

(No Model.)

4 Sheets—Sheet 1.

J. A. HUNT.
VENDING MACHINE.

No. 463,054.

Patented Nov. 10, 1891.

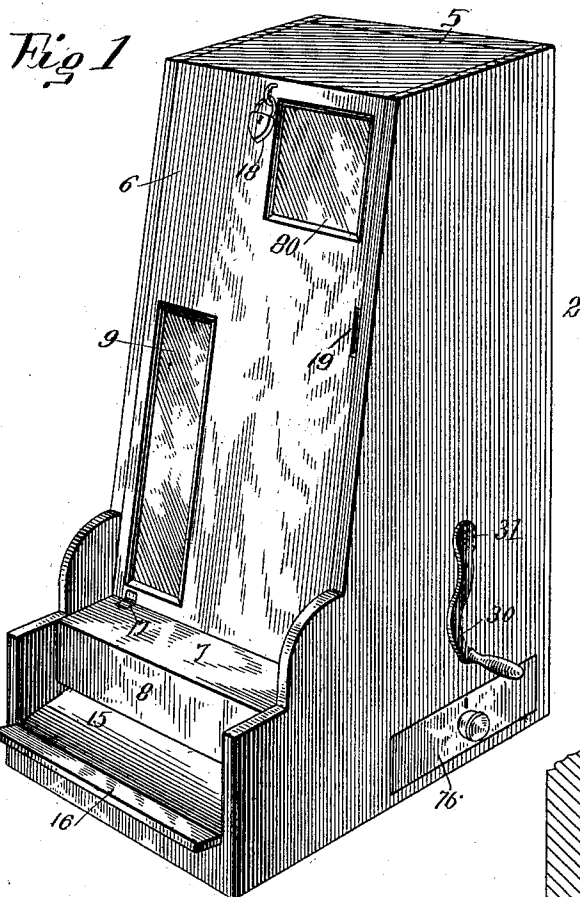


Fig 8

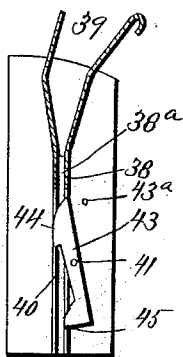


Fig 4

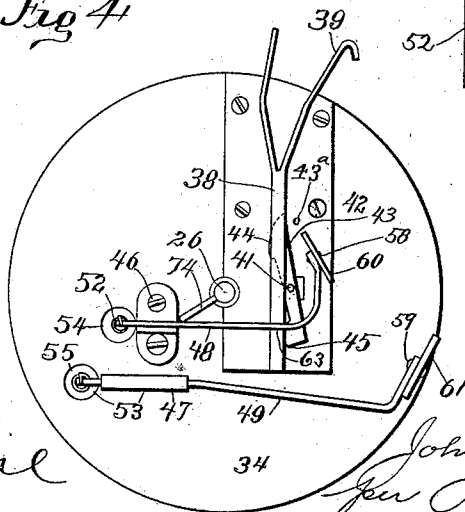
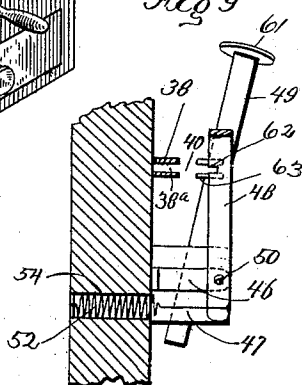


Fig 9



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Geo. L. Wheelock

Inventor
John A. Hunt
per R. L. Hunt
his Attorney

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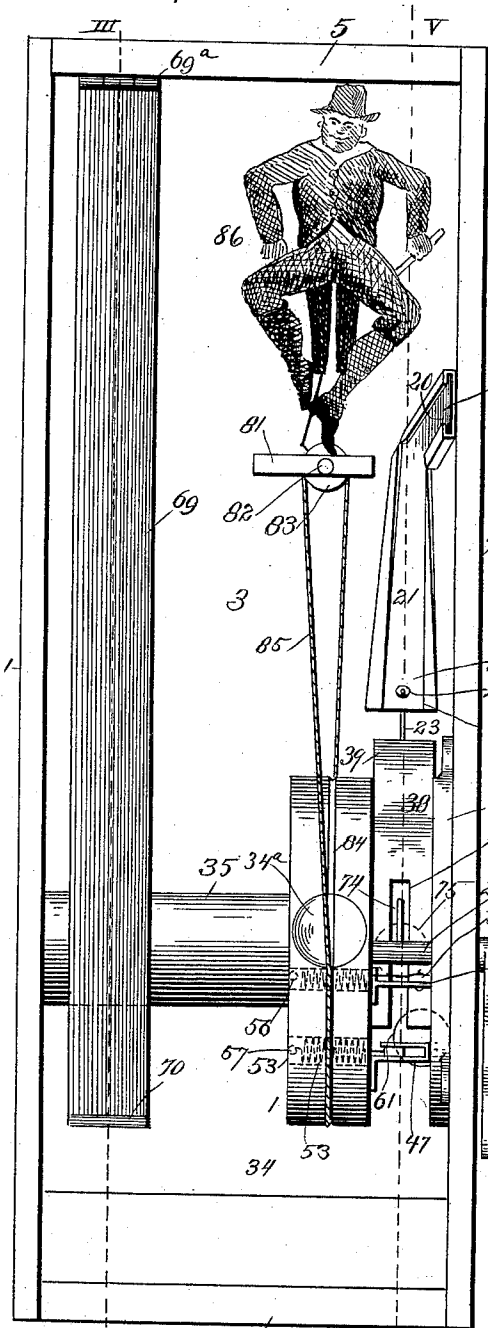


Fig. 2

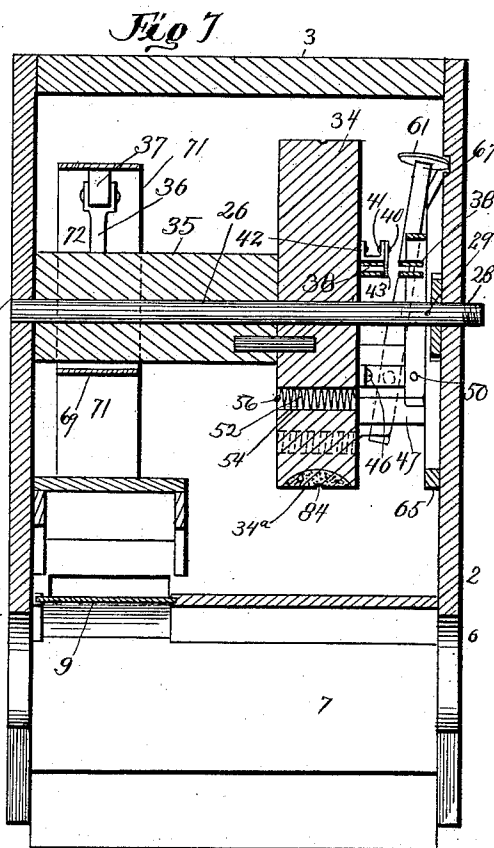


Fig. 7

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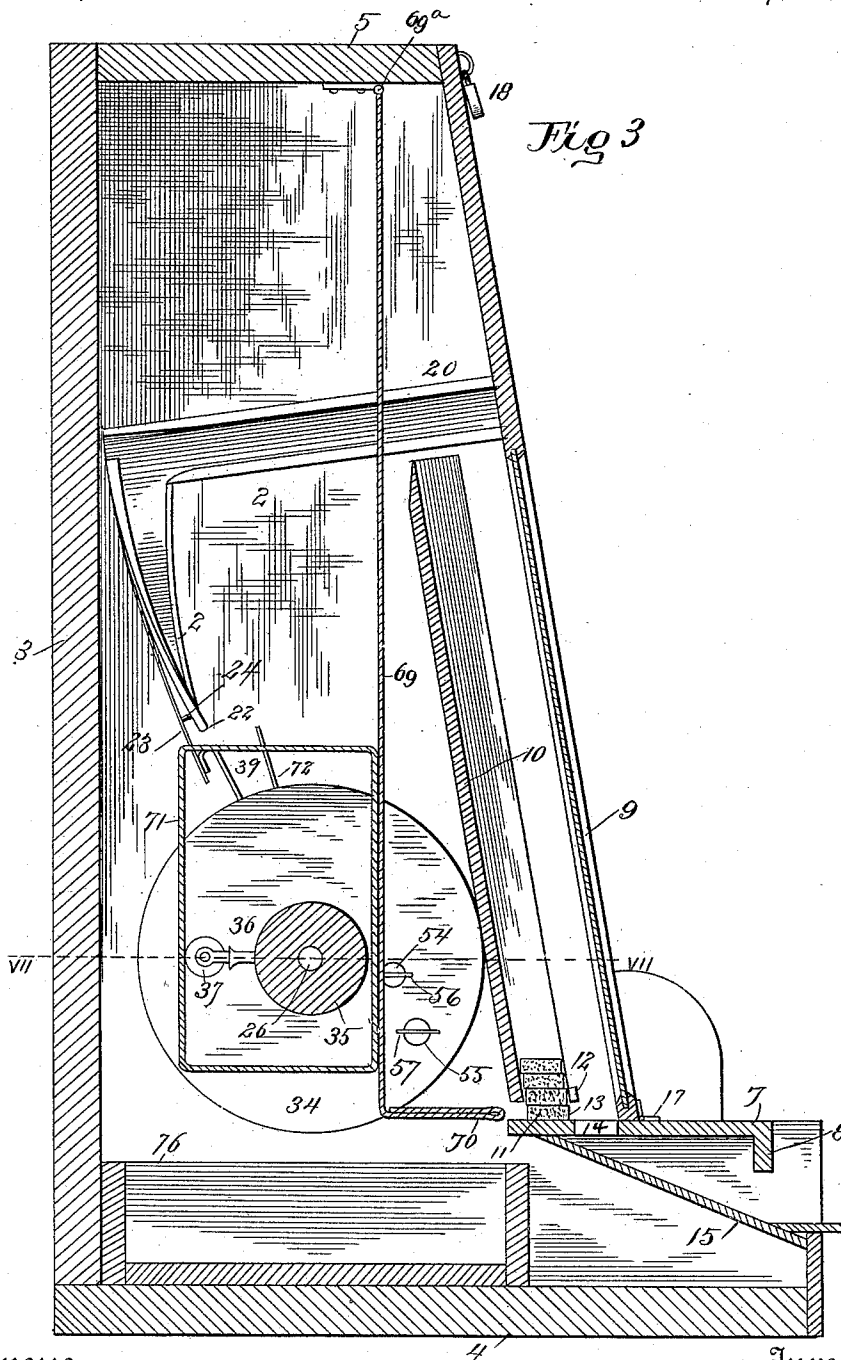
(No Model.)

4 Sheets—Sheet 3.

J. A. HUNT.
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(No Model.)

4 Sheets—Sheet 4.

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Fig 5

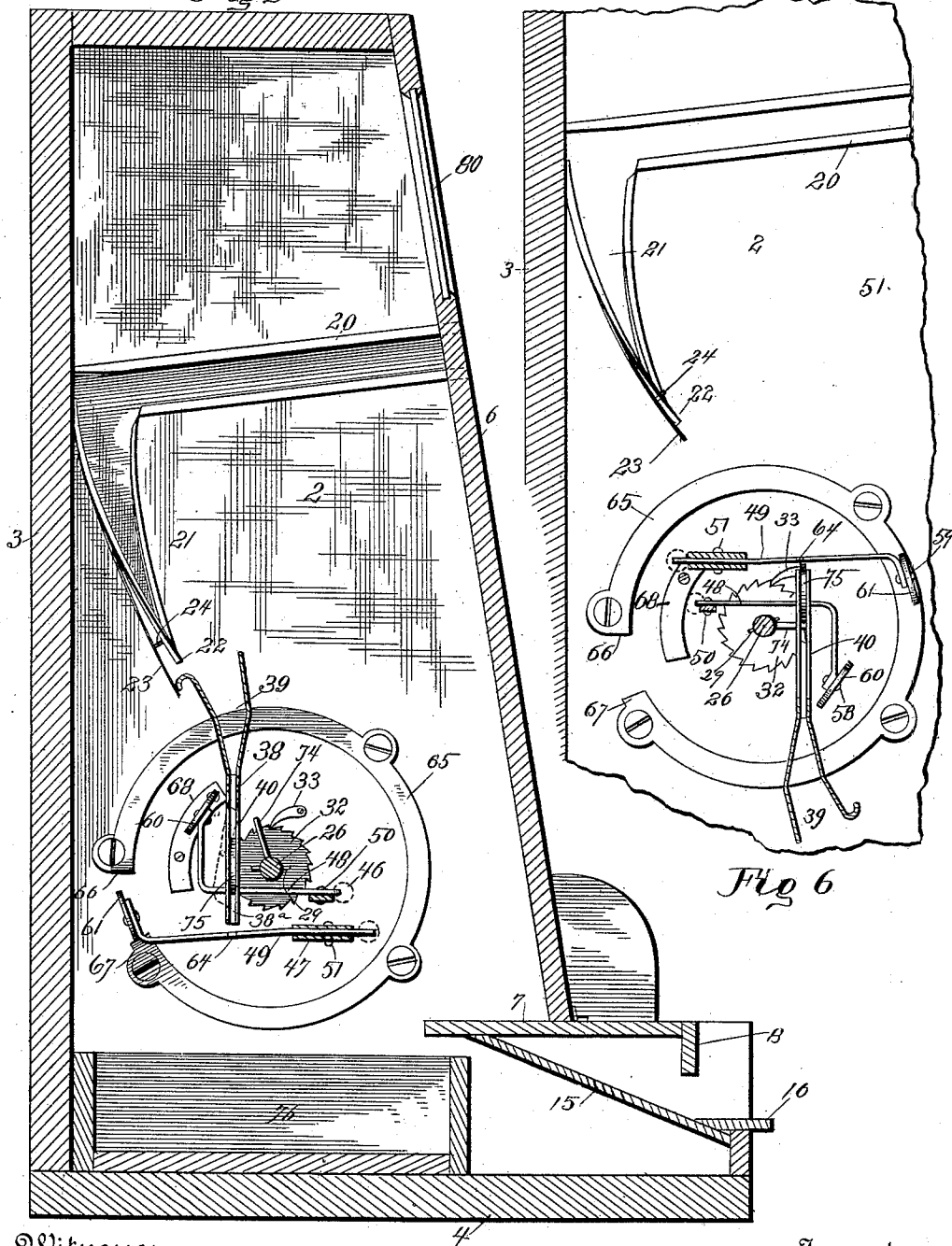


Fig 6

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN A. HUNT, OF BINGHAMTON, NEW YORK.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 463,054, dated November 10, 1891.

Application filed May 12, 1891. Serial No. 392,513. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. HUNT, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Vending-Machines; 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 a coin-controlled vending-machine designed for the sale of all small articles of merchandise of uniform size or which may be put in packages of uniform size, such as cigars, chewing-gum, confectionery, cough-drops, steel or other pens, &c.

The object of my invention is to provide a simplified vending-machine or merchandise-seller wherein when the proper coin has been deposited and its crank turned an article of merchandise will be discharged and sold to the buyer or the one depositing the proper coin.

Another object of my invention is to prevent the unauthorized removal of the merchandise by a pilferer who deposits improper matter.

A further object of my invention is to prevent the unauthorized removal of more merchandise than is represented by the coin deposited.

A further object of my invention is to prevent the loss of the coin deposited by a purchaser should such coin be deposited after an article has been discharged for the use of a previous purchaser who may not have returned the handle or crank back to original position.

To these ends my invention consists in certain features of construction and combinations of parts to be hereinafter described, and then particularly pointed out in the claims.

In order that my invention may be fully understood, I will now proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved vending-machine. Fig. 2 is an interior view of the casing in elevation, the front parts being removed. Fig. 3 is a section on line III III, Fig. 2. Fig. 4 is an end view of the mechanism mounted on the rotary disk,

looking from the crank end of the shaft. Fig. 5 is a vertical section on line V V, Fig. 2, looking in the direction of the crank. Fig. 6 is a similar section, partly broken away, showing the parts in another position. Fig. 7 is a transverse section on line VII VII, Fig. 3. Figs. 8 and 9 are detail sectional views.

The casing of the machine has sides 1 and 2, back 3, bottom 4, and top 5. The front 6 ends short of the bottom 4 above a shelf 7, extending from side to side of the casing and provided with a downwardly-extending front flange 8. Just behind a glass face 9 in the front 6 is a merchandise hopper or chute 10, inclined rearwardly from its lower end. The hopper is secured to the side 1 of the casing, and is raised from the shelf 7, so as to leave a space 11 at the back. To the lower end of the open front of the hopper is secured a transverse guard-strip 12, between which and the shelf 7 is a space 13, in front of which is a longitudinal opening 14 in the shelf. Below the shelf 7 and inclined downwardly from behind the opening 14 is an incline 15, which extends in front of the shelf and across the entire width of the casing and permits the merchandise to slide onto a ledge 16. The front 6 constitutes a door, being hung on hinges 17 and fastened by a padlock 18. A coinway projects through the front 6 at 19, its rearwardly and downwardly inclined portion 20 being secured to the side 2. At the inner end of the portion 20 is a forwardly and downwardly inclined portion 21 of the coinway, which is twisted so as to bring its lower open end 22 in a position transverse of the machine.

Having described the fixed parts of my machine, I will now describe the operative mechanism thereof.

Secured to the back of the portion 21 of the coinway is a downwardly-projecting spring-arm 23, which extends below the open end 22, and is provided with a forwardly-extending detent 24, that protrudes through a hole 25 in the portion 21. The purpose of this spring-arm and detent will be described hereinafter.

26 is a transverse shaft having bearing in an opening 27 in the side 1 and also in an opening 28 in the side 2. A pin 29 passes through the shaft on the inner side of side 2 to prevent its withdrawal from the casing.

30 is a crank or handle having a screw-threaded opening 31 to receive the screw-threaded end of the shaft. Fixed on the shaft contiguous to the side 2 is a ratchet-wheel 32, the teeth of which are engaged by a gravitating pawl 33, pivoted to said side, so as to prevent the crank being turned in the wrong direction.

Fitting loosely on the shaft is a disk or wheel 34, which is weighted at 34^a by filling with heavier material or enlarging the same. Fixed on the disk 34 is a hub 35, having a laterally-extending arm 36 extending diametrically opposite to the weighted side of the disk and provided at its outer end with a roller 37. On the side of the disk opposite the hub 35 is a flattened tube forming a coin-receptacle 38, provided with a flaring mouth 39. The receptacle is arranged on a line co-incident with that of a chord of the disk and projects at right angles thereto, its lower end terminating below the shaft and its upper end or mouth extending beyond the periphery of the disk. Formed in the sides of the receptacle is a longitudinal slot 40, which opens at the lower end thereof. At one side of the coin-receiver and pivoted at 41 on a bracket 42 is a catch 43, the upper end of which has an incline 44 and the lower end has a lateral lug 45 adapted to project into the slot 40.

43^a is a pin behind the upper end of the catch. On the opposite side of the coin-receiver and projecting from the disk 34 is a pair of brackets 46 and 47. The brackets 46 and 47 have pivoted thereto cut-off devices or levers 48 and 49, the inner ends of which project beyond the pivots 50 and 51, and are connected with spiral springs 52 and 53, which extend through transverse holes 54 and 55 in the disk and are anchored to fastenings 56 and 57. These levers 48 and 49 are parallel and the former extends across the coin-receiver, the lever 48 being shorter than the lever 49. The inner ends of the levers 48 and 49 are curved or extended inwardly, so that studs 58 and 59, respectively, which project therefrom, may radiate from the shaft 26 as a center, whereby the rollers 60 and 61 journaled thereon are adapted to rotate in circular paths concentric with the shaft. The upper lever 48 has a notch 62 in its inner edge, such notch being slightly less in width than the coin to be deposited. In the outer edge of the coin-receiver 38 is a notch 63, which extends into the way 38^a therein, and the notch 62 in the lever 48 is as deep as said notch 63, so that when the lever is pressed against the coin-receiver the bottom wall of its notch will not project through notch 63 into the way 38^a, and the notch 62 being also less in width than the coin to be deposited or the width of the way 38^a its side walls will project slightly into the latter. The lower lever 49 has a notch 64 in its inner edge narrower than the coin, such notch being adapted to come opposite the open end of

the way 38^a. The roller 61 of the long lever 49 travels upon a circular track 65, raised above the inner side of the side 2 of the casing and being concentric with the shaft 26. Said track has at the back of the casing an offset, forming a shoulder 66, from the bottom of which rises a gradual incline 67 in the track. The roller 60 of the short lever 48 is adapted to travel over a bridge 68, raised above the inner side of the side 2, just behind the shoulder 66 of the track 65.

69 is a swinging or movable ejector-lever hung on a hinge 69^a at the top of the casing behind the merchandise-chute 10. Projecting forwardly from the lower end of the ejector-lever is a lip 70, just behind the space 11 at the lower end of the chute. Fixed to the back of the lower end of the lever is a frame 71, preferably of rectangular shape, the opening 72 of which receives the hub 35 of the disk 34, so that when the latter is revolved the roller 37 will engage the inner side thereof.

80 is a small observation glass window at the top of the front of the casing. Below this window is a shelf 81, on which is supported in suitable journals a shaft 82, provided with a pulley 83. The disk 34 is provided with a circumferential groove 84 to receive a belt 85, which also passes over the pulley 83. The shaft 82 may operate an acrobatic or other moving figure 86, or may turn a kaleidoscope. The object of this attachment is to permit the operator when looking through the window to see the moving figure or other device and furnish amusement, at the same time indicating to him that the proper coin has been deposited.

The construction of my vending-machine having been described, I will now proceed to describe the operation.

The mechanism will be presumed to be in proper position for receiving a coin. When a coin 75 is dropped in the coinway 20 21, it will pass down the same and drop into the coin-receiver, it being hindered in its downward progress by the lever 48, which is pressed inwardly against the force of its spring by the contact of its roller 60 with the bridge 68, so as to cause the side walls of the notch 62 to project through the notch 63 of the coin-receiver into its way or passage. As the notch 62 is narrower than the passage in the coin-receiver, a coin must be of sufficient thickness in order to be retained by the lever 48, as otherwise it will slide past it and fall into the bottom of the casing, so that the machine cannot be operated, and this is the result should the improper matter be of less width than the proper coin, for the inner edge of the lever projects into notch 63. While the lever 48 is forced inwardly by the bridge 68, the longer lever 49 is thrown outwardly by the force of its spring, so as to cause its roller 61 to engage behind the shoulder 66 of the circular track 65 and prevent the counter-balance 35 of the disk from turning the latter backward. Now to

proceed with the progress of the coin 75 in the coin-receiver: The crank being turned will cause the revolution of the shaft 26 and bring the arm 74 over, so that it will bear
 5 upon the top of the coin, which latter is prevented from being discharged by means of the lever 48, which presses against and upholds it. This action causes the disk 34 and hub 35 to partake of the revolution of the shaft
 10 and throws the outer end of the lever 49 outwardly under the lower end of the coin-receiver by reason of the roller 61 traveling up on the incline 67 of the circular track 65. As the shaft and disk continue to rotate, the
 15 roller of lever 48 will pass off the bridge 68 and permit the spring attached to the lever to draw it away from the coin-receiver, permitting the coin to drop upon the lever 49 below. Immediately after the coin drops, the
 20 arm 74 of the shaft will again bear against it and cause the disk to rotate further, with the roller of lever 49 traveling over the track 65. When the disk is brought back to its original position, the roller of lever 49 will
 25 arrive at the shoulder 66 of track 65, whereupon the spring of the lever will press the same outwardly and release the coin, so that it will fall out of the coin-receiver and through the notch 64 of said lever, the lever 48 being
 30 brought back to position to catch and hold the next coin. The coin falls into a drawer 76 below, said drawer being secured by a suitable lock. It will be observed that when the coin-receiver is brought to about horizontal
 35 position the roller 37 on the arm 36 of the hub 35 (which arm is directed at about right angles to the coin-receiver) will, by its friction against the lower part of the frame 71, cause the lip 70 of the ejector to project through the
 40 space 11 below the merchandise-chute and force a piece of gum or whatever it may be out through the space 13. The article will then fall through opening 14 of the shelf 7 and upon the incline 15, whence it will slide upon
 45 the ledge 16, so that it can be removed. When the ejector is retracted, the remaining articles of merchandise will fall, with the lower one resting on the shelf 7, just behind the opening 14. Should it be designed to remove more mer-
 50 chandise than is purchased, which might be done by depositing two coins at a time, the attempt will be thwarted by the catch 43, pivoted alongside the coin-receiver. The operation is shown in Fig. 8. It will be seen that
 55 the lower coin, which is held by lever 48, will engage the head or lug 45 of the catch, pressing that end out and the upper inclined end 44 in, so that the second coin deposited, which is the upper coin, will rest upon and
 60 be prevented from falling by said upper end, and it will not fall until the lever 48 releases the lower coin, when both coins will fall upon the lower lever and be released simultaneously thereby at the proper time. If it were
 65 not for this catch, it is clear that by a careful turning of the shaft with two coins in the coin-receiver the merchandise-chute could be

entirely emptied, because the end of the arm 74 of the shaft could be held in such contact with the side of the upper coin as to jam the
 70 coin tightly in the coin-receiver. Should a purchaser deposit a coin before the coin previously deposited has fallen out of the coin-receiver, said coin will be caught in its down-
 75 ward passage through the coinway 20 21 by the detent 24, projecting from the spring-arm 23, until the previously-deposited coin is released by the turning of the shaft, when the upper end of the coin-receiver, coming in contact with the lower end of the spring-arm,
 80 pushes forward the same, which withdraws the detent 24 from the hole in the coinway, allowing the coin to fall into the coin-receiver. This will prevent the loss of said purchaser's
 85 coin.

It is evident that my machine is susceptible of slight changes, which will readily suggest themselves to skilled mechanics, without departing from the spirit and scope of my invention.

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

1. In a vending-machine, a rotary shaft provided with an arm and operating means, in combination with an independent coin-receiver revoluble with the shaft and provided with a longitudinal slot and transverse notch, and a cut-off device adapted to project into the notch to hold the deposited coin when engaged by the arm, which is adapted to project into said slot, substantially as set forth.

2. In a vending-machine, a rotary shaft provided with an arm and operating means, in combination with an independent coin-receiver revoluble with the shaft and provided with a longitudinal slot and transverse notch, a cut-off device adapted to project into the notch to hold the coin when engaged by said arm, and another cut-off device below the lower end of the coin-receiver, also adapted to hold the coin when engaged by said arm, substantially as set forth.

3. In a vending-machine, a rotary shaft provided with operating means, in combination with an independent coin-receiver revoluble with the shaft, spring-controlled cut-off levers, and means for throwing said levers inwardly toward the coin-receiver, whereby the coin deposited may be engaged by suitable means on said shaft for producing the rotation of the coin-receiver, substantially as set forth.

4. In a vending-machine, a shaft provided with operating means, in combination with a disk mounted loosely on the shaft, a coin-receiver carried by the disk, pivoted cut-off levers also carried by the disk, and means on the shaft for engaging the deposited coin which is held by said levers, whereby the disk and shaft are caused to rotate together, substantially as set forth.

5. In a vending-machine, a shaft provided with operating means, in combination with a disk mounted loosely on the shaft, a coin-re-

ceiver carried by the disk, pivoted cut-off levers also carried by the disk, springs attached to said levers and to the disk, and means on the shaft for engaging the deposited coin which is held by said levers, whereby the disk and shaft are caused to rotate together, substantially as set forth.

6. In a vending-machine, a shaft provided with operating means, in combination with an independent coin-receiver provided with a notch, a cut-off lever provided with a notch adapted to register with aforesaid notch when the lever enters it, and means on the shaft for engaging the deposited coin which is held by said lever, whereby the disk and shaft are caused to rotate together, substantially as set forth.

7. In a vending-machine, a shaft provided with operating means, in combination with a disk mounted loosely on the shaft, a coin-receiver carried by the disk, a pivoted cut-off lever also carried by the disk, means for throwing said lever away from the coin-receiver, a bridge over which one end of said lever passes for throwing it inwardly, and means on the shaft for engaging the deposited coin which is held by said lever, whereby the disk and shaft are caused to rotate together, substantially as set forth.

8. In a vending-machine, a shaft provided with operating means, in combination with a disk mounted loosely on the shaft, a coin-receiver carried by the disk, pivoted cut-off levers also carried by the disk, means for throw-

ing the levers away from the coin-receiver, a bridge over which one end of one of the levers passes, a circular track provided with a shoulder opposite the bridge and over which track one end of the outer lever passes, said bridge and track throwing the levers inwardly, and means on the shaft for engaging the deposited coin which is held by said levers, whereby the disk and shaft are caused to rotate together, substantially as set forth.

9. In a vending-machine, the combination, with a merchandise-chute and an ejector provided with a swinging frame, of a rotary shaft and an arm adapted to rotate with the shaft within said frame for moving the ejector, substantially as set forth.

10. In a vending-machine, the combination, with a merchandise-chute and an ejector provided with a swinging frame, of a rotary shaft and an arm provided with a roller adapted to rotate with the shaft within the frame for moving the ejector, substantially as set forth.

11. In a vending-machine, a horizontal rotary shaft provided with a coin-receiving tube having a flaring mouth and revoluble with the shaft, in combination with a coinway, spring-arm, and detent actuated by the tube, as and for the purpose set forth.

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

JOHN A. HUNT.

Witnesses:

J. D. ROUNDS,

A. W. CUMMING.