

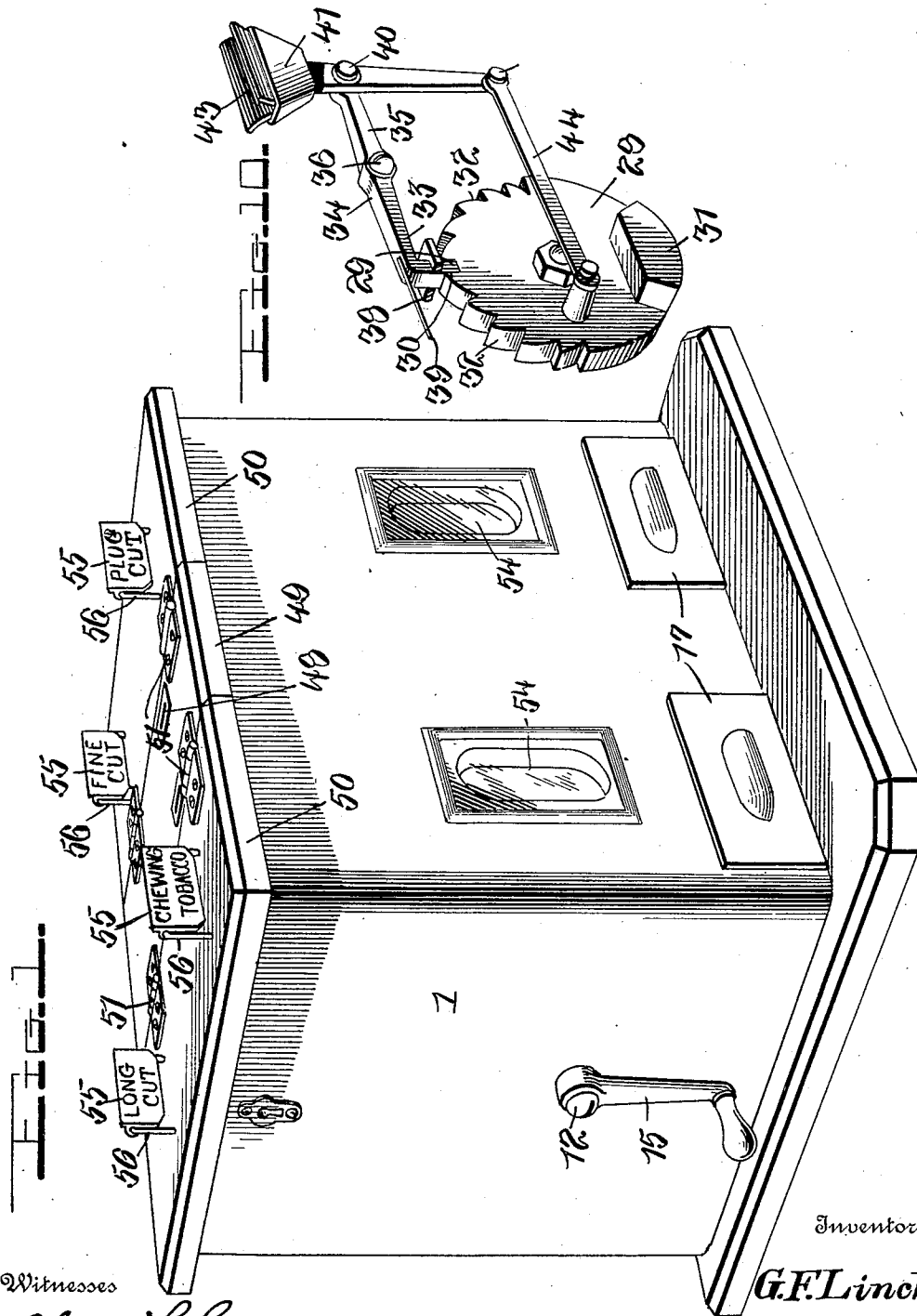
G. F. LINCK.  
VENDING MACHINE.

APPLICATION FILED JUNE 21, 1910.

1,000,027.

Patented Aug. 8, 1911.

5 SHEETS—SHEET 1.



Witnesses

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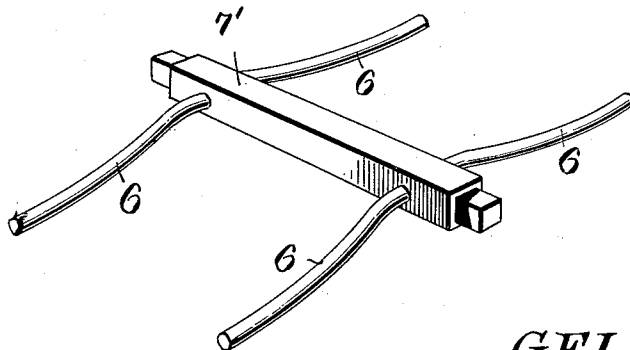
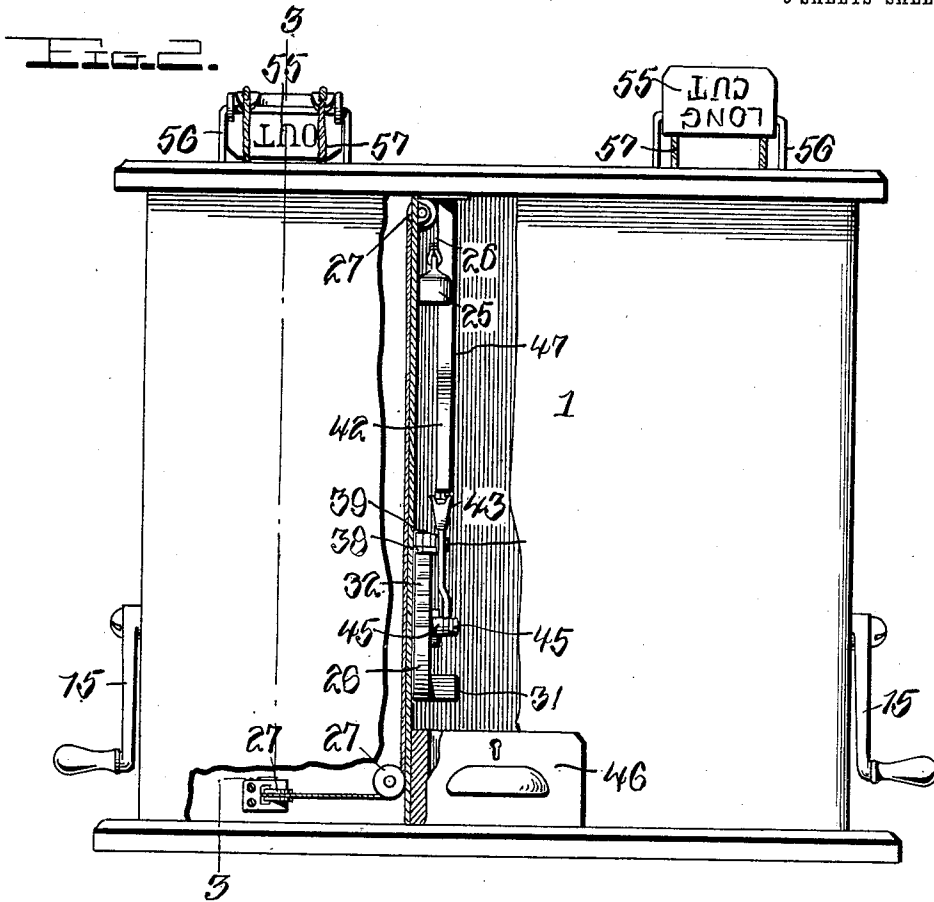
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5 SHEETS-SHEET 2.



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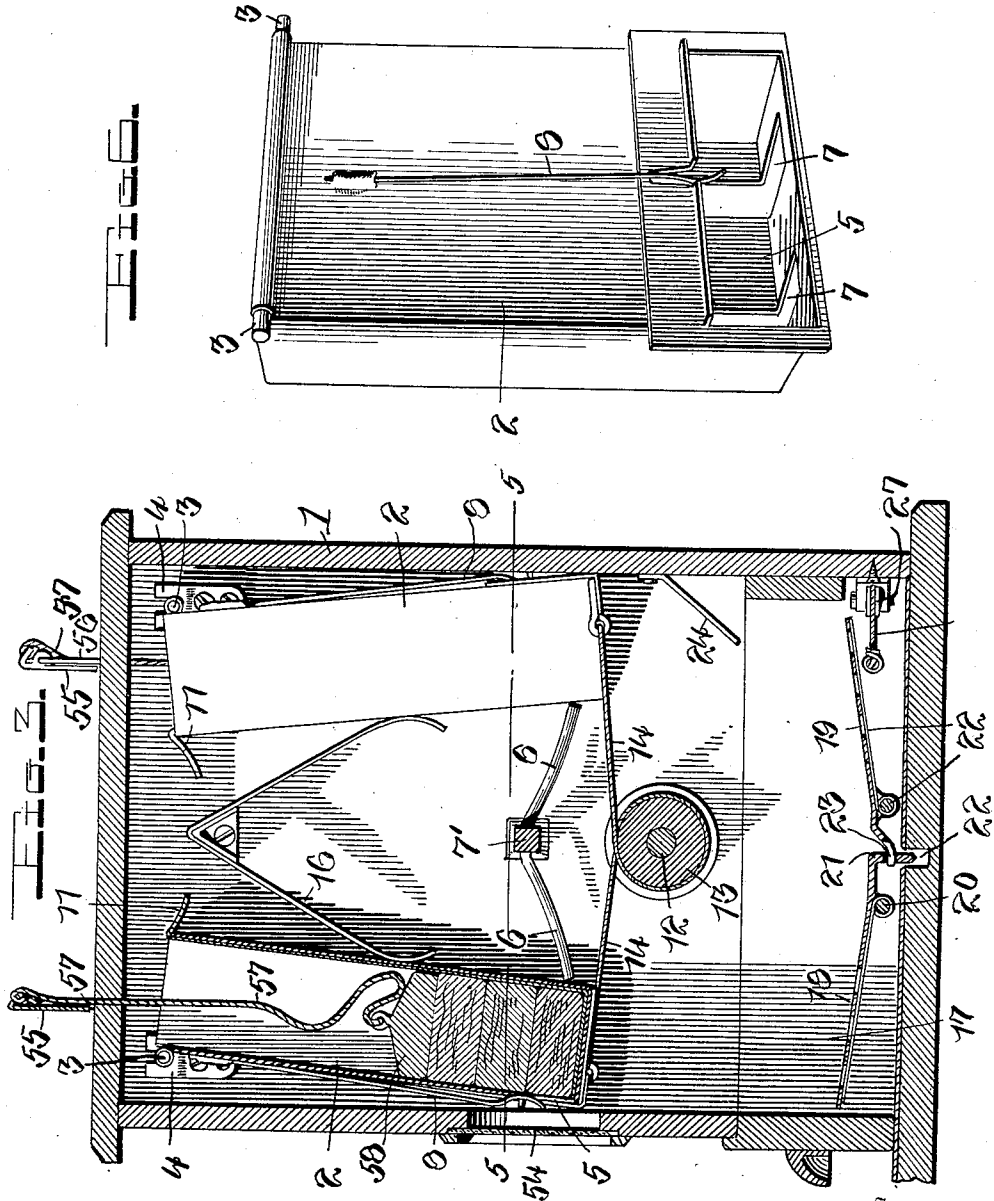
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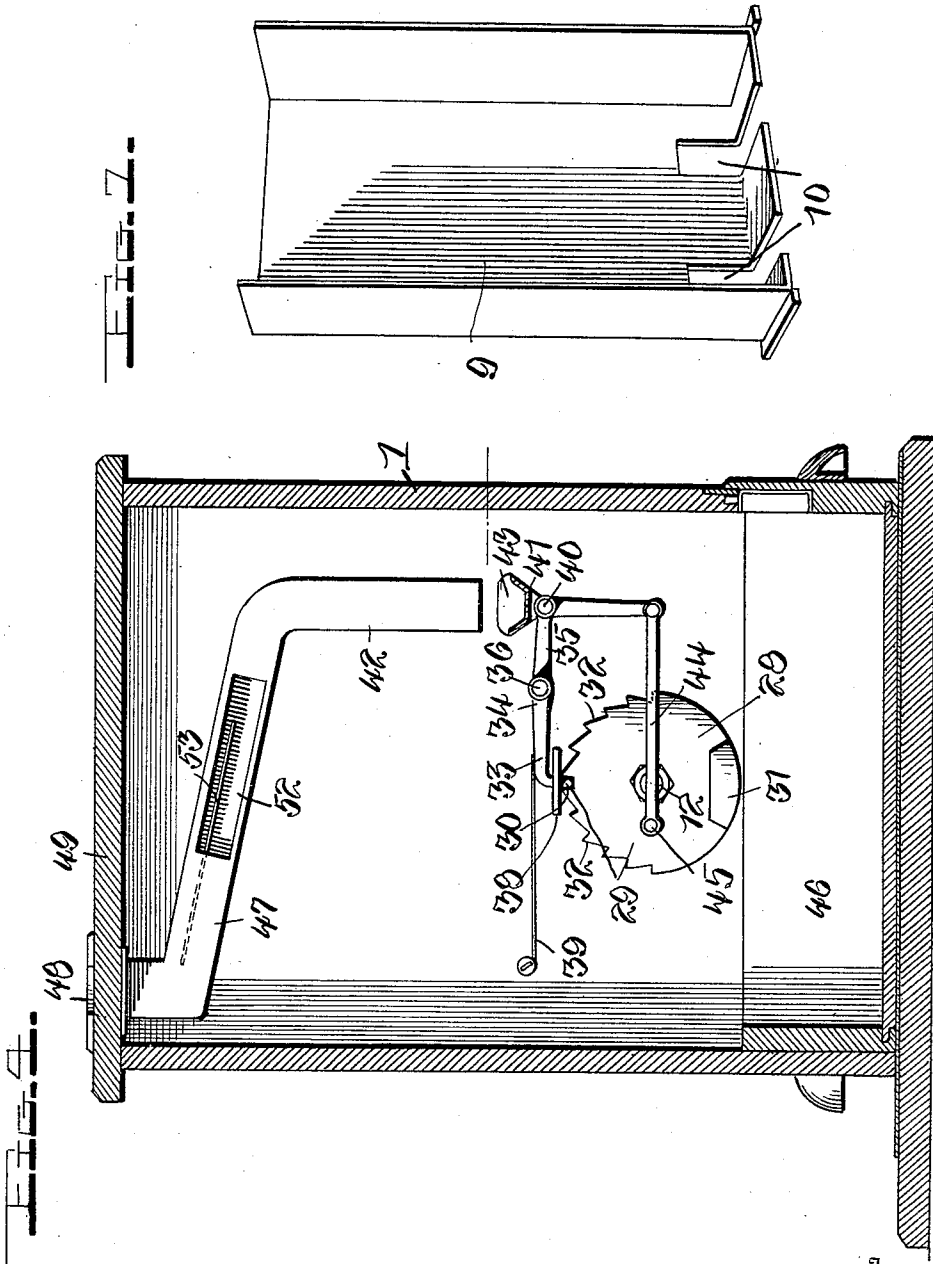
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5 SHEETS—SHEET 4.



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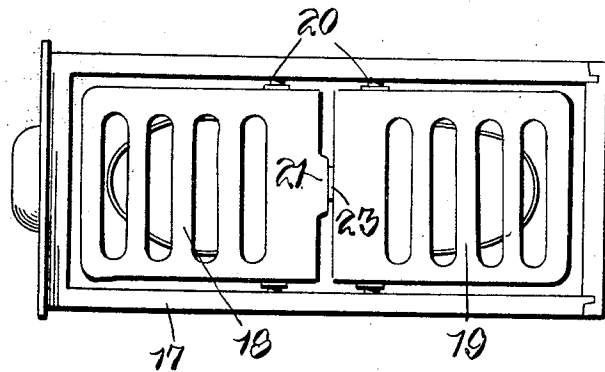
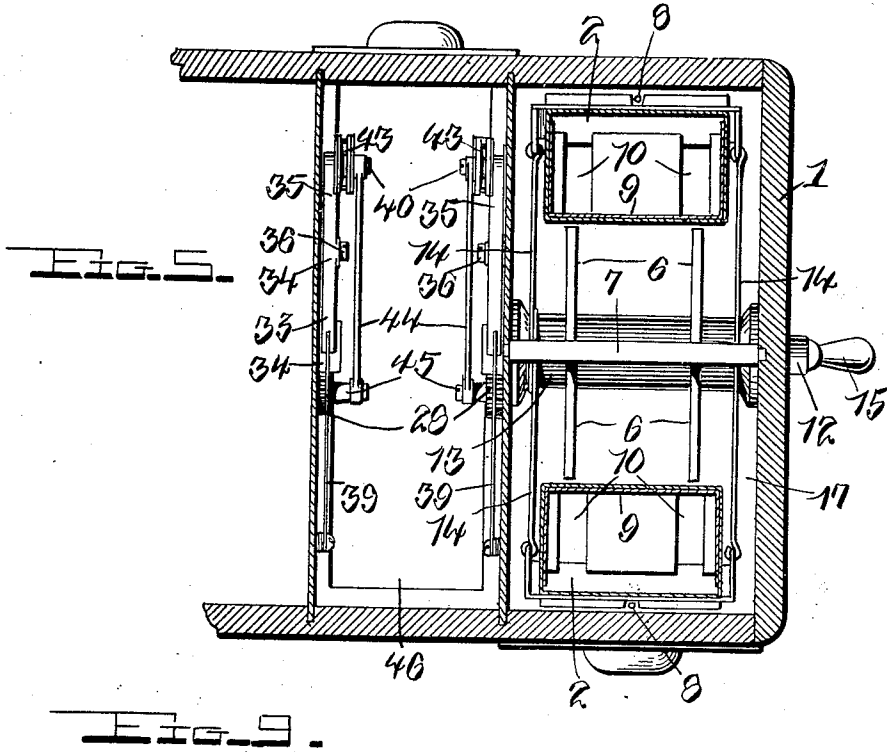
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5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

GEORGE F. LINCK, OF HOUSTON, TEXAS.

VENDING-MACHINE.

1,000,027.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed June 21, 1910. Serial No. 568,182.

To all whom it may concern:

Be it known that I, GEORGE F. LINCK, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in vending machines.

The object of the invention is to provide a simple and practical machine of this character which has improved means for holding, ejecting and delivering the goods or merchandise, improved means for indicating when the goods holders or compartments are empty, and improved coin-controlling actuating means.

With the above and other objects in view, the invention consists in the novel construction, 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 vending machine embodying my invention; Fig. 2 is a back view partly broken and in section; Fig. 3 is a vertical section taken on the line 3—3 in Fig. 2; Fig. 4 is a vertical section showing the coin-controlling locking means for the main shaft; Fig. 5 is a horizontal sectional view taken on the plane indicated by the line 5—5 in Fig. 3; and Figs. 6 to 10 inclusive are detail views of parts.

The embodiment of my invention illustrated in the accompanying drawings is a machine especially designed for selling or vending four different kinds of goods or merchandise, which may be pieces of plug tobacco, bags, cartons or boxes of smoking or chewing tobacco, or any other kind of merchandise, and it comprises a rectangular casing 1 within the four corners of which are arranged holders 2 for the several different kinds of merchandise. The several holders are the same in form and construction and co-acting with them are similar groups of parts, so that a detailed description of one of the holders and the parts co-acting therewith will suffice for all. Each of the holders is in the form of a rectangular sheet metal box which is pivotally mounted for swinging movement, such mounting being effected by providing at its upper and outer edge pivots 3 which are

removably engaged with notched bearing brackets 4. In the lower portion of the front wall of the casing is an opening 5 of sufficient size to permit one of the plugs of tobacco or other pieces or packages of merchandise to be discharged from the holder. The lowermost piece of merchandise is ejected from the opening 5 by swinging the lower portion of the holder 2 inwardly on the pivots 3 so that said piece of merchandise will be engaged by one or more stationary stops or ejecting fingers 6 so arranged that they enter slots or openings 7 in the back and bottom of the holder when the latter swings inwardly. When two of the holders are arranged opposite each other as shown in Fig. 3 the ejecting stops 6 are mounted on the same supporting bar or bracket 7. For the purpose of preventing but one piece of merchandise being ejected, a spring stop 8 is provided on the front of the holder and has an angular lower end working in a notch formed in the upper edge or wall of the opening 5.

The merchandise may be placed directly in the box or holder 2 but I prefer to employ an inner holding frame 9, which latter is removably arranged in the holder 2. The inner holding frame 9 is likewise constructed of sheet metal and has an open front and top, slots or openings 10 in its bottom to correspond with the opening 7, and a finger piece 11 at the top of its back wall, whereby it may be readily lifted into and out of the holder 2. By providing the inner holding frame 9 it will be seen that the latter may be readily filled with a row of pieces of tobacco or other merchandise and then quickly placed in the holder 2 which while removably mounted, is only removed when it is necessary to repair some of the parts of the mechanism.

For the purpose of swinging the holder 2 in an inward or rearward direction I provide a transverse shaft 12 on which is arranged a spool or drum 13. Cords or other flexible elements 14 are attached to the end portions of the bottom of the holder 2 and to the spool 13, so that when a crank handle 15 provided on the outer end of the shaft 12 is turned, the cords 14 will be wound upon the spool and the holder 2 will be swung inwardly. When two of the holders are arranged to oppose each other as in Fig. 3, the cords of both holders may be wound in opposite directions on the same

spool 13 so that when the crank 15 is turned in one direction, one holder will be swung inwardly, while when it is turned in the opposite direction the other holder will be similarly actuated.

By arranging the pivots 3 of the holder as shown and described, the lower end of the holder will tend to swing in an outward direction away from the ejecting stop fingers 6, but if desired a spring or springs 16 may be employed to actuate the lower end of the holder in an outward direction.

The piece of merchandise that is discharged from the holder 2 when the latter swings inwardly drops into a delivery member 17 preferably in the form of a sliding drawer arranged in the bottom portion of the casing, and when two of the holders are arranged to oppose each other as in Fig. 3 the same drawer 17 is adapted to receive the merchandise or goods from both holders, in such case the drawer is adapted to be drawn out through an opening in the front wall of the casing 1. This drawer is adapted to be locked in its closed position and to be released by the weight of the merchandise dropped into it. To permit of this, two false bottom members 18, 19, are arranged in the lower portion of the drawer beneath the two holders 2 and they are pivotally mounted intermediate their ends as indicated at 20. The inner end of the member 18 is made large as shown at 21 to provide a weight which overbalances the member 18, and to provide a dog to enter a keeper notch 22 formed in the bottom of the casing. The inner end of the member 19 is made angular in shape to provide a hook arm 23 which projects into an opening in the part 21, whereby the two members 18, 19 will move in unison. If desired, inwardly inclined chutes 24 may be provided within the casing beneath the lower portions of the merchandise holders 2 for the purpose of deflecting the merchandise on to the tilting false bottom members 18, 19 so that when a piece of merchandise falls on either of these members the inner ends 21, 23 of both members will move upwardly and the part 21 will be disengaged from the keeper notch 22, thereby unlocking the drawer 17.

The drawer 17 is adapted to be pulled outwardly by hand, a knob or hand piece being provided at its front end, and I prefer to actuate it inwardly to its closed position by providing a weight 25 on one end of a rope or the like 26 which passes over suitable guides 27 and has its other end attached to the drawer. It will be seen that when the drawer is released after it has been pulled out to enable the piece of merchandise to be removed from it, the weight 25 will automatically return the drawer to its closed position and the latter will then be locked by the dog or part 21.

For the purpose of locking and controlling the shaft 12 so that the crank 15 can only be turned after a coin of proper denomination has been dropped into the machine, I provide on said shaft a ratchet wheel 28 with which co-acts a locking dog 29. When two of the holders 2 are arranged opposite each other so that the same crank 15 is adapted to actuate each one, the ratchet wheel or disk 28 is constructed as shown and comprises a substantially circular plate provided at one point in its edge with a rectangular notch 30 to receive the dog 29, at a diametrically opposite point with a counterbalancing weight 31 and on its edges on opposite sides of the notch 30 series of oppositely arranged ratchet teeth 32. The teeth 32 are so constructed that they may slip under the dog 29 when the disk or wheel 28 is turned in one direction and the weight 31 is so disposed that when the crank 15 has been actuated and is released, said weight together with the weight of the crank handle will return these parts to their normal position. The dog 29 is formed by the downturned angular end of one arm 33 of a lever 34 which is fulcrumed at 36 and has an oppositely projecting arm 35. The dog 29 works through a slot in an angular guide bracket 38 and if desired a leaf spring 39 may be provided for actuating the dog downwardly into engagement with the ratchet wheel 28. The extremity of the arm 35 of the lever 34 is bent at right angles and forms a bearing for the pivot 40 of a tilting coin holder 41 arranged beneath the lower end of a coin chute or runway 42. The coin holder 41 is in the form of an upright lever fulcrumed adjacent its upper end, on which latter is a substantially V-shaped cup or receptacle 43 adapted to receive the coin. The lower end of the coin holder or lever 41 is connected by a link 44 to a crank pin 45 arranged on the ratchet wheel or disk 28, whereby when said wheel is turned the holder 41 will be simultaneously tilted. The weight of the end 35 of the lever 34 or such weight and the action of the spring 38 is such that the coin holder 41 is overbalanced when there is no coin in its cup 43, but when a coin of proper denomination is dropped through the chute 42 and rests in the cup 43, the holder 41 will be moved downwardly and will rock the lever 34 and lift the dog 29 out of engagement with the notch 30 in the ratchet wheel 28, thereby unlocking the shaft 12. When thus unlocked the crank 15 may be turned to actuate one of the merchandise holders 2, and such operation will cause the wheel 28 to actuate the link 44 so that the latter will tilt the coin holder 41 to such an extent that the coin will roll out of the cup 43. The discharged coin is adapted to drop into a sliding drawer 46 arranged centrally in

the bottom portion of the casing and adapted to be drawn out through the back or rear wall thereof. This drawer is of course provided with a suitable lock and when the mechanism is doubled as in the embodiment of the invention illustrated, it is adapted to receive the coins from both of the cups 43.

The coin chutes 42 extend upwardly and then forwardly, and their upper, forwardly inclined, branches 47 are adapted to receive the coins deposited in slots 48 formed in the front portion of a stationary, centrally arranged, section 49 of the top of the casing. The casing top also has two swinging sections 50 arranged on opposite sides of the section 49 and hinged thereto as shown at 51, the free edges of said sections 50 being adapted to be suitably locked in closed position. In the branches 47 of the coin chutes I preferably provide means for preventing smaller coins than the ones which the machine is designed to receive from passing to the cups 43, and such means comprises slots 52 formed in the side portions of the chute branches 47, and wire springs 53. These springs are arranged in the branches 47 and have one end fixed and their other ends arranged in the openings or slots 52 so that they will serve to deflect a small coin through such slots, while the coin of the proper denomination will not be affected by the springs.

If desired, I may provide in the front and rear walls of the casing glass covered sight openings 54, but in order to more effectively indicate the character of the merchandise or goods in each of the several holders, and to indicate when the holder is empty, I provide for each of the holders a sign 55. This sign is in the form of a plate pivotally mounted intermediate its end edges on a U-shaped bracket or support 56 arranged on one of the top sections 50 of the casing immediately above one of the merchandise holders 2. On one face of the sign plate 55 may be placed the name of the merchandise that is placed in the holder beneath it, and on the other face of said sign plate may be placed the word "Out," or any other reading matter which will indicate that the holder is empty. Cords or other flexible elements 57 are attached to the edge of the sign plate nearest its pivot and after passing downwardly through guide openings in the top section 50 have attached to them a weight 58. This weight is adapted to rest on the uppermost piece or article of merchandise in the holder and it serves both as a follower and also as a means for actuating the sign plate 55. The length of the cords 57 is such that when the weight 58 is supported on the merchandise the cords are slack, but as soon as the last piece of tobacco or merchandise has been ejected from the holder the cords support said

weight and the latter tilt the sign plate from its lowered position in which the name of the merchandise is displayed at the front of the casing to its elevated or inverted position, in which latter the word "Out" is displayed.

In operation when a coin of proper denomination is dropped into one of the openings 48 it rolls down one of the chutes 42 and drops into one of the cups 43. The weight of this coin tilts the lever 34 and thereby lifts the dog 29 out of the notch 30 in one of the ratchet wheels. The proper crank 15 is then turned, such crank being turned in a forward direction if a piece of merchandise from the front holder on that side of the machine is desired, and rearwardly if the piece of merchandise in the rear holder is desired. When said crank 15 is turned the pulley or drum 13 winds one of the cords 14 thereon and the proper holder 2 is thereby tilted so that the co-acting ejector stops will force the lowest most piece of merchandise from the tilted holder and drop it on to one of the false bottom members 18, 19, in the drawer 17. The weight of the deposited merchandise unlocks the drawer so that it may be pulled out. When the drawer is released it is automatically returned to its closed position and locked. When the crank 15 is turned the link 44 tilts the coin holder 41 so that the coin is discharged from the cup 43 and deposited in the money drawer. When the crank 15 is released its weight and the weight 31 will return the ratchet wheel or disk 28 to its normal position, whereupon the dog 29 drops into the notch 30 to lock the shaft 12.

While I have shown and described in detail the preferred embodiments of the invention, it will be understood that I do not wish to be limited to the precise construction set forth, since various changes in the form, proportion and arrangement of parts, and in the details of construction, may be resorted to within the spirit and scope of the invention.

Having thus described the invention, what is claimed is:

1. In a vending machine, the combination of a casing having a keeper notch, merchandise holding and discharging means in the casing, a delivery member below the merchandise holding and discharging means, and a tiltable bottom member in the delivery member, having a dog normally engaging the keeper notch.

2. In a vending machine, the combination of a casing having a keeper notch, merchandise holding and discharging means in said casing, a delivery member below the merchandise holding and discharging means, and tiltable bottom members in the delivery member, each of the said tiltable bottom

members being weighted at its inner end, one of the tiltable bottom members having a dog normally engaging the keeper notch and the other tiltable bottom member having an arm loosely connected to the said dog.

3. In a vending machine, the combination of a pair of oppositely disposed merchandise holders mounted for swinging movement, a support carrying oppositely projecting, ejecting stops, a rotatably mounted drum, flexible elements between said drum and said holders, said elements being wound in opposite directions on the drum, and means for rotating said drum.

4. In a vending machine, the combination of a casing, a merchandise holding and discharging means therein, a slidable delivery drawer in the casing to receive the merchandise, a keeper in the casing, a locking dog to engage said keeper, and means controlled by the merchandise deposited in the drawer for retracting said dog.

5. In a vending machine, the combination of a casing, a merchandise holding and discharging means therein, a slidable delivery drawer in the casing to receive the merchan-

dise, a keeper in the casing, a locking dog to engage said keeper, and a pair of oppositely disposed false bottom members mounted for tilting movement and operatively connected to move in unison and control said dog, said false bottom members being adapted to be tilted to retract the dog when merchandise is deposited on either one of them.

6. In a vending machine, the combination of a casing, a merchandise holder pivotally mounted at one of its upper edges and having an open top, a discharge opening in its front side adjacent its bottom, and slots in its bottom and rear side, stationary ejecting fingers to move into said slots, means for swinging the holder toward said fingers, and a movable merchandise carrying frame arranged in the holder and having a slotted bottom portion and a finger piece at its top.

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

GEORGE F. LINCK.

Witnesses:

D. F. ROWE,  
M. S. CLARKE.