

I. L. PARK.  
TOWEL SUPPLY DEVICE.  
APPLICATION FILED APR. 8, 1909.

979,029.

Patented Dec. 20, 1910.

4 SHEETS—SHEET 1.

Fig. 5.

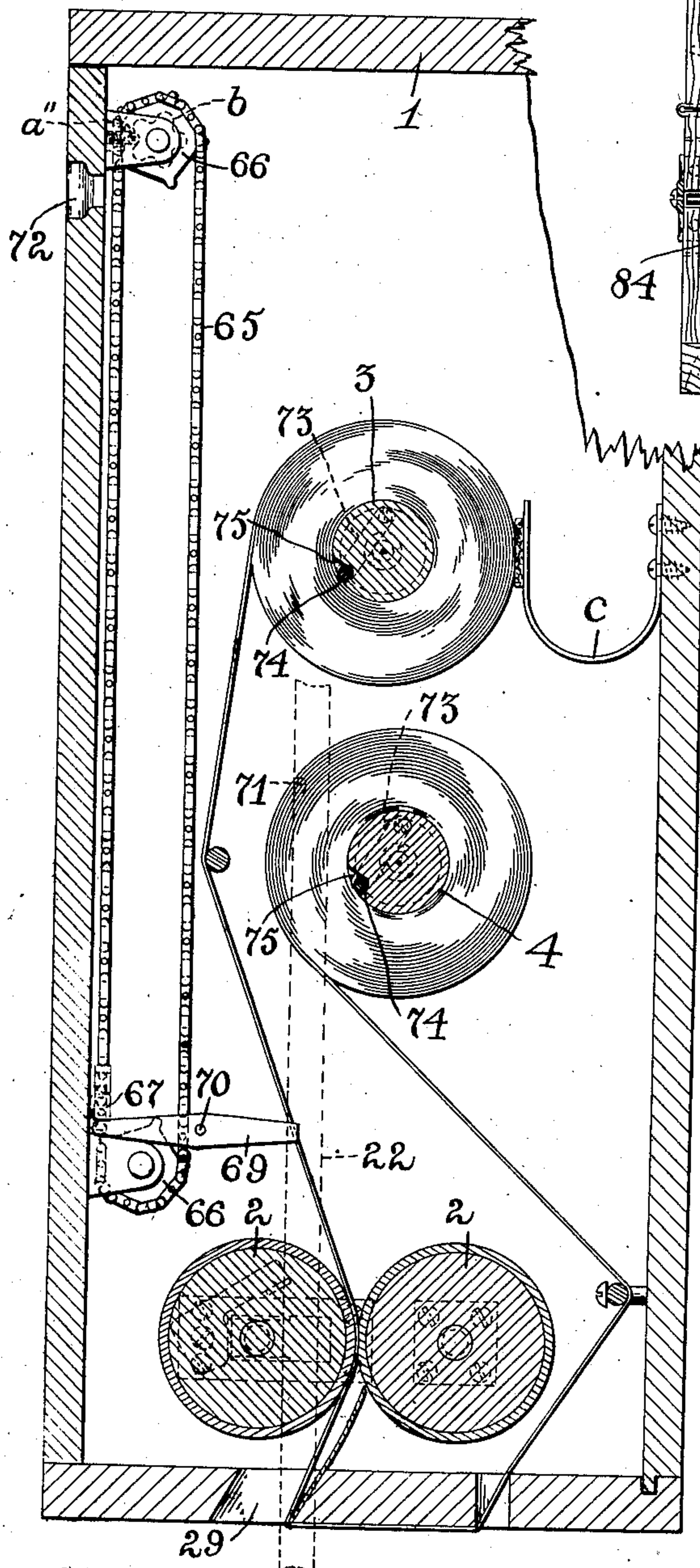


Fig. 6.

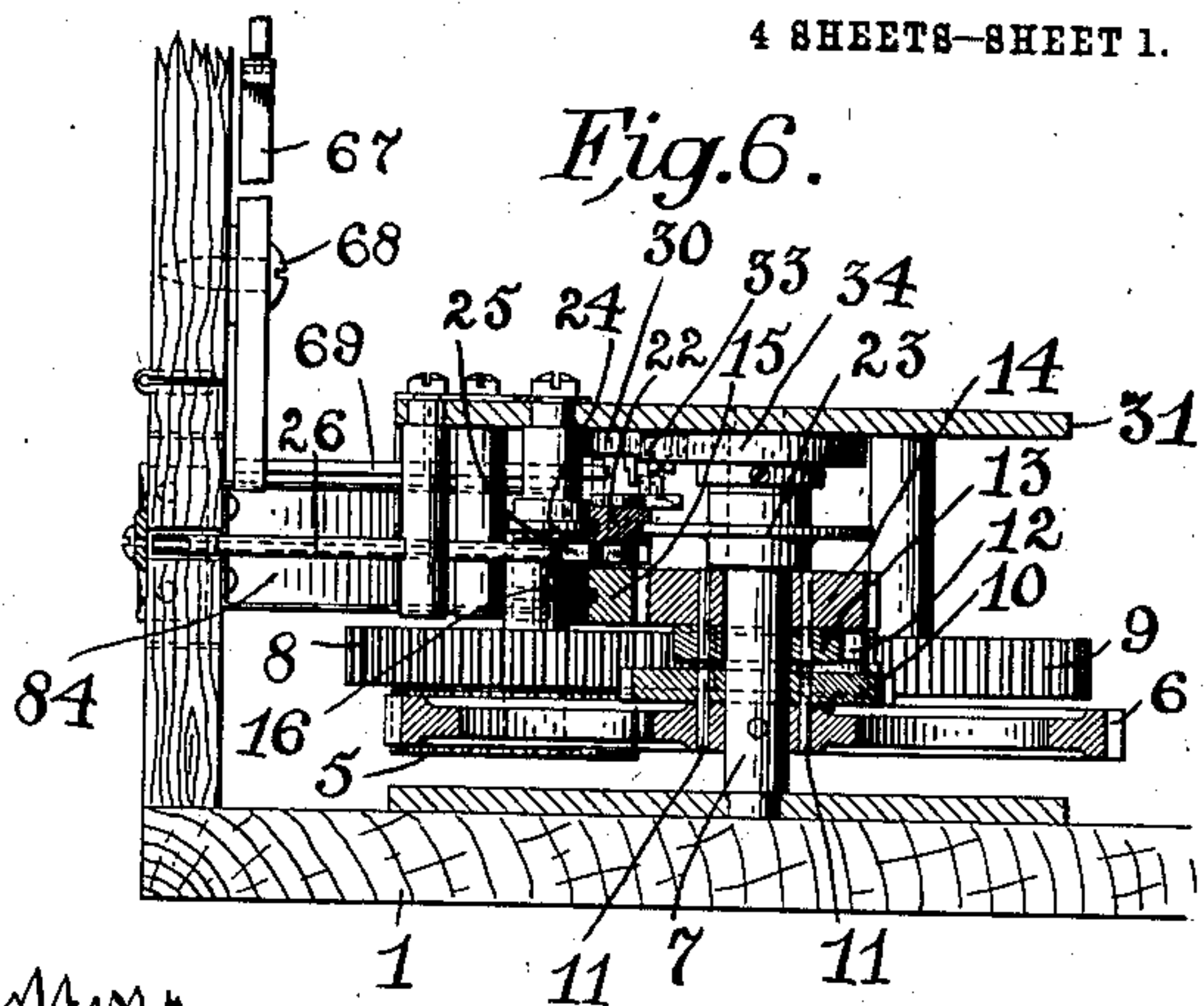


Fig. 1.

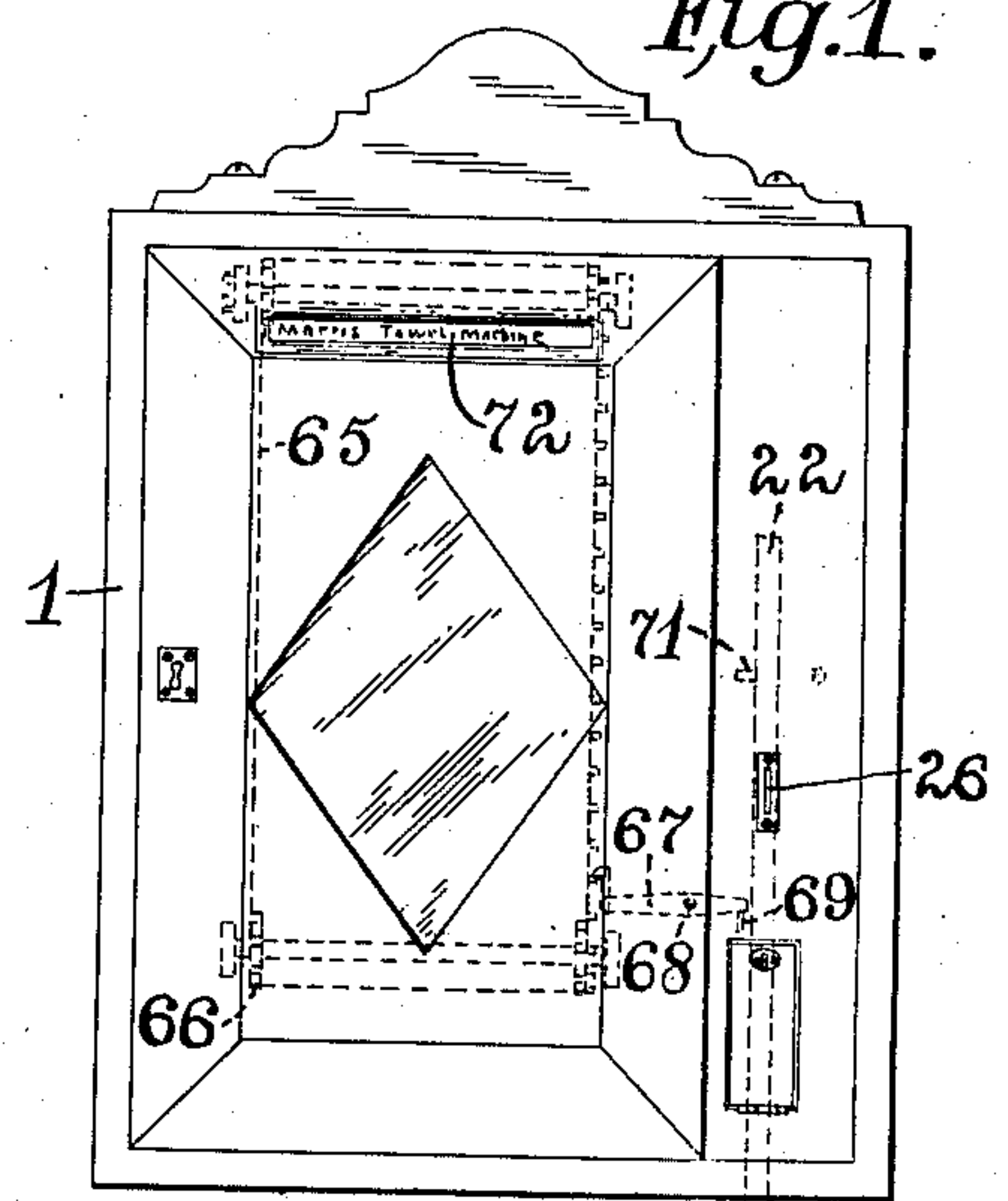
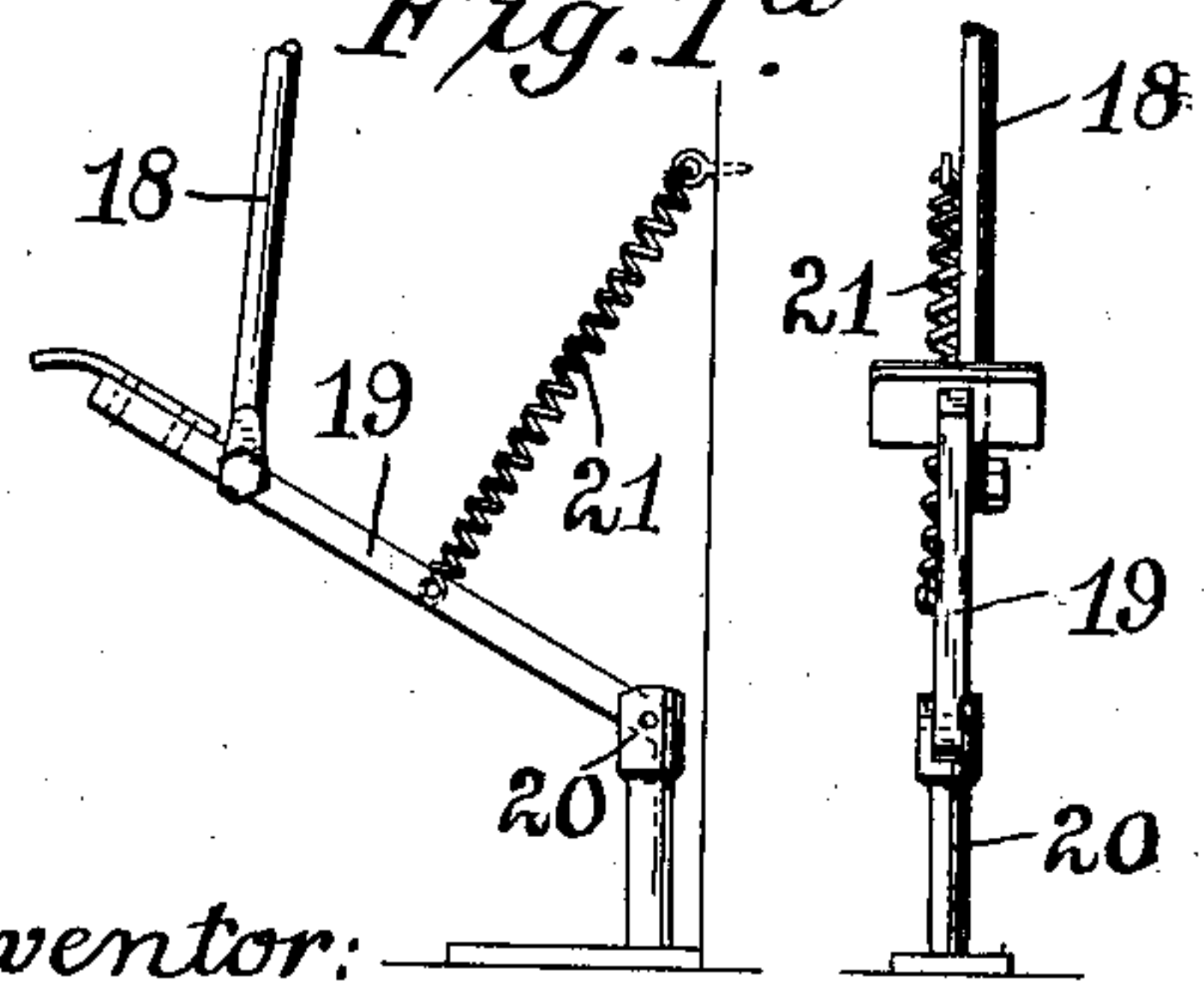


Fig. 1<sup>a</sup>.



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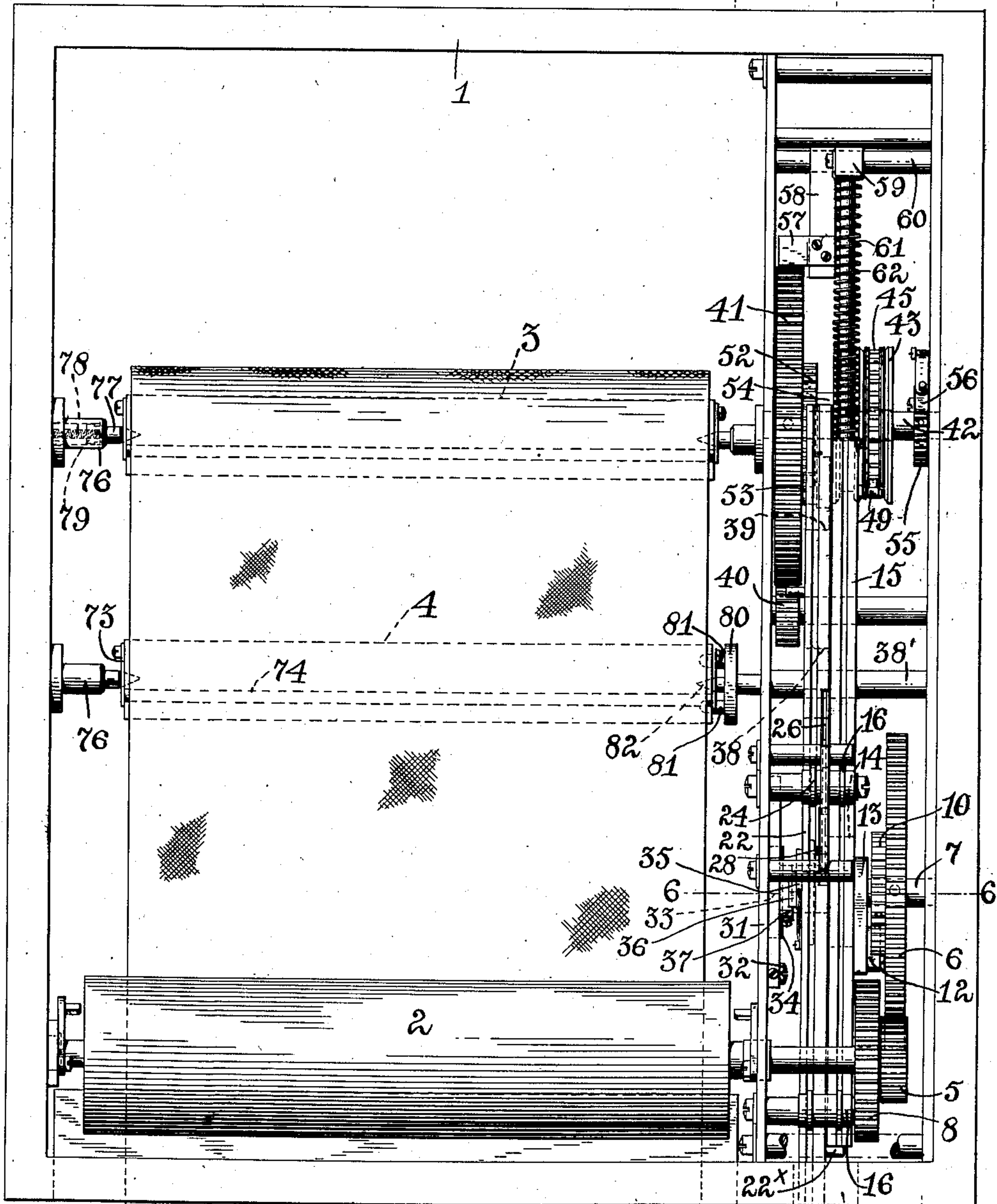
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4 SHEETS-SHEET 2.

Fig. 2.



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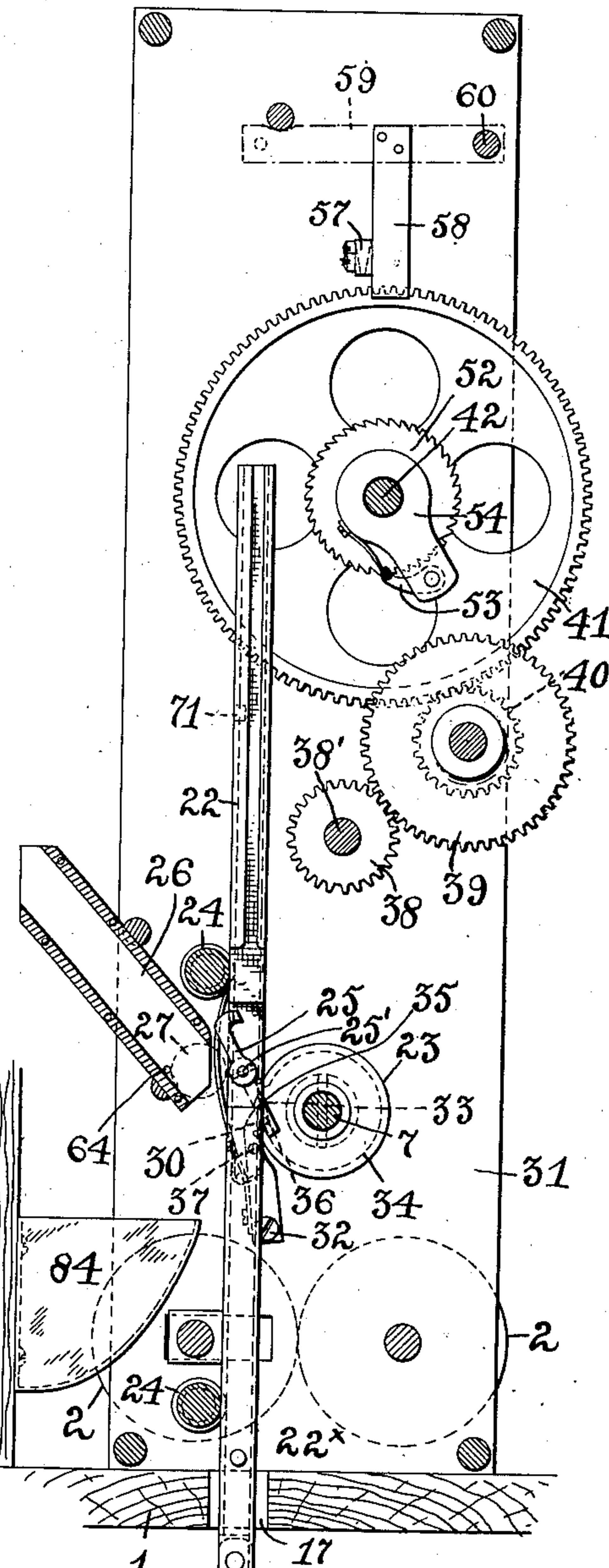
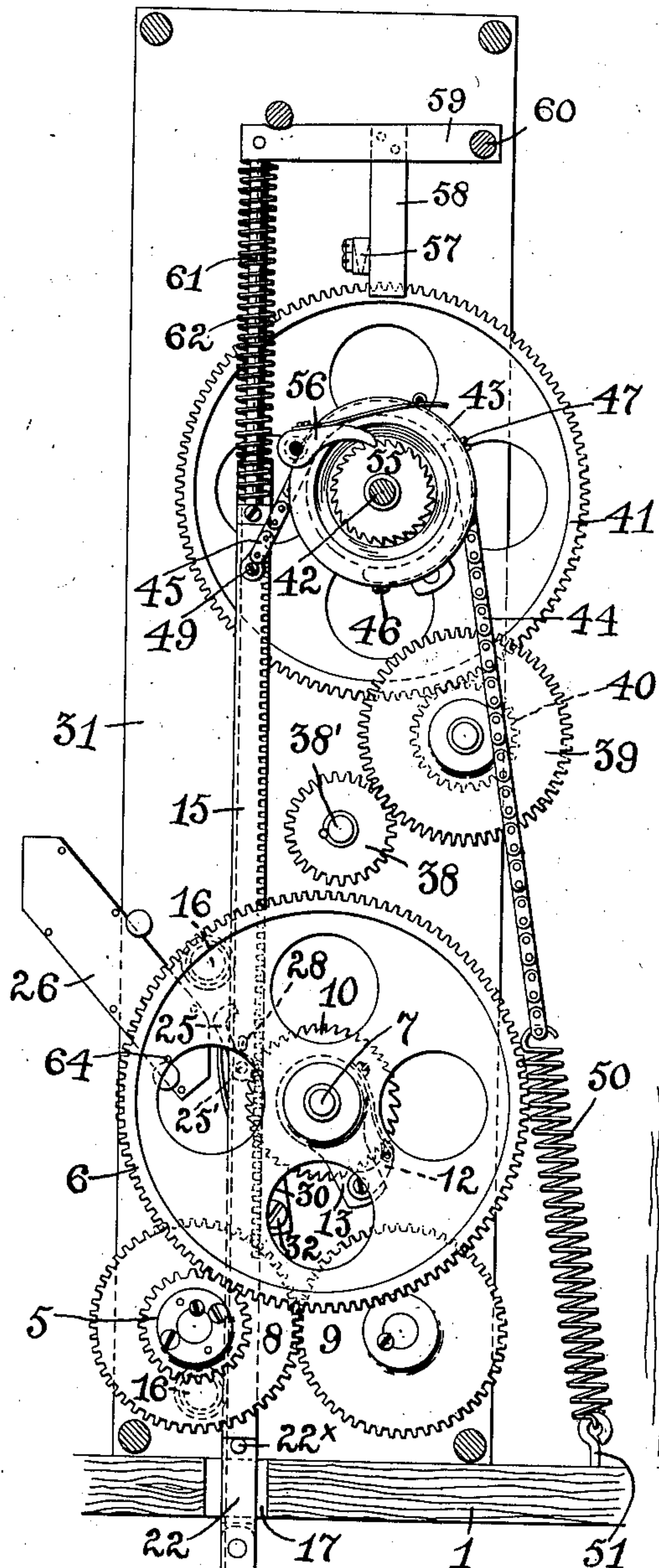
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4 SHEETS—SHEET 3.

Fig. 3.

Fig. 4.



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4 SHEETS—SHEET 4.

Fig. 7.

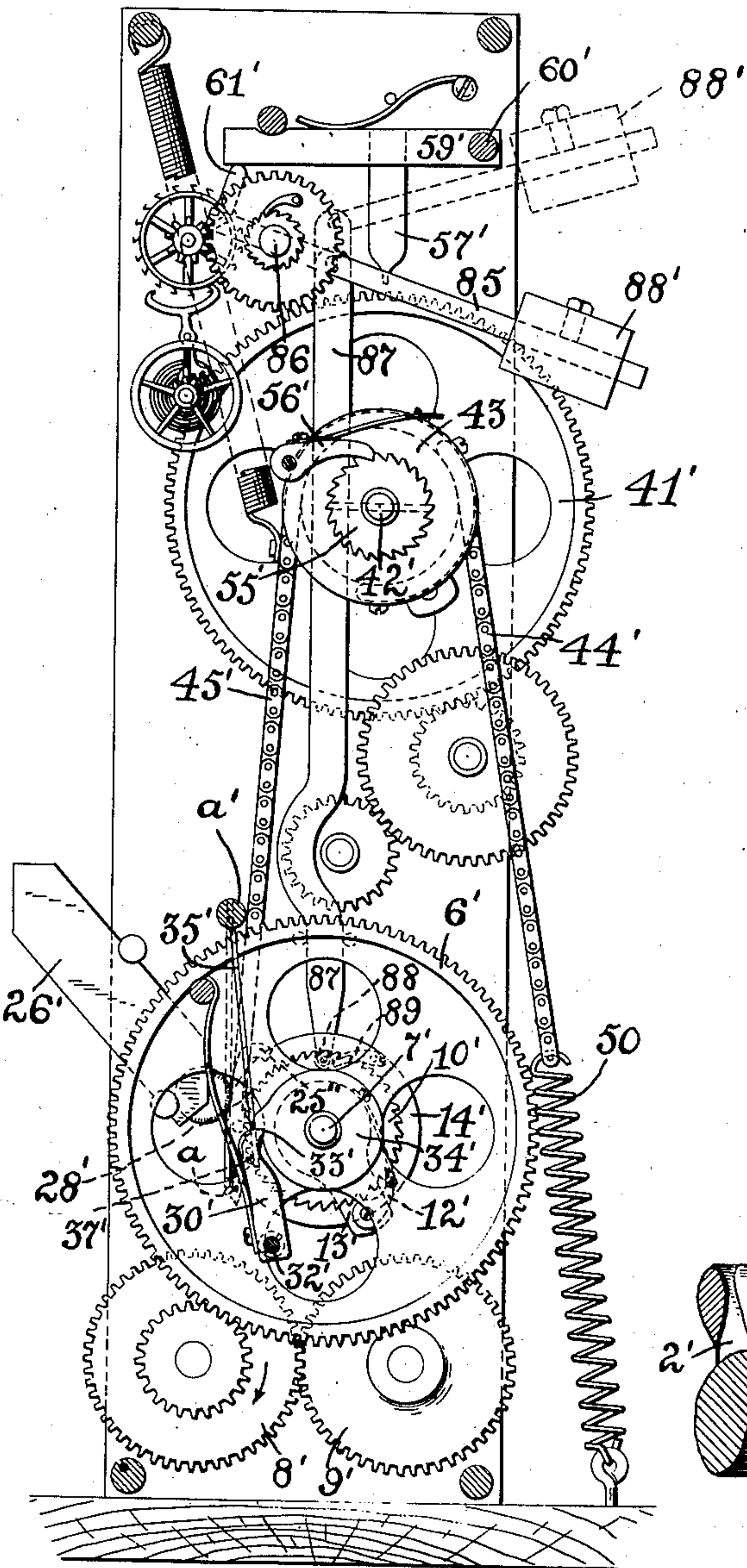
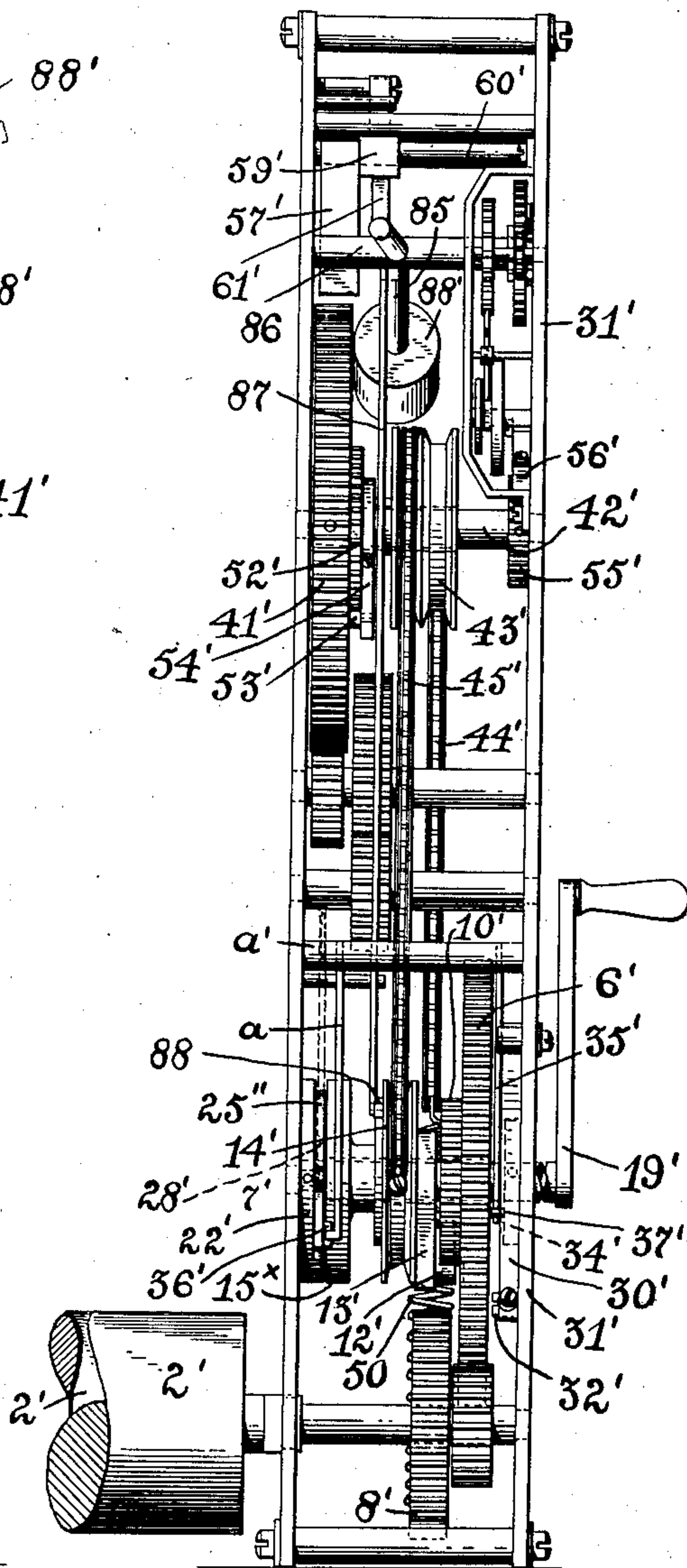


Fig. 8.



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# UNITED STATES PATENT OFFICE.

IRA L. PARK, OF FAIRFAX COUNTY, VIRGINIA, ASSIGNOR OF ONE-HALF TO CARRIE B. MORRIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

## TOWEL-SUPPLY DEVICE.

979,029.

Specification of Letters Patent.

Patented Dec. 20, 1910.

Application filed April 8, 1909. Serial No. 488,777.

*To all whom it may concern:*

Be it known that I, IRA L. PARK, citizen of the United States, residing in Fairfax county, Virginia, have invented certain new and useful Improvements in Towel-Supply Devices, of which the following is a specification.

My invention relates to coin controlled apparatus for supplying towels or a length of towel, and it consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a front view of an apparatus embodying my invention; Fig. 1<sup>a</sup> is a detail view of treadle operating mechanism. Fig. 2 is an enlarged detail front view with the front wall of the apparatus omitted; Fig. 3 is a vertical sectional view substantially on the line 3—3 of Fig. 2; Fig. 4 is a vertical sectional view substantially on the line 4—4 of Fig. 2; Fig. 5 is a vertical sectional view substantially on the line 5—5 of Fig. 2; Fig. 6 is a sectional plan view substantially on the line 6—6 of Fig. 2; and Figs. 7 and 8 are views of a modified form of the apparatus.

The apparatus comprises a casing 1 having within the same a pair of rollers 2, 2, which are turned when the apparatus is operated by the introduction of a coin to eject from the casing a sufficient length of towel for use by one person. The towel is rolled or stored upon a roller 3 journaled in the casing, and the used portion of the towel is re-wound or stored upon a roller 4 also journaled within the casing, these rolls 3 and 4 being arranged one above the other, as shown in Fig. 5. The discharge rollers 2 are operated through suitable gearing consisting of the gear 5 on the shaft of one of the rollers, and a gear 6 fixed to a shaft 7 journaled in the casing. The rollers are geared together through gears 8 and 9 by which they move in unison to discharge the towel from the casing. The gear 6 has connected therewith a ratchet wheel 10 by means of pins 11, and this ratchet wheel is engaged by a pawl 12 carried by an arm 13 fixed to a gear wheel 14 which is loose on the shaft 7, and is engaged by a rack bar 15 having vertical sliding movement and guided by the said gear and by guide rollers

16, the flanges of which enter a groove in the front face of the rack bar 15. This vertically movable rack bar moves through an opening 17 in the bottom of the casing, and is connected at times, through a rod 22 with a rod 18 which, in turn, is connected with a treadle 19 pivoted to a suitable bracket 20 secured to the wall or to the floor, the treadle being normally raised by a spring 21 arranged as shown in Fig. 1. For operating the rack bar, I provide coin controlled mechanism consisting of the vertically moving bar 22 guided by an idler 23 loose on the shaft 7, and having its flange entering a groove or channel in the slide bar 22, and by an idler or roller 24, the flange of which engages a second groove on the front face of the slide bar. This slide bar carries a pawl 25 pivoted thereto. The normal position of this slide bar is shown in Figs. 3 and 4, with the pawl located adjacent to the inner discharge end of a coin chute 26, so that, when the coin indicated in dotted lines at 27 is introduced, downward pressure on the treadle will cause the pawl 25 to contact with the edge of the coin, and thus the upper end of this pawl will be swung inwardly or rearwardly to engage a pin 28 on the rack bar 15, so that the continued movement of the slide 22 will carry the rack bar 15 down with it, and thus turn the gear wheel 14, and through the arm 13 and pawl 12, the ratchet wheel 10 will be operated, carrying with it the gear 6, and this gear, through the gearing 5, 8 and 9, will turn the rolls 2, 2, in the proper direction to deliver a length of towel from the casing through the discharge opening 29 in the lower part thereof, though I do not limit myself to this particular location of the discharge opening.

Normally, the gearing just described is held locked against movement by a pawl or detent 30 pivoted to the frame plate 31 at 32, and engaging with its upper end a tooth at 33 on a disk or ratchet 34 fixed on the shaft 7. This lock will prevent the towel from being drawn out by hand by any unauthorized person exerting pressure directly thereon. As soon, however, as the slide 22 begins to operate after the introduction of a proper coin, this lock is released so that the gearing and the rollers 2, 2, are free to be operated. For this purpose the shaft 25 upon which the coin controlled pawl 25 is



mounted, extends through the slide 22, and upon the end thereof is fixed an arm 35, and this arm is provided with a projection 36 adapted to engage a projection 37 on the upper end of the pawl 30, so that, as soon as the coin controlled pawl 25 contacts with the coin and is swung rearwardly, the tail piece or arm 35 will effect the release of the detent 30 from the ratchet disk 34, and this lock being thus released, the continued movement of the slide 22 will draw upon the rack bar 15 and, through the described connections, the train of gearing will be operated to discharge the towel from the casing.

Means are provided for retracting the used portion of the towel into the casing as soon as the purchaser or person who has operated the device is through using the exposed or ejected portion of the towel. This restoring or retracting mechanism includes the winding roller 4 above described, which roller is operated through gearing 38, 39, 40, 41, from mechanism located on the shaft 42. This mechanism includes a drum 43 loosely mounted on said shaft, and grooved to receive chains 44, 45. The chain 45 is attached at 46 to the drum, and the chain 44 at 47. The other end of the chain 45 is attached to the rack bar at 49, and the other end of the chain 44 is attached to a spring 50 connected to the casing at 51.

The gear 41 is fixed on the shaft 42, and it is provided with a ratchet wheel 52 engaged by a pawl 53 on an arm 54 secured to and moving with the loose drum 43. The shaft 42 has also fixed thereto a ratchet wheel 55 engaged by a detent 56 on the frame plate, as shown in Fig. 2, and as indicated also in Fig. 3. Normally, the gear wheel 41 is free, but as soon as the apparatus is operated to discharge a length of towel therefrom, a detent 57 is thrown into engagement with the gear wheel 41 to hold it against movement. This detent is carried by an arm 58 depending from an arm 59 pivoted to the frame plate at 60. It is normally held up out of connection with the gear 41 by a rod 61 forming an extension of the rack bar 15, the said rod bearing on the under side of the lever or frame 59. As soon, however, as the rack bar begins to descend, the detent 57 is pulled downwardly to engage the gear 41 by means of a spring connection 62 between the rack bar and the frame or lever 59, the said spring surrounding the rod 61, as shown in Fig. 3. The downward movement of the rack bar will draw upon the chain 45 and turn the drum 43. In this action the pawl 53 carried by the arm 54 secured to the drum, will move rearwardly and idly over the teeth of the ratchet 52 secured to the gear wheel 41, and this gear and the train of gears leading therefrom to the re-winding or retracting roller for the wet towel will not be operated.

The rotary movement of the drum will, however, place the spring 50 under tension by stretching it out, and the downward movement of the rack bar 15 having been completed, the spring 50 will now have been placed under tension, and this tension will have been applied to the gearing 41, 40, 39, 38, through the pawl 53, the arm 54, and the ratchet 52, but this tension will not be effective to rotate this train of gearing until after the detent 57 has been released from the gear 41, and this release will not take place until the user or purchaser has completed his use of the exposed length of towel and has removed his foot from the treadle 19, whereupon the spring 21 will raise the bar 22 causing a pin 22<sup>x</sup> thereon to raise the rack bar 15 and, in the final upward movement thereof, the rod 61 will strike the frame or lever 59, raising the detent 57 from the gear wheel 41, thus allowing the spring 50 to exert its force through the loose drum, the arm 54 and pawl 53 to turn the ratchet 52, and with it the gear 41 and the train of gearing leading to the retracting or wet roll for drawing the used portion of the towel into the casing for storage therein.

I provide at 64 in the coin chute a pin designed to prevent the coin from slipping back in the chute when the pressure comes thereon from engagement with the coin.

I provide, in connection with the apparatus above described, an advertising device consisting of a chain of signs or advertisements 65 passing over sprocket wheels 66 suitably supported on the inner side of the front wall or door of the apparatus. This chain is operated by a lever 67 pivoted at 68 and having its end in contact with a second lever 69 pivoted to the frame at 70 and having its end projecting into the path of movement of a pin 71 on one of the slides, as, for instance, the slide 22, so that, in the final part of the downward movement of this slide, the lever 69 will be operated and this, through the lever 67, will operate the chain of signs to expose one of them at the opening 72. This advertising apparatus may be operated without the necessity of introducing a coin. The towel is held on the rollers by a bail consisting of the arms 73 pivoted to the rollers and having the bar 74 extending between them and adapted to lie in the groove 75 of the rollers. The rollers have spring bearings 76 at one end consisting of a casing containing a plunger 77 having a conical point to engage a corresponding socket in the end of the roller, a spring 78 being arranged in the casing and entering slightly the enlarged head 79 of the bearing pin 77. The storage roll 3 for the dry towel is perfectly free in its bearings, whereas the storage roll 4 for the wet towel is connected rigidly with the shaft 38' of the gear 38, that is, so as to turn therewith. For this purpose



the said shaft has a disk 80 having pins 81 entering sockets in the end of the roller. The disk also has a central conical bearing pin 82. The coins from the coin chute fall into a receptacle 84 after they have performed their service.

In Figs. 7 and 8 I show a modified form of my invention in which, instead of employing a foot lever and requiring the user to hold this down while he is using the towel, I employ a timing arrangement which will allow the towel to remain ejected for a specified time, at the expiration of which the timing arrangement will automatically cause the operation of the retracting or re-winding roller for retracting the exposed length of towel into the case. In this form, instead of employing the reciprocating slide 22 as the initial driving element, I employ a disk 22' fixed on a shaft 7', and this shaft is operated in any suitable manner, as by a handle 19'. The driving disk carries a pawl 25'' and, when the shaft 7' is turned and the coin has been introduced, the pawl 25'' will be swung on its pivot by contact with the coin, causing the pawl to engage a pin 28' on a disk 15' loose on the shaft 7', and this disk being connected with a drum 14', which is fixed thereto, a pawl carrier 13' will cause the pawl 12' to engage or operate the ratchet wheel 10' and, as this is connected with the gear wheel 6' loose on the shaft 7', the gears 8' and 9' will be operated to rotate the ejecting rolls 2' to discharge the towel from the casing. I provide, in this form also, means for initially locating the gearing so that it will be impossible for anyone to operate the device without introducing a coin, and for this purpose I employ the locking disk 34' engaged by a detent 30' pivoted at 32' to the frame plate 31'. This lock is released when a coin is introduced, and the handle 19' is turned by a projection 36' on the tail piece of the pawl 25'' operating an arm  $\alpha$ , which arm is attached to a shaft  $\alpha'$  having thereon a second arm 35' which engages a pin 37' on the detent 30', so that, as soon as the coin is introduced and the handle turned, the lock will be released.

In order to place the re-winding mechanism under tension, I employ a spring 50 connected by a chain 44' to a drum 43' loose on a shaft 42' in a manner substantially similar to that before described, the said drum being connected by a chain 45' with the main driver through the drum 14' to which the lower end of the chain 45' is connected. On the same shaft 42' with the chain drum 43' is fixed the gear 41', which, through gearing similar to that before described, is connected with the re-winding roller. The gear 41' has fixedly connected therewith a ratchet wheel 52' engaged by a pawl 53' on a pawl carrier 54' connected with the drum 43'. On the shaft 42' a

ratchet wheel 55' is fixed, which is normally engaged by a detent 56' on the frame 31'. As soon as the device is operated, a detent 57' is thrown into connection with the retracting gear 41', the said detent being carried by a frame 59' pivoted at 60' to the main frame. This detent is normally held raised from the retracting gear 41' by an arm 61' of a lever 85 mounted on a shaft 86 journaled in the frame. This lever has connected thereto a rod 87, the lower end of which is provided with a roller 88 to be engaged and lifted by a cam 89 on the drum 14', and when so lifted upon the operation of the handle 19 and the rotation of the drum, the lever 85 will be turned to throw down the arm 61' and allow the detent 57' to engage the retracting gear 41' and hold it in position while the spring 50 is being strained and while the pawl 53' is running back over the ratchet 52' to get in position thereon for advancing the said pawl and ratchet, together with the gear wheel, when the detent 57' is released and the spring 50 is allowed to exert its force.

For determining the interval of time between the ejection of the length of towel and its retraction, I provide a timing apparatus which will retard the return of the lever 85 to the normal position shown in Fig. 7. This lever is provided with a weight 88' which will return the lever, but its return will be retarded by a clockwork mechanism illustrated generally in Fig. 7, which clockwork mechanism may be of any suitable construction, the one shown being representative of any device suitable for the purpose. Any sort of retarding mechanism may be employed in place of the clockwork mechanism shown, such, for instance, as a fan. It will require a definite length of time for the lever 85 to fall from its elevated position shown in dotted lines to that shown in full lines, and during this time the length of towel will remain ejected for use. As soon, however, as the weighted lever 85 returns to normal position, the arm 61' will strike and lift the frame 59', thus elevating the detent 57' from the gear 41' and allowing said gear to be fully under the influence of the spring 50, the force of which will be applied to the retracting gear 41' through the pawl and ratchet described, thus rotating this gear and re-winding or retracting the length of towel into the case. The cam 89 is pivoted and, on the forward movement, it passes under the roller 88 and lifts the same, but, on the backward movement, it slips over the said roller.

I do not limit myself to redrawing the towel into the same compartment with the main storage roller, nor do I wish to limit myself to rollers as the means of storing the towels, nor to coin operated mechanism, nor to the particular forms of mechanism illus-



trated for carrying out my invention, as these may be varied without departing from the spirit thereof.

I place a finder consisting of a spring pin *a''* and a toothed wheel *b* in connection with the advertising mechanism, as shown in Fig. 5, so as to center the advertising cards in relation to the display opening 72. I employ a detent consisting of a spring member *c* to bear upon the towel roll for preventing undue movement thereof.

I do not wish to limit myself to the use of coin-freed mechanism in connection with the means for making the towel protrude or withdrawing it. An important advantage arises from the use of my invention in that the towel is used systematically by exposing successive portions thereof, and this advantage accrues whether coin-freed mechanism is employed or any other mechanism which will serve the purpose of projecting a portion of the towel and then withdrawing it.

I claim as my invention:—

1. A towel supply device consisting of a casing, a continuous towel therein to be exposed in sections, ejecting means for making a portion of the towel protrude from the casing, and retracting or withdrawing means operative while the ejecting means is inoperative for restoring the ejected portion of the towel and placing out of service the entire towel, substantially as described.

2. In combination a casing, a continuous towel therein to be exposed in sections, ejecting means for making a portion of the towel protrude from the casing in the form of a loop, and means operative while the ejecting means is inoperative for withdrawing the towel from its point of use and placing out of service the entire towel, substantially as described.

3. In combination a casing, a pair of rollers having the ends of the towel attached thereto, ejecting rollers for making intermediate portions of the towel protrude from the casing, and automatically operating means for turning one of the rollers connected with the end of the towel after the period of use is over, said automatic means being set for operation when the towel is ejected for retracting the said towel, substantially as described.

4. In combination with a casing, a continuous towel therein to be exposed in sections, a pair of ejecting rollers to eject successive portions of the continuous towel from the casing, a storage roller for the towel, and automatically operating means for withdrawing the towel from use while the ejecting rollers remain inoperative, substantially as described.

5. In combination in a towel supply, ejecting means, retracting means, tension means for the retracting means, for operating the same after the towel has been used, said ten-

sion means being normally inoperative, means for rendering the said tension means active by the operation of the towel ejecting means, detent means for the retracting means, and releasing means for the detent means whereby the retracting means is placed under the influence of the tension means to retract the towel, substantially as described.

6. In combination a casing, towel ejecting means for ejecting the towel beyond the casing, towel retracting means to draw the exposed part back within the casing, and a power device for the retracting means with means for rendering the same active after a period of use of the towel, substantially as described.

7. In combination a casing, a continuous towel therein to be exposed in sections, ejecting means for ejecting the towel in sections beyond the casing, towel retracting means at rest when the ejecting means is operated, a power device normally inactive and connected with the retracting means, means for setting the power device for operation when the ejecting means is operated, said retracting means operating while the ejecting means is at rest, substantially as described.

8. In combination a casing, a continuous towel therein to be exposed in sections, ejecting means for ejecting the towel in sections beyond the casing, towel retracting means at rest when the ejecting means is operated, a power device normally inactive and connected with the retracting means, means for setting the power device for operation when the ejecting means is operated, a detent for holding the power device, and releasing means for the detent, substantially as described.

9. In combination a casing, a continuous towel therein to be exposed in sections, ejecting means for ejecting the towel in sections beyond the casing, towel retracting means at rest when the ejecting means is operated, a power device normally inactive and connected with the retracting means, connections between the ejecting means and the power device for setting the said device for operation when the ejecting means is operated, said retracting means operating while the ejecting means is at rest to withdraw the exposed part of the towel, substantially as described.

10. In combination towel ejecting means, towel retracting means, a spring connected with the towel retracting means, connections for placing said spring under tension, a detent for the retracting means, and a lost motion releasing device for the detent operative thereagainst after a period of movement of the parts has been accomplished, substantially as described.

11. In combination towel ejecting means, a driver therefor, towel retracting means, a



power device for the retracting means, a drum to which the power device is connected, a gear wheel, a pawl and ratchet connection between the drum and gear wheel, a  
5 detent for the gear wheel, a connection between the gear wheel and the retracting device, means for releasing the gear detent and a connection between the drum and the ejector driver, substantially as described.

10 12. In combination towel ejecting means, towel retracting means, a power device connected with the retracting means, a detent for the power device, and a device moved in one direction when the ejector means is operated, said device, on its return, operating  
15 the detent, substantially as described.

13. In combination a casing, a continuous towel therein, means for projecting successive intermediate portions of the towel and  
20 automatically operating means for withdrawing successive portions of the towel af-

ter a period of use, the withdrawing movement following immediately the use of the towel to place the entire towel out of service after each use thereof, substantially as described. 25

14. In combination in apparatus of the class described, a casing, a towel therein, means for projecting a portion of the towel through the casing for use, automatically  
30 operating means for retracting the used portion of the towel, and timing means controlling the retracting means whereby the projected portion of the towel will remain exposed for a definite period of time, substan- 35  
tially as described.

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

IRA L. PARK.

Witnesses:

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HENRY E. COOPER.