for operating said  
25 plate-holder, substantially as described.

In testimony whereof I have hereunto set my hand.

EDMUND G. FISHER.

In presence of—

BESSIE BOOTH,

A. C. PAUL.