

L. H. DUPONT & T. A. KILLMAN.

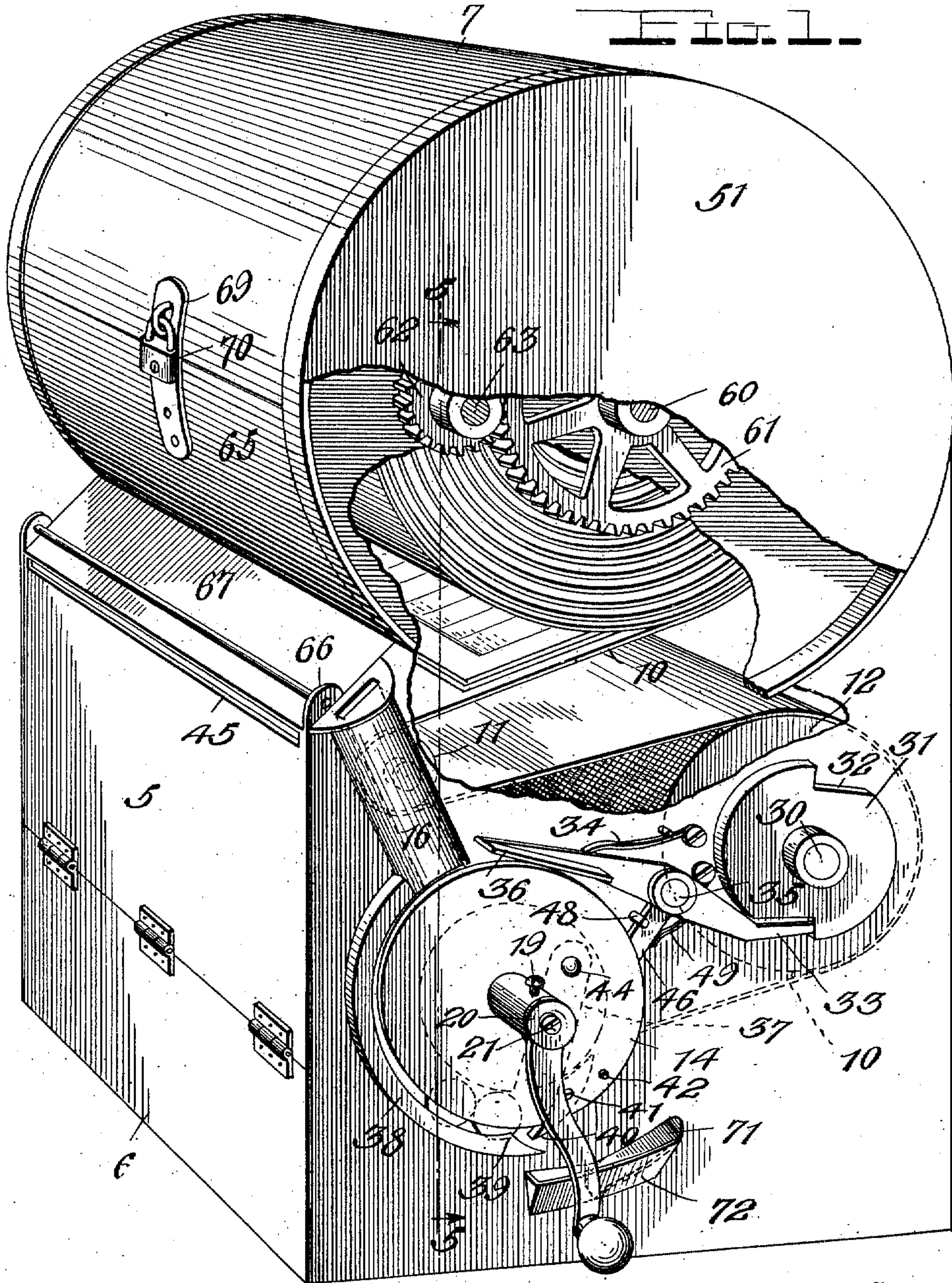
VENDING MACHINE.

APPLICATION FILED MAR. 21, 1910.

985,516.

Patented Feb. 28, 1911.

6 SHEETS-SHEET 1.



Witnesses

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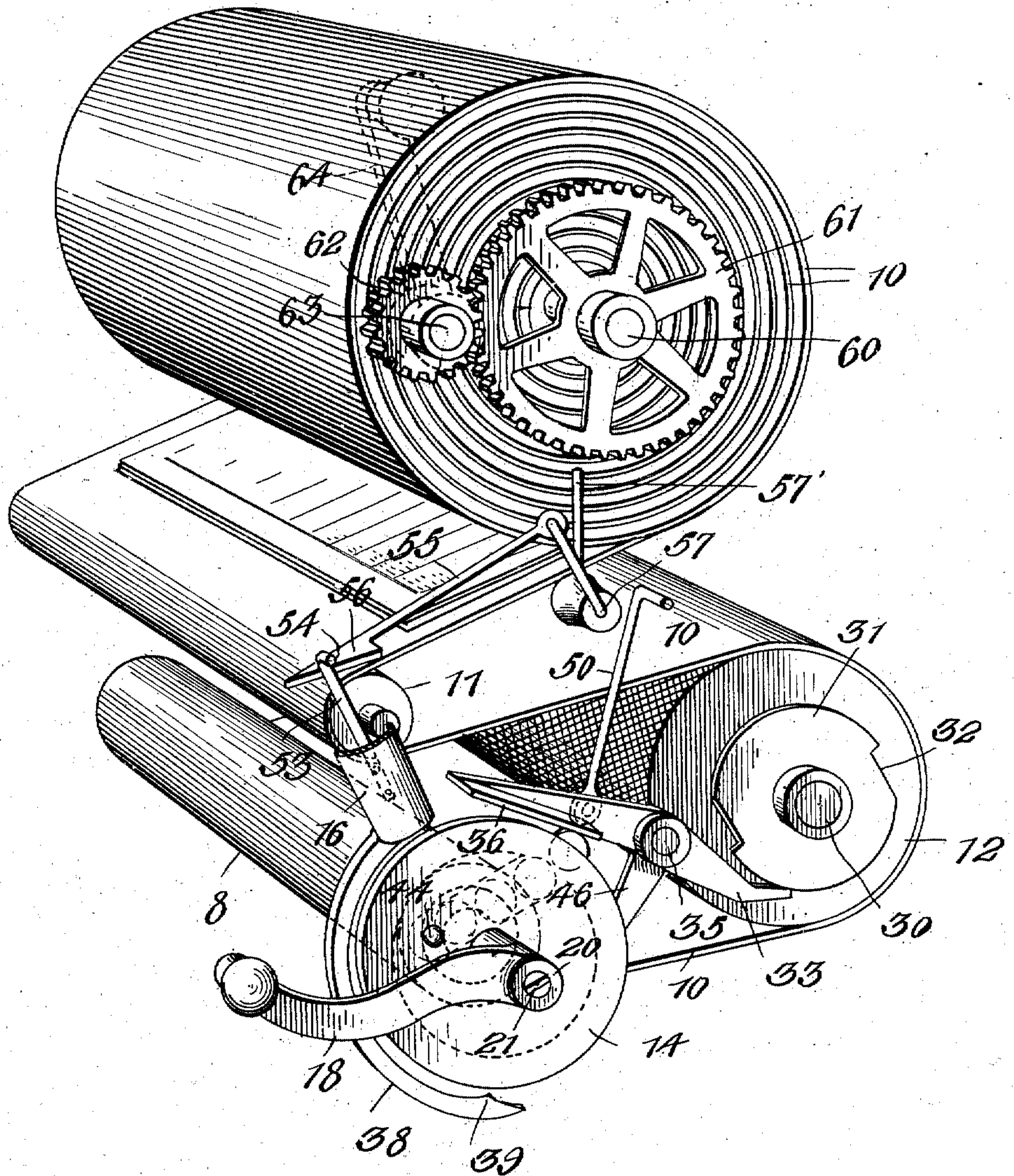
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6 SHEETS—SHEET 2.

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Fig. 2



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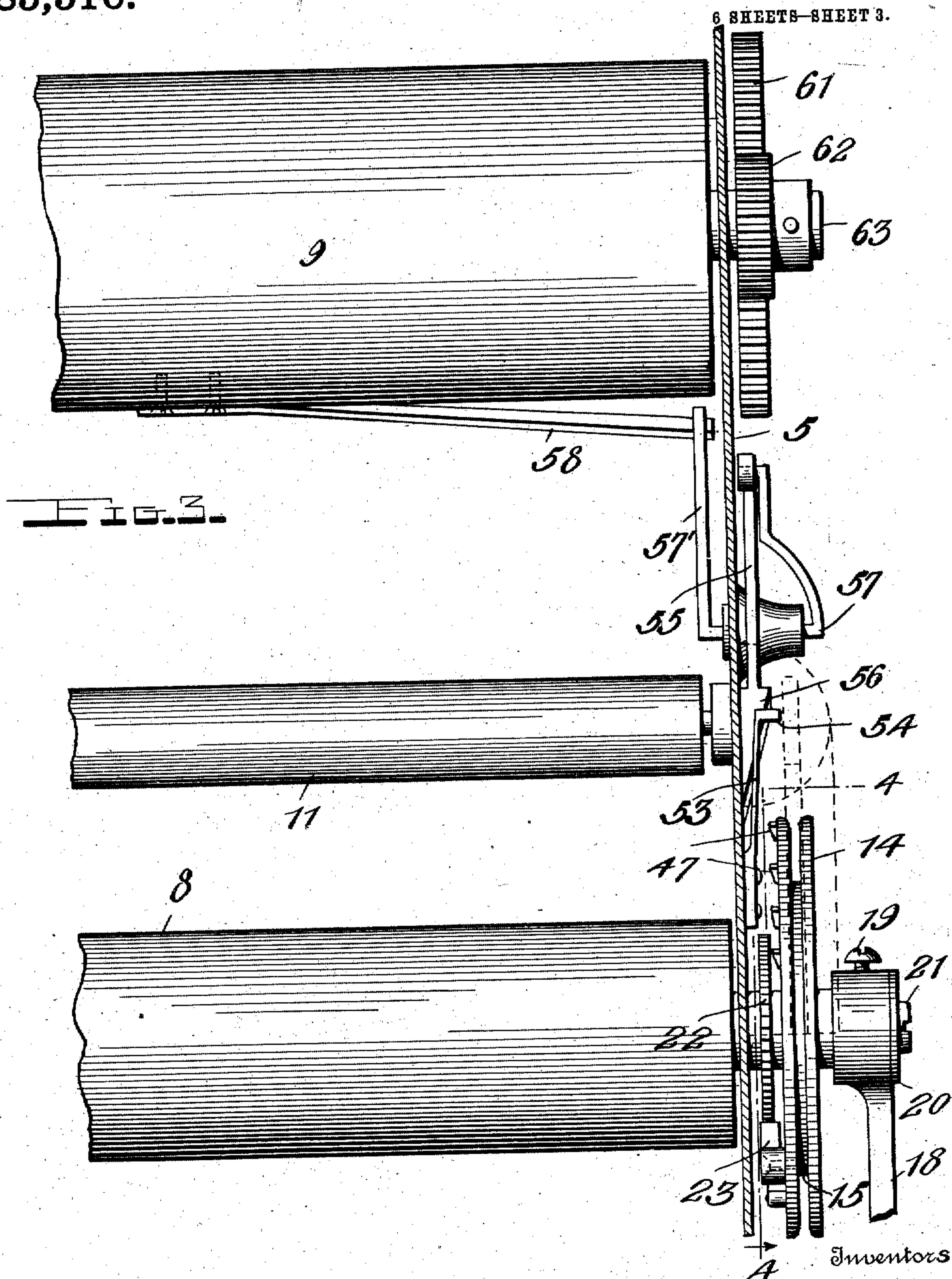
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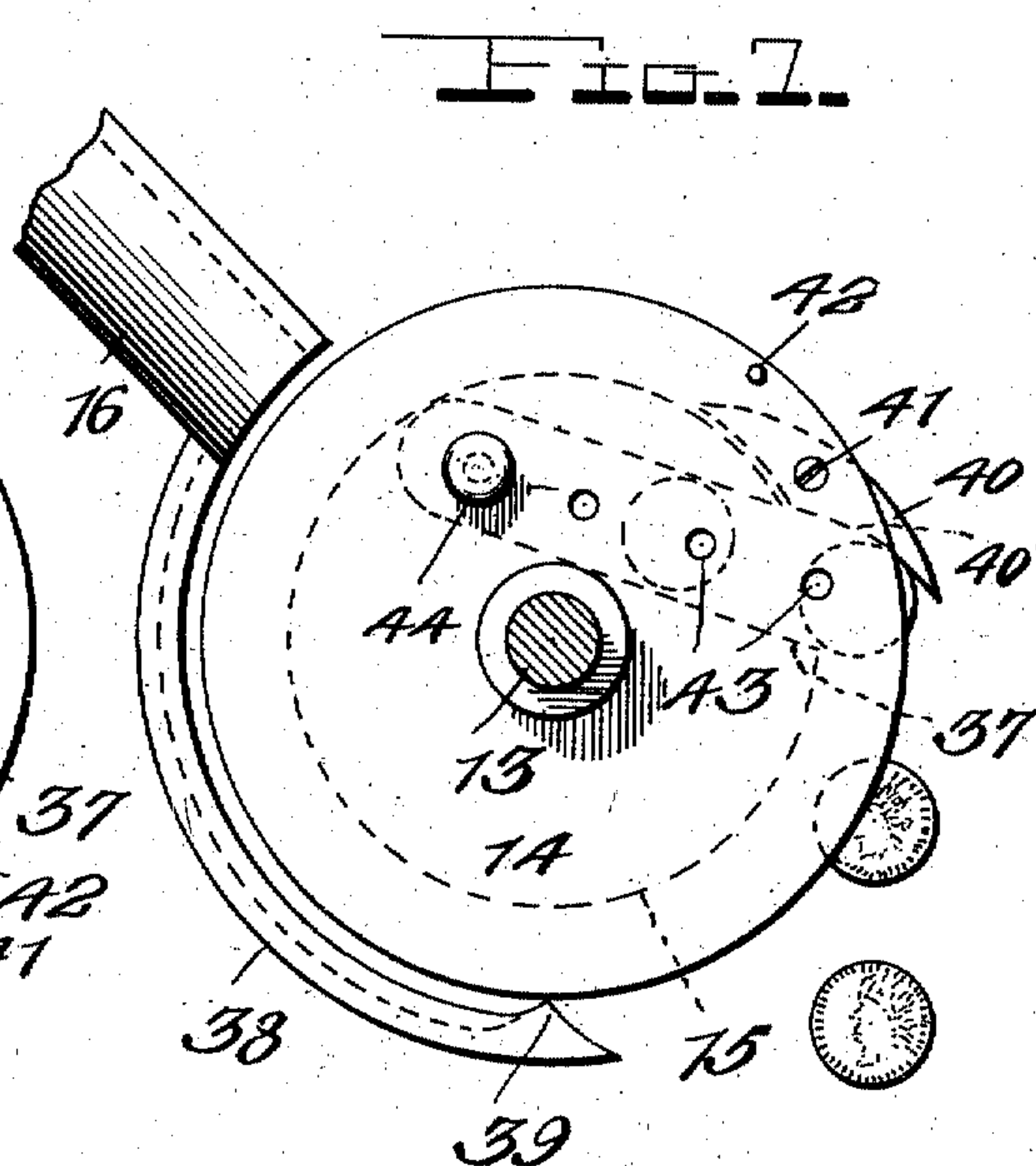
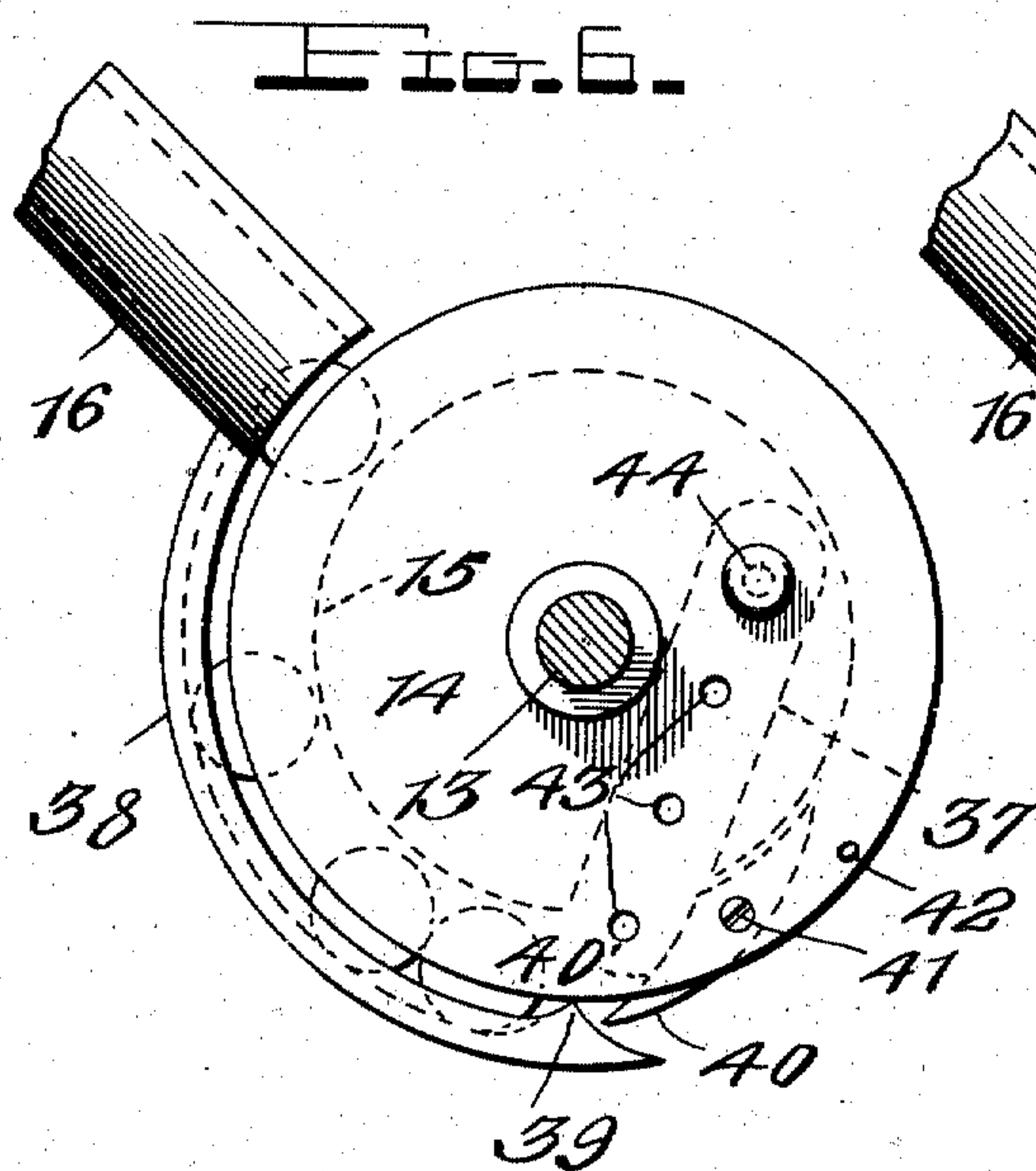
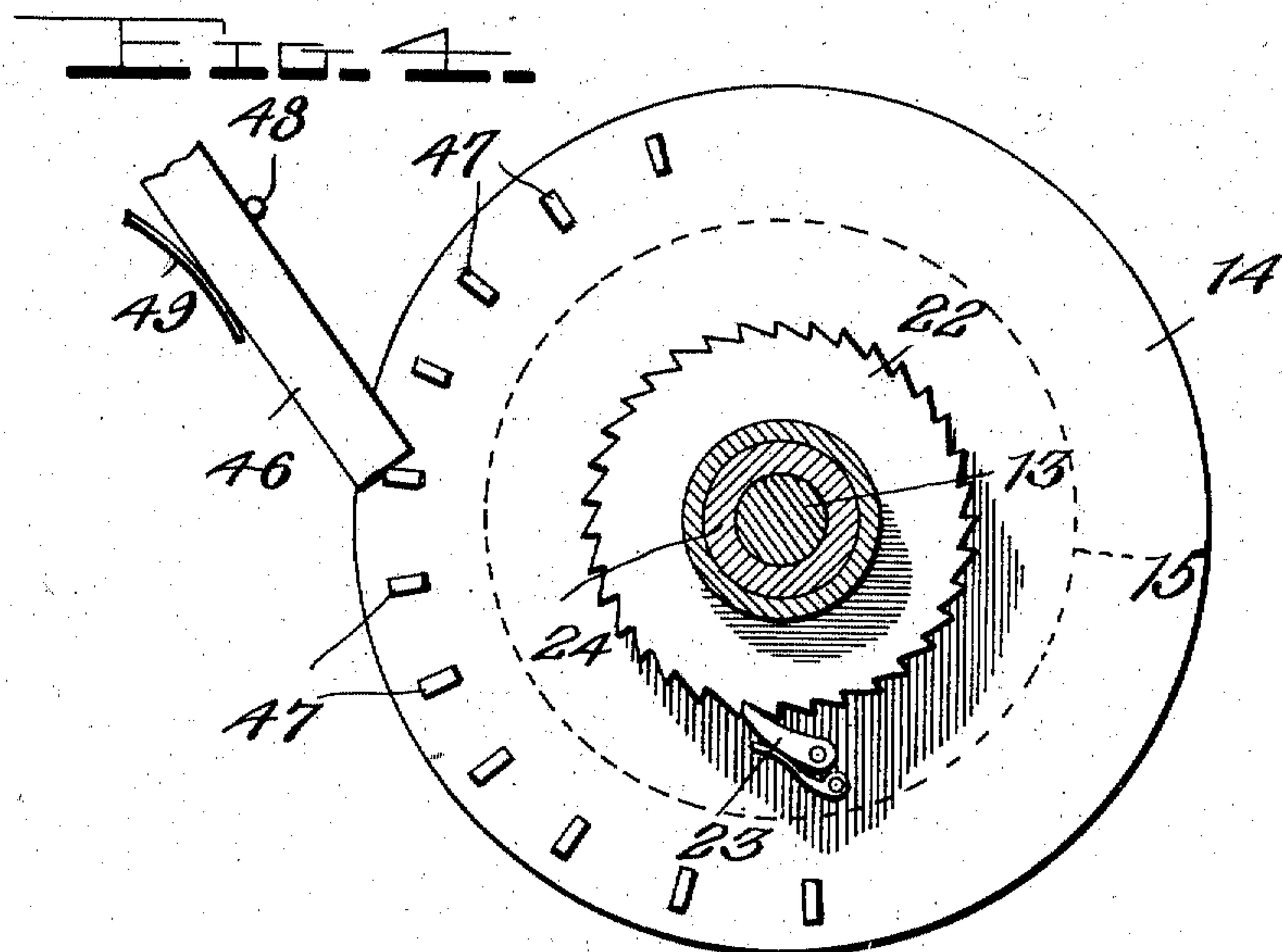
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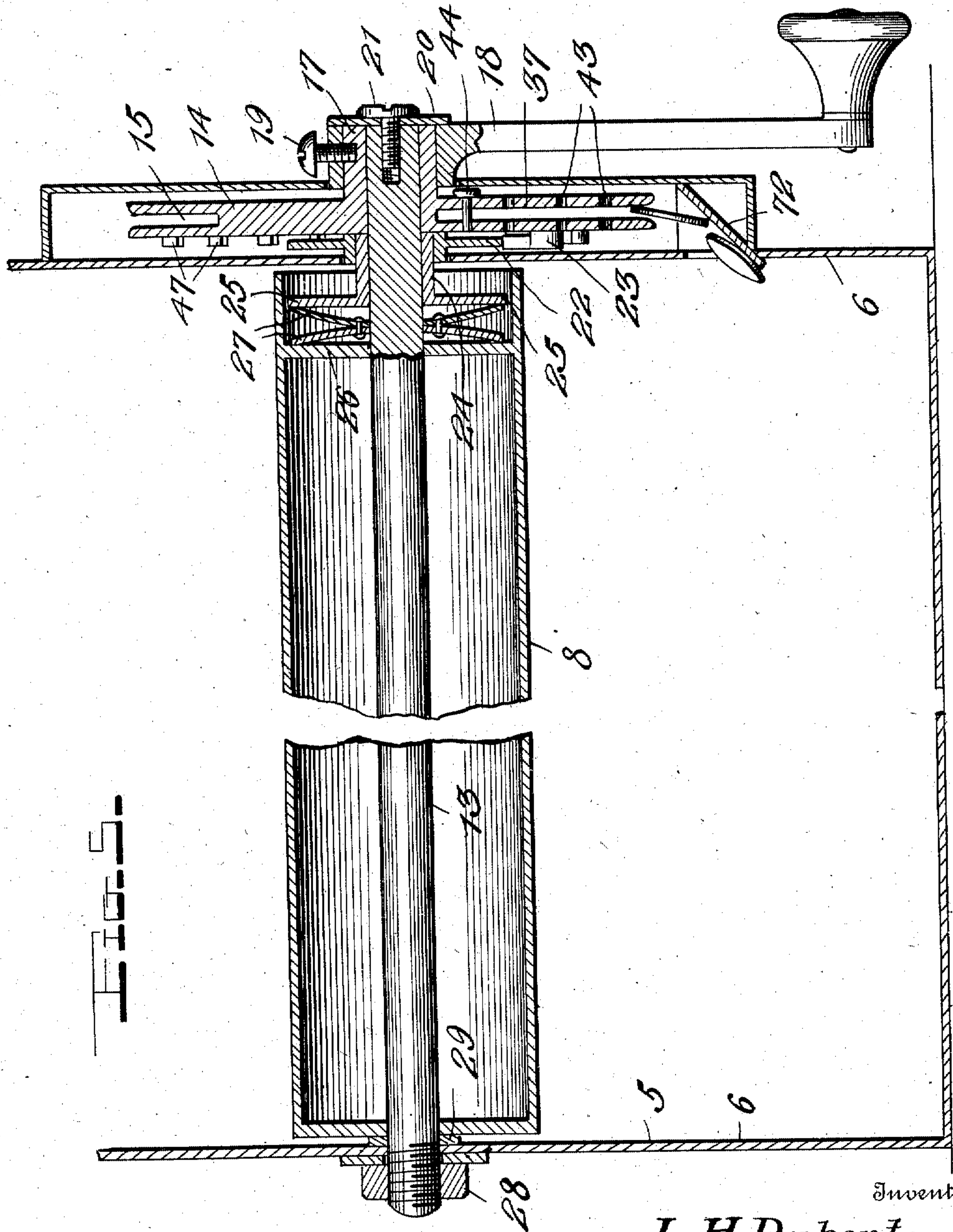
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6 SHEETS—SHEET 5.



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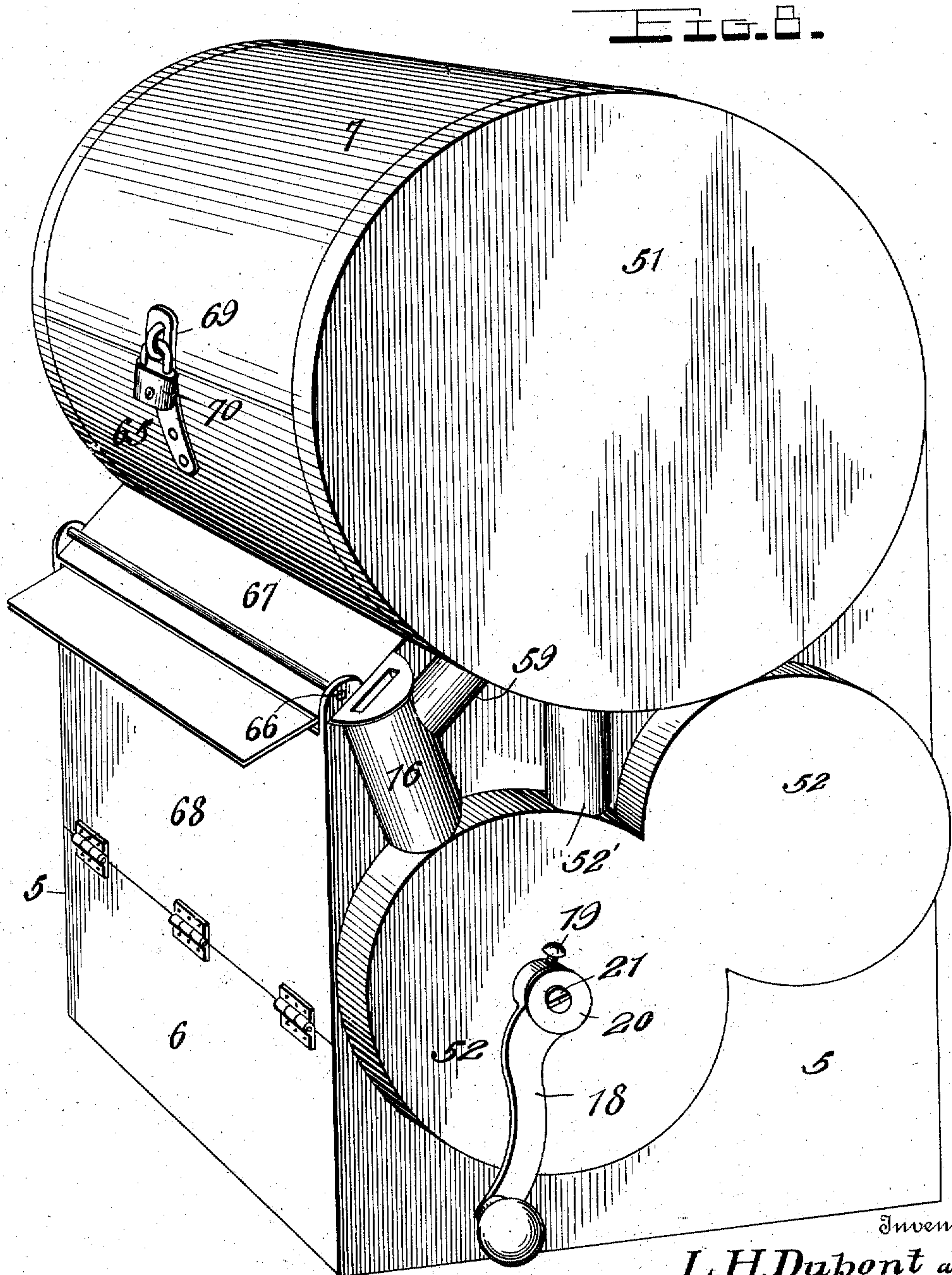
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6 SHEETS—SHEET 6.

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# UNITED STATES PATENT OFFICE.

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## VENDING-MACHINE.

985,516.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed March 21, 1910. Serial No. 550,612.

*To all whom it may concern:*

Be it known that we, LOUIS H. DUPONT and THOMAS A. KILLMAN, citizens of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to a new and novel vending machine and more particularly to a machine of this character which is primarily adapted for the vending of newspapers.

The object of our invention is to provide 15 a vending machine of comparatively simple construction which is adapted to be automatically actuated by a coin or coins to singly deliver newspapers therefrom.

Another object is to provide means for 20 preventing the operation of the delivering mechanism without the insertion of a coin or coins of the proper denomination.

A still further object is to provide a movable belt which is adapted to carry and deliver the papers, and improved means for 25 limiting the movement of said belt so that but one paper may be discharged when the proper coin or coins are inserted.

Another object is to provide suitable 30 means for preventing the insertion of coins after the machine has become exhausted.

With these and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a machine constructed in accordance with our invention; the housing of the operating mechanism being removed and the casing partly broken away; Fig. 2 is a perspective view illustrating the delivering and operating mechanism removed from the casing showing the arrangement of the parts after the 45 coins have engaged and released the oscillatory locking bars; Fig. 3 is a vertical longitudinal section through the casing and parts of the mechanism; Fig. 4 is an enlarged section taken on the line 4—4 of Fig. 3; Fig. 5 is a detail section taken on the line 5—5 of Fig. 1; Fig. 6 is a side elevation of the coin receiving wheel; Fig. 7 is a similar view showing the position of the wheel after 55 the coins have released the locking bar; and

Fig. 8 is an exterior perspective view of the machine.

Referring in detail to the accompanying drawings 5 indicates the casing in which the mechanism of our machine is arranged. This casing is preferably constructed in the form 60 shown in the drawings and comprises a lower substantially rectangular body portion 6 and the upper cylindrical portion 7 which forms a housing for the paper carrying roller and is of sufficient diameter to permit of said roller carrying a large number of newspapers. The manner of charging the machine and arranging the papers for successive delivery will be more fully hereinafter set forth. 70

In carrying out the purpose of our invention we have devised a delivery mechanism of novel construction and one which is extremely simple whereby the danger of the same getting out of order is to a large extent eliminated. This mechanism comprises a plurality of rollers arranged in the relation shown. The drum 8 mounted in the sides of the lower portion 6 of the casing may for convenience be denominated the power drum, while the roller 9 which is rotatably mounted in the ends of the cylindrical housing 7 of the casing constitutes the power roller upon which the papers are carried for delivery. The drum 8 and roller 9 each have one end of a movable belt 10 secured thereto. Between the power drum and the paper roller this belt traverses the idler rollers 11 and 12, respectively, which are 90 rotatably mounted in the lower body portion of the casing and in parallel relation to the drum 8 and roller 9. The paper carrying belt extends from the power drum 8 around the idler 12, then forwardly and around the roller 11 from whence it passes around the roller 9 and to which it is secured as previously stated. It will be obvious that if papers are laid upon the moving belt 10, the belt together with the papers carried thereby will be wound upon the roller 9 and thus fed into the machine, the papers being arranged in spaced relation between the successive circular layers of the belt, the belt roll gradually increasing in diameter until it approximately fills the interior of the housing 7. It is further apparent that in order to insure success in the operation of the machine the papers must also be delivered therefrom at equal intervals so that 110



with a single operation of the machine but one paper will be delivered to the purchaser. The means whereby this result is attained will also be later set forth in detail. The operation of the delivery mechanism and the movement of the paper carrying belt is controlled by means of suitable coin actuated mechanism which is adapted to cooperate with the power drum 8 in such manner as to prevent the rotation of said drum unless the proper coin or coins are inserted. This coin actuated mechanism is arranged substantially as follows: A shaft 13 extends longitudinally through the power drum or roller 8, said drum being hollow. This shaft extends beyond the sides of the casing 5 and has loosely mounted on one end thereof a coin receiving wheel 14. This wheel is formed with a peripheral groove providing a coin raceway 15. This raceway is positioned beneath and in alinement with the lower end of the coin chute 16. The wheel 14 is also formed with a central extension 17, and a crank handle 18 is arranged thereon and is secured to said extension by means of a set screw 19. A plate 20 is arranged over the outer face of said handle and the extension 17 and is secured on the end of the shaft 12 by means of the screw 21 which has threaded engagement therein. Thus the crank handle and the coin receiving wheel are united for movement upon the end of the drum carrying shaft. The power drum 8 is also loosely mounted on the shaft 13 and is adapted for independent rotation. It is obvious, however, that in order to move the belt 10 to deliver the papers, it is necessary to have unitary movement of the coin wheel and the drum when the crank 18 is rotated. This connection we secure in the following manner: Located upon the shaft 13 and on the inner face of the coin wheel 14 there is a ratchet wheel 22. The teeth of this ratchet are adapted to be engaged by a spring held pawl 23 mounted on the face of the wheel 14. A sleeve 24 is formed with the ratchet wheel 22 and extends inwardly within the end of the hollow drum 8. Upon its end an annular flange or plate 25 is formed. Disposed within the end of the drum 8 there is a head plate or wall 26. This head plate would preferably be formed integral with the drum as shown, and the plate 25 on the end of the sleeve 24 is maintained in yielding spaced relation thereto by means of the oppositely bowed friction disks 27. These disks are loosely arranged on the shaft 13 and are united adjacent to said shaft. The periphery of one of said disks bears upon the outer face of the head wall 26 and the other of said disks engages with the circular flange 25. The frictional engagement of these disks with the wall and flange is adapted to be increased or decreased by the adjustment of a nut 28 which is threaded upon the oppo-

site end of the shaft 13. It will be obvious that as this nut is threaded inwardly upon the shaft 13, the said shaft will be drawn through the hollow drum 8 and as the ratchet 22 and flange 25 are rigidly fixed thereto, they will likewise be drawn inwardly, the flange moving into the end of the drum and forcing the bowed plates toward each other, thereby increasing the friction between said plates, the head wall 26 and the flange 25 so that when the crank is manipulated, the coin receiving wheel 14 and the drum will be simultaneously rotated to deliver the paper to the purchaser. The end of the drum 8 at the opposite side of the casing to the coin receiving mechanism is spaced from the casing wall by means of a washer 29, thereby preventing wear upon the wall of the casing. This washer may from time to time be replaced by a new one. By the construction above described the coin wheel and crank may be turned backwardly without rotating the power drum 8, but when moved in the proper direction the spring pawl 23 will engage the teeth of the ratchet 22 and lock the drum to the wheel, thereby causing the same to turn and move the belt for the delivery of the paper.

In order to prevent the fraudulent operation of the machine we provide means for locking the idler roller 12 against rotation, whereby the friction between the belt and said roller will be such as to obviate the movement of the belt therearound when the crank is turned and will cause the coin receiving wheel to move independently of the power drum 8. This locking means is adapted to be actuated by the coin or coins inserted for the purchase of a paper and which is arranged substantially as follows: The stub shaft 30 on one end of the idler roller 12 projects through the casing wall and has rigidly secured thereon a disk 31. This disk is provided at diametrically opposite points in its periphery with the notches or recesses 32. These recesses are adapted to receive the end of an oscillatory locking bar 33. This bar is pivoted intermediate of its ends, as at 35, upon the casing wall and is normally held in engagement with the periphery of the disk by means of a leaf spring 34, one end of which is secured to a stud fixed in the casing. The forward end of this locking lever extends above the periphery of the coin receiving wheel 14 and is formed with a lateral arm or plate 36. This plate 36 is adapted to be engaged by the coins carried by the wheel 14 as the crank 18 is turned, whereby the forward end of the locking lever or bar 33 will be raised and the rear end thereof moved out of the recess 32 in the disk 31 whereby the idler roller 12 may be rotated to permit of the movement of the delivery belt. The spring 34 will hold the end of the lever in engagement with the



periphery of the disk 31 until the disk has made one-half of a revolution when said lever will engage with the notch in the opposite side of the disk and again lock the roller so as to prevent continued movement of the delivery belt. In this manner the delivery of more than one paper with each operation of the machine is prevented.

The manner in which the coin or coins are carried by the wheel 14 and the means whereby said wheel may be arranged to receive one or a number of coins as the price of the paper varies, is shown in detail in Figs. 6 and 7. It will be observed that the annular groove or raceway in the periphery of the wheel communicates with an inclined recess or socket 37 into which the coins are adapted to be directed. After the coins leave the lower end of the chute 16 and are deposited in the coin raceway 15 of the wheel, they move downwardly between the base of the groove in said wheel and a guard plate or rail 38. The lower end of this guard rail is formed with a projection or stop 39 which prevents the coins from being released and deposited in the bottom of the casing. The coins remain in this position as the wheel 14 is rotated and are adapted to be picked up and directed into the inclined socket 37 by means of a gravity dog 40. This dog is secured between the walls of the groove 15 by means of the pin 41 and its pivotal movement is adapted to be limited by the base of said groove and a pin 42 which is engaged by one end thereof. As this dog 40 is brought into contact with the coins, the inner curved edge 40' thereof will be disposed against the periphery of the coin and direct the same into the socket 37. In order to adapt the coin wheel to receive different numbers of coins, we provide the same with a plurality of aligned transverse openings 43 which extend there-through upon opposite sides of the socket 37 and are adapted to receive a stop pin or screw 44. This pin 44 when in position limits the inward movement of the coins into the socket and the openings which receive this pin are so spaced that the outermost coin will always project beyond the periphery of the wheel irrespective of the number of coins which are inserted to effect an operation of the mechanism. As the crank 18 is turned, the edge of the outer coin will be engaged with the underside of the plate 36 formed upon the forward end of the locking lever 33 and will elevate this lever against the tension of the spring 34 to release the idler roller 12 so that the delivery belt may thus be moved. The friction between the coin receiving wheel 14 and the power drum 8 having been adjusted for their unitary movement, it will be obvious that after the locking lever has been released by the insertion of the proper coins, the continued movement

of the crank will cause the belt 10 to traverse the different rollers and move a single paper carried thereby from the roll of belting upon the roller 9. This paper is adapted to be extended through a slot or opening 45 in the front of the casing 5. When the locking lever is again engaged with the notch 32 of the disk 31, the added frictional resistance imparted by the roller to the movement of the belt will overcome the friction between the bowed plates 27 and the friction plate 25 and head 26 of the drum 8 so that the continued turning of the crank handle will only effect the independent rotation of the coin carrying wheel.

In order to obviate the liability of the gravity dog 40 being disposed beneath and closing the lower end of the coin chute when the crank 18 is released, we attach the crank to the tubular stem or hub of the wheel 14 in such manner that if the same is released upon the left hand side of the center of the power drum, it will drop by gravity and move the gravity dog 40 away from the lower open end of the coin chute into substantially the position indicated in Fig. 6. If, however, the handle is disposed to the right of the longitudinal center of the drum 8 when released, it will be held in such position owing to the fractional connection between the coin wheel and the power drum. To prevent the backward movement of the handle 18, we mount upon the stud 35 on which the locking lever 33 is arranged, an arm 46. This arm has pivotal movement and the free end thereof is adapted to engage with any one of a series of studs 47 formed upon the inner face of the coin wheel 14. A stop 48 is fixed in the casing wall and limits the upward movement of this arm and a leaf spring 49 is engaged therewith to insure its engagement with the studs carried by the coin wheel. In this manner all danger of the gravity dog 40 being left in a position below the coin chute, whereby the proper operation of the mechanism would be rendered impossible, is avoided. At times it may be found desirable to release the friction roll 12 so that the papers may be removed from the machine without the insertion of the coin or coins. For this purpose an arm or rod 50 is pivoted at one end to the locking lever forward of its pivotal point and extends upwardly and through an annular flange or rim formed upon a removable cap 51. The upper end of this arm is bent at an angle and is adapted to be grasped and lifted to overcome the tension of the spring 34 and disengage the locking lever from the disk 31. The belt 10 which carries the papers will then be moved around the rollers and entirely wound upon the lower power drum 8, the papers, of course, being successively removed. The idler roller 12 is preferably formed with a milled or



knurled surface to increase the friction of the same with the movable belt whereby the machine may further be rendered proof against fraudulent operation. The coin controlled operating mechanism is arranged in a housing or cover 52. This cover may either be integrally formed with the coin chute and the cap 51 or separately constructed. A cylindrical casing 52' is likewise provided between the cap 51 and the housing 52 to house the arm or rod 50.

After the locking lever has been lifted by the outermost coin carried by the wheel 14 and said wheel has been moved to the position shown in Fig. 7, the coins will gravitate outwardly and be discharged from the wheel upon a short curved plate 71 carried by the cover 52 and extending inwardly therefrom. This plate extends inwardly between the cover and the side of the casing and acts as a guide for the coins so that they are deposited upon an inclined plate 72 which extends inwardly and downwardly through an opening in the side wall of the main casing 5. The curved plate 71 is closed at its forward end and secured to the annular wall of the cover 52 whereby the liability of the coins moving beyond the opening in the wall of the casing 5 is overcome.

Means are provided whereby the insertion of coins into the coin chute 16 when the machine has become exhausted is prevented. This means comprises a spring blade or arm 53, the upper end of which is formed with a laterally extending lug 54. This lug is disposed across the coin opening in the upper end of the chute when the same is closed. We effect the automatic closing of the coin chute by providing a lever 55 formed upon its forward end with a wedge 56, said wedge having its inclined edge disposed against the resilient arm 53 and positioned between the same and the side of the casing 5. The other end of the lever 55 is connected to one of the arms of a substantially U-shaped rock shaft 57. The arms of this shaft are disposed out of alignment, as shown in Fig. 2, and when in normal position the inner arm 57' is vertically disposed and the extreme end portion only of the wedge 56 is disposed between the casing and the resilient arm 53, the lug 54 thereof being disposed inwardly and permitting of the free passage and descent of the coins in the chute 16. The inner end 57' of the rock shaft 57 is adapted to be engaged by a spring plate 58. This plate is secured at one end to the periphery of the paper carrying roller 9 and extends outwardly at an angle thereto, the free end of said plate being disposed for engagement with the vertical arm 57'. When the last of the papers have been delivered from the movable belt, this spring plate 58 contacts with the arm 57' and forces the same forwardly, thus rocking the shaft

57 in its bearing and forcing the wedge 56 forwardly between the resilient arm 53 and the casing. By this movement the lug 54 on the upper end of the arm is positioned beneath the coin slot and effectually prevents the insertion of a coin therein. Upon the reverse movement of the paper carrying roll 9, the arm 57' of the rock shaft will be again engaged by the spring plate 58 and said shaft returned to its normal position.

The contact of the wedge 56 with the arm 53 will somewhat retard the forward movement of the lever 55 and place the plate 58 under compression so that it will be in position for the engagement of the arm 57 upon the reverse rotation of the paper carrying roller. The forward disposition of the outer arm of the rock shaft 57 and the added weight and downward inclination of the lever 55 will cause the inner arm 57' to assume its normal position after the plate 58 has passed the same in the reverse movement of the roller, thus assuring the movement of the wedge to close the coin chute when the machine again becomes exhausted. The plate 58 will be closely held upon the periphery of the paper receiving roller as the carrying belt 10 is wound and accumulates thereon. A short tubular leg 59 covers and protects the movable wedge carrying rod 55 and may be secured between the cap 51 and the coin chute 16 in any preferred manner.

The paper carrying roller 9 has one of its studs 60 extending beyond the end wall of the housing 7 and has secured thereon a gear 61. This gear is adapted to mesh with a pinion 62 mounted upon a stud 63. A crank 64 is adapted to be detachably connected to the pinion 62 whereby the same may be rotated and through its engagement with the teeth of the gear 61 rotate the roller 9 to wind the belt 10 thereon. The removable cap 51 incloses the gear 61 and pinion 62 after the machine has been charged. The papers may be easily and properly placed upon the belt by opening the upper front cover 65 which is hinged, as shown at 66, and comprises an arcuate portion which forms a continuation of the housing 7 and a narrow inclined strip 67 which when the door or closure cover is open, serves as a support for the papers to be fed into the machine, the edges of the papers being disposed against the operator's body. The proper disposition of the papers upon the moving belt is secured by the engagement and disengagement of the locking lever 33 in the peripheral recesses of the disk 31. As this lever is forced into the recesses by means of the leaf spring 34, the operator places a paper upon the moving belt, the crank 64 being turned by the operator or another to assist him in charging the machine. Thus it is evident that the papers will be successively discharged through the slot 45 in the



front of the machine casing in the same manner in which they were inserted, the paper carrying belt having the same extent of movement between the peripheral notches of the disk 31. The front of the casing 5 is also closed by means of the hinged door 68 which is provided with ears upon its upper end to receive the hinge rod upon which the door 65 is mounted. This door carries a hasp 69 which is adapted to be inserted over a staple secured in the cylindrical body of the housing, said staple receiving a suitable padlock 70 by means of which the casing is securely closed and unauthorized tampering with the mechanism of the machine prevented. It will be obvious that, if desired, the idler roller 11 may also be formed with a milled surface to increase the friction upon the belt, but this is not believed to be necessary, the frictional contact between the roller 12 and the belt being amply sufficient to overcome the friction induced by the engagement of the resilient plates with the friction plate 24 carried by the coin receiving wheel and the power drum.

From the foregoing it is believed that the operation and construction of our improved vending machine will be readily understood. The mechanism is comparatively simple and the various parts are so arranged as to insure the positive delivery of a single paper upon the insertion of the proper coin or coins. The operating mechanism is also adapted to be actuated by the insertion of a nickel at which price Sunday newspapers are generally sold. The inclined socket 37 in the coin wheel being only of sufficient width to receive a copper cent, it is obvious that as the nickel is of greater diameter it will not enter entirely into said socket. When the nickel is inserted in the coin slot, it will strike in the outer open end of the socket 37 with considerable force and engage with the opposite walls of said socket at approximately its center, the gravity dog 40 assisting in holding the nickel in position until it has performed its function of lifting the oscillatory locking lever 33. It will be apparent that if found desirable, a number of coin wheels 14 may be used, said wheels each being adapted to receive coins of different denominations, so that the machine may be utilized for the vending of other articles of merchandise. During the charging of the machine, the pivoted arm 46 engaging with one of the lugs 47 on the inner face of the coin wheel 14 will hold said wheel and consequently the crank 18 against rotation, the hollow drum 8 rotating independent upon the shaft 13 as the belt is drawn therefrom. The friction rollers 11 and 12 are, of course, revolved by this movement of the belt, and owing to the friction produced by the bowed friction plates 27 between the stationary plate 25 and the rotat-

ing drum 8, the belt 10 is kept taut at all times thereby causing the same to be wrapped closely around the paper carrying roller 9 so that the belt is rendered capable of carrying a great number of papers in a comparatively contracted space.

By means of the construction above set forth, the machine may be easily charged with the papers and the means for connecting the coin controlled operating means and the power drum 8 is such that the operation of the machine without the insertion of the proper coin or coins is rendered impossible. When the attempt is made to operate the machine without inserting the proper coins, the gravity dog 40 will simply fall down until its lower end is disposed in the same plane as the periphery of the wheel whereby the dog will move beneath the forward end of the locking lever 33 without lifting the same, whereby the friction produced between the roller 12 and the belt 10 will prevent said belt from slipping while the locking lever prevents rotation of the roller.

It will be understood that we do not wish to be restricted to the exact details of construction as above set forth, but reserve the right to make such changes in the arrangement of the various elements and the form and proportions thereof as may later be deemed more desirable for the particular purpose to which the machine is to be applied.

Having thus described the invention what is claimed is:

1. In a vending machine, a flexible carrier belt, a plurality of friction rollers supporting said belt for movement in opposite directions, operating means for moving said belt, and an adjustable friction device between the operating means and one of the belt supporting rollers to connect the same for unitary movement.

2. In a vending machine, a power drum, a roller, a movable article carrying belt secured at its ends to said drum and roller, the articles to be vended being positioned between the successive layers of the belt upon said roller, friction means normally holding the belt against movement, operating means arranged at one end of the power drum, and means adjustable between the operating means and said drum for frictionally connecting the same for unitary movement to unwind said belt from the roller and deliver an article carried thereby.

3. In a vending machine, a shaft, a drum mounted on said shaft, a paper carrying roller, a belt secured at its ends to said drum and roller, the articles to be vended being positioned between the successive layers of the belt as it is wound upon the roller, means for moving said belt, means arranged between said last named means and the drum to connect the same for unitary movement,



and means for permitting the reverse independent rotation of said power drum.

4. In a vending machine, a movable article carrying belt, a plurality of friction rollers supporting said belt for movement therearound in alternate opposite directions, operating mechanism arranged at the end of one of the rollers, connecting means arranged between the roller and the operating means to connect the same for unitary movement, and means for moving said operating means longitudinally with respect to the roller to engage the connecting means with the roller and the operating means.
5. In a vending machine, a delivery mechanism comprising a power roller, a paper carrying roller, a belt secured at its ends to said rollers, means frictionally engaging said belt to normally prevent movement of the same, and operating means frictionally associated with said power roller to rotate the same in one direction and move the belt to deliver an article carried thereby.
6. In a vending machine, a shaft, a power drum loosely mounted on said shaft, a paper carrying roller, a belt secured at its ends to said drum and roller, the papers to be vended being disposed between the successive layers of the belt on said roller, operating means arranged on the drum shaft, and means longitudinally movable on said shaft to connect the drum and operating means for unitary movement to wind the belt on said drum and deliver one of the articles carried thereby.
7. In a vending machine, a shaft, a power drum loosely mounted on said shaft, a paper roller, a belt secured at its ends to said drum and roller and movable between the same, the papers to be vended being disposed between the successive layers of the belt on the roller, operating means on the drum shaft, means for moving said shaft longitudinally through the drum, and means frictionally engaging said drum and the operating means to cooperatively connect the same to move the belt and deliver one of the articles carried thereby.
8. In a vending machine, a movable article carrier, a plurality of supporting rollers for said carrier, operating means arranged at the end of one of said rollers, means disposed between said roller and the operating mechanism to frictionally connect the same for unitary movement, and means for moving the operating means longitudinally with respect to the roller to adjust the frictional connection therebetween to effect such unitary movement.
9. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a paper carrying roller on the other shaft, a flexible carrier secured at its ends to said drum and roller adapted to carry the papers to be vended, operating means fixed

on one end of the drum shaft, means for moving said shaft and operating means longitudinally with relation to the drum, and means arranged between said operating means and the drum to connect the same for unitary movement to move said paper carrier.

10. In a vending machine, parallel shafts, a power drum loosely mounted on one of said shafts, a roller, an article carrier movable between said drum and roller, operating means secured on one end of the drum shaft to intermittently move the carrier, means for moving said shaft and operating means longitudinally with relation to the drum, and means arranged between said operating means and the drum and frictionally engaging with the same whereby said drum is rotated, means for rendering said operating means inoperative when the machine is exhausted, and means carried by said roller engaging said last named means to actuate the same.

11. In a vending machine, parallel shafts, a power drum on one of said shafts, a roller on the other shaft, a flexible article carrier secured to said drum and roller and movable between the same, means frictionally engaging said carrier between the drum and roller to normally hold the same against movement, operating means arranged on the drum shaft, and means on said shaft for frictionally connecting the operating means to the drum for unitary movement.

12. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a roller on the other shaft, a paper carrying belt secured to said drum and roller and movable between the same, operating means fixed on one end of the drum shaft, a friction plate carried by said operating means, means for moving said shaft and operating means longitudinally with relation to the drum, and means on the shaft for frictionally engaging said plate and the end of the drum to connect said operating means and the drum for unitary movement to move said belt and deliver one of the articles carried thereby.

13. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a roller on the other shaft, a paper carrying belt secured to said drum and roller, operating means on the drum shaft, means on said shaft connecting said operating means and the drum for unitary movement in one direction to deliver the paper carried by the belt, and means for holding said operating means against movement and permitting the reverse rotation of the drum while the machine is being charged.

14. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a roller on the other shaft, a belt secured at its ends to said drum and roller, operating means on the drum shaft for



winding said belt on the drum, means for moving said shaft longitudinally through the drum, means arranged in one end of the drum frictionally connecting said operating means and the drum for unitary movement in one direction, means for rotating said roller to wind the belt thereon to charge the same, and means for holding said operating means against movement while the machine is being charged.

15. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a roller on the other shaft, operating means secured on one end of the drum shaft, friction disks arranged between the operating means and the drum to connect the same for unitary movement, means for moving the shaft longitudinally through the drum to increase the frictional contact of the disks with the drum and operating means, and means for holding the operating means against movement to prevent the reverse rotation of the drum when the machine is being charged.

16. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a roller on the other shaft, a delivery belt secured at its ends to said drum and roller, the articles to be vended being disposed between the successive layers of said belt on the roller, operating means on one end of the drum shaft, oppositely bowed friction plates on said shaft engaging with the operating means and the end of the drum, and means for moving the shaft longitudinally through the drum to increase the frictional engagement of said plates with the same and the operating means to connect the operating means and drum for unitary movement to deliver one of the articles carried by said belt.

17. In a vending machine, parallel shafts, a drum on one of said shafts, a roller on the other shaft, a belt secured to and movable between the drum and roller, operating means secured on one end of the drum shaft, a friction plate carried by said operating means extending into the end of the drum, a plate in one end of said drum, bowed friction disks arranged on the shaft engaging with said plates to frictionally connect the operating means and the drum for unitary movement, means for longitudinally moving the shaft and operating means to regulate the friction of said disks, and means for permitting the independent reverse rotation of the drum when the machine is being charged.

18. In a vending machine, parallel shafts, a drum loosely mounted on one of said shafts, a roller on the other shaft, a movable

article carrier secured to said drum and roller and adapted to be wound thereon, operating means on one end of the drum shaft, means arranged on said shaft frictionally connecting the operating means and the drum for unitary movement in one direction to move the carrier and deliver an article carried thereby, and means for holding said operating means stationary and permitting the reverse rotation of the drum when the machine is being charged.

19. In a vending machine, the combination with a casing, of delivery mechanism arranged therein, said mechanism comprising a drum and roller, an article carrying belt secured at its end to said drum and roller and movable between the same, a plurality of friction rollers mounted in said casing, said belt traversing the rollers, operating means frictionally connected to said drum to move the belt around said rollers in one direction and deliver an article carried thereby, and means engaging said operating means to permit the independent reverse rotation of the drum when the machine is being charged.

20. In a vending machine, the combination with a casing, of parallel shafts mounted therein, a drum loosely mounted on one of said shafts, a roller on the other shaft, a flexible article carrier secured to said drum and roller and movable between the same, means for applying friction to said carrier to normally hold the same against movement, operating means arranged on one end of the drum shaft, friction disks arranged between the operating means and the drum to connect the same for unitary movement in one direction, a nut threaded upon the other end of the shaft exteriorly of the casing, the adjustment of said nut moving the shaft longitudinally through the drum to regulate the friction of said disks, a gear secured on one end of the roller shaft, a pinion mounted in the casing meshing with said gear adapted to rotate the roller to wind the carrier thereon, and means arranged on the casing engaging with said operating means to hold the same stationary and permit reverse rotation of the drum when the carrier is wound upon said roller to charge the same.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

LOUIS H. DUPONT.  
THOMAS A. KILLMAN.

Witnesses:

W. H. HALEY,  
W. B. SHEPARD.