

J. V. MORRIS & H. E. OLIVER.

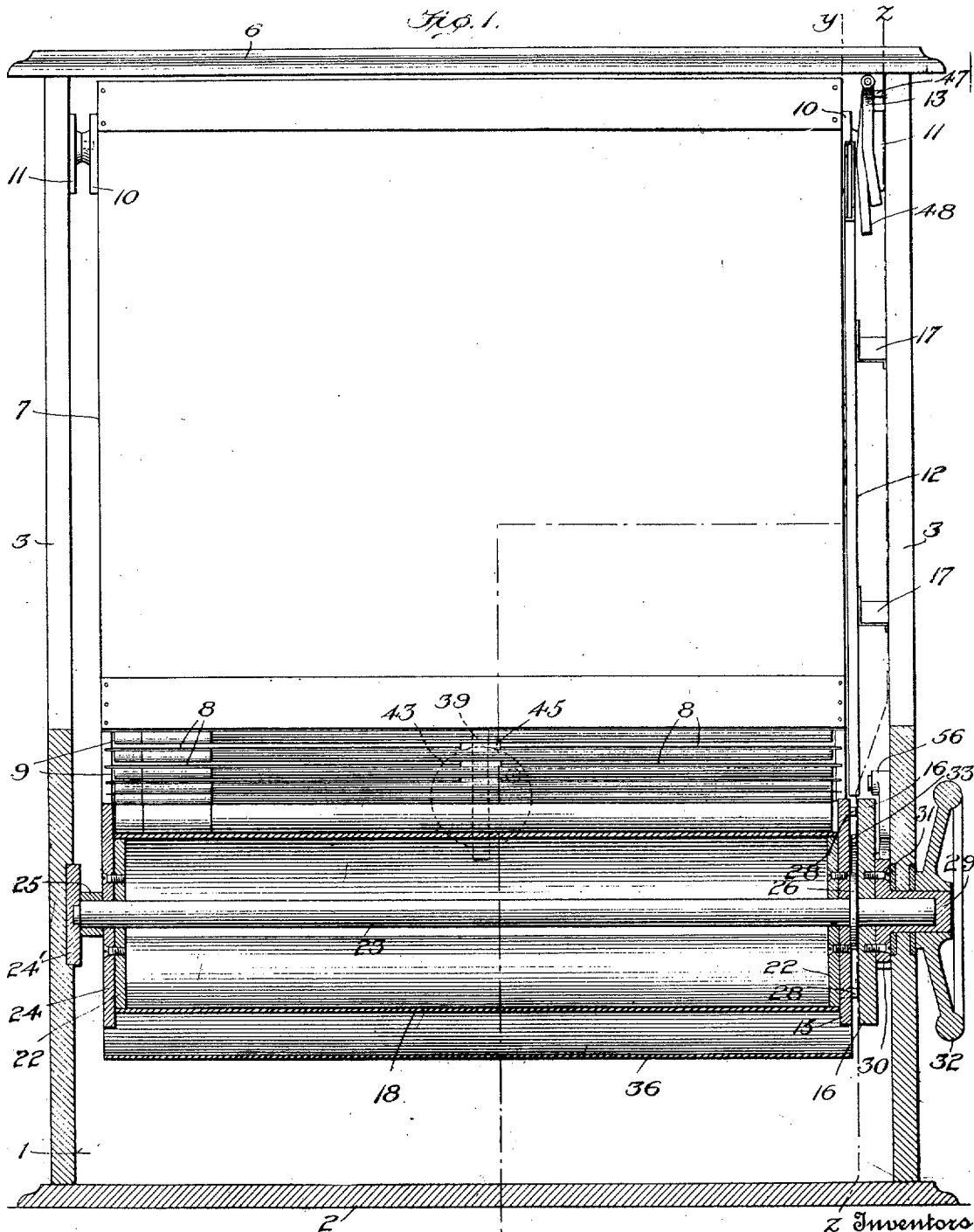
COIN VENDING MACHINE.

APPLICATION FILED OCT. 21, 1908.

986,490.

Patented Mar. 14, 1911.

3 SHEETS—SHEET 1.



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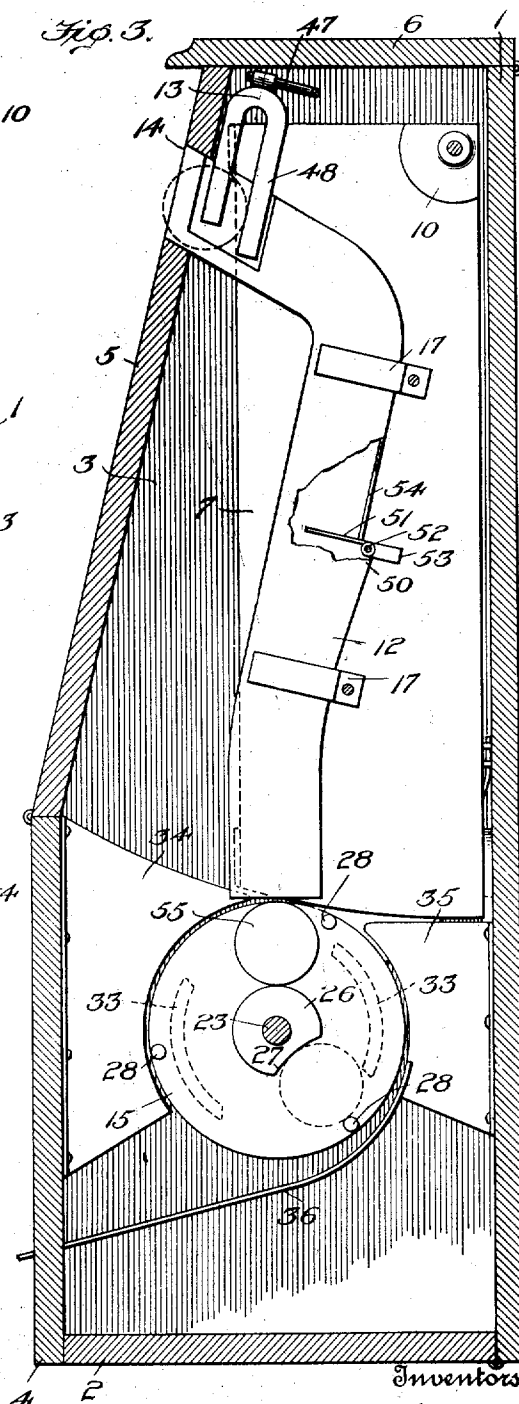
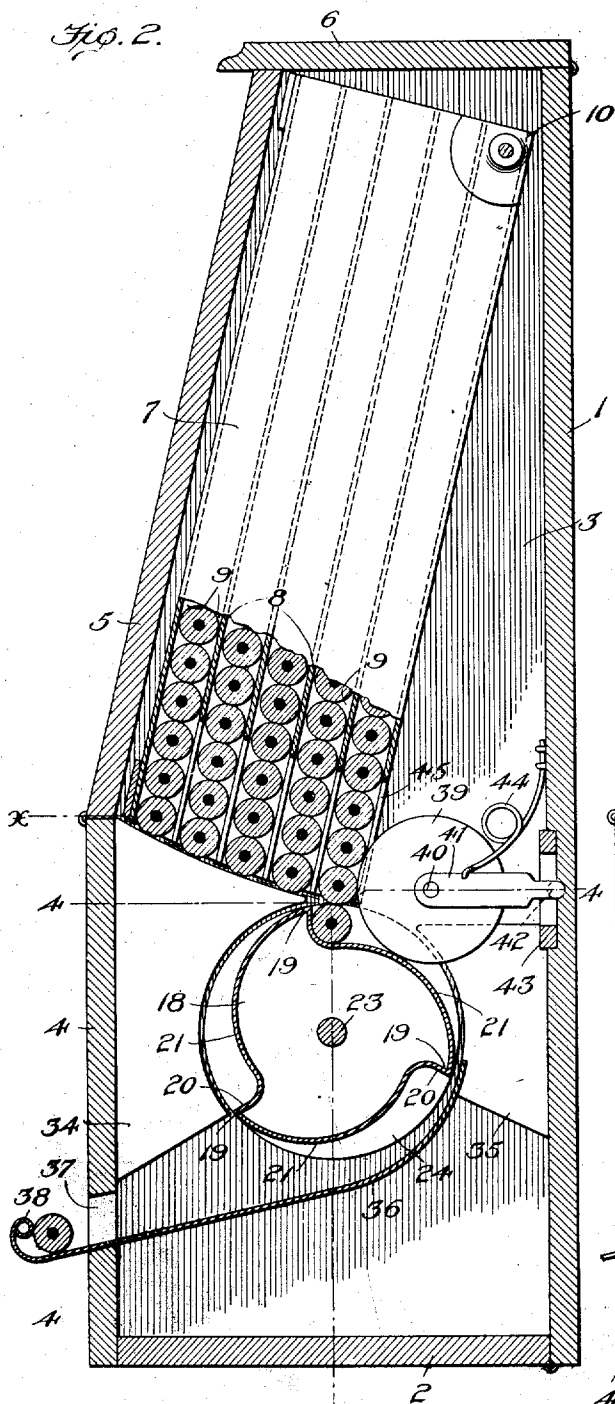
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3 SHEETS—SHEET 3.

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Fig. 4.

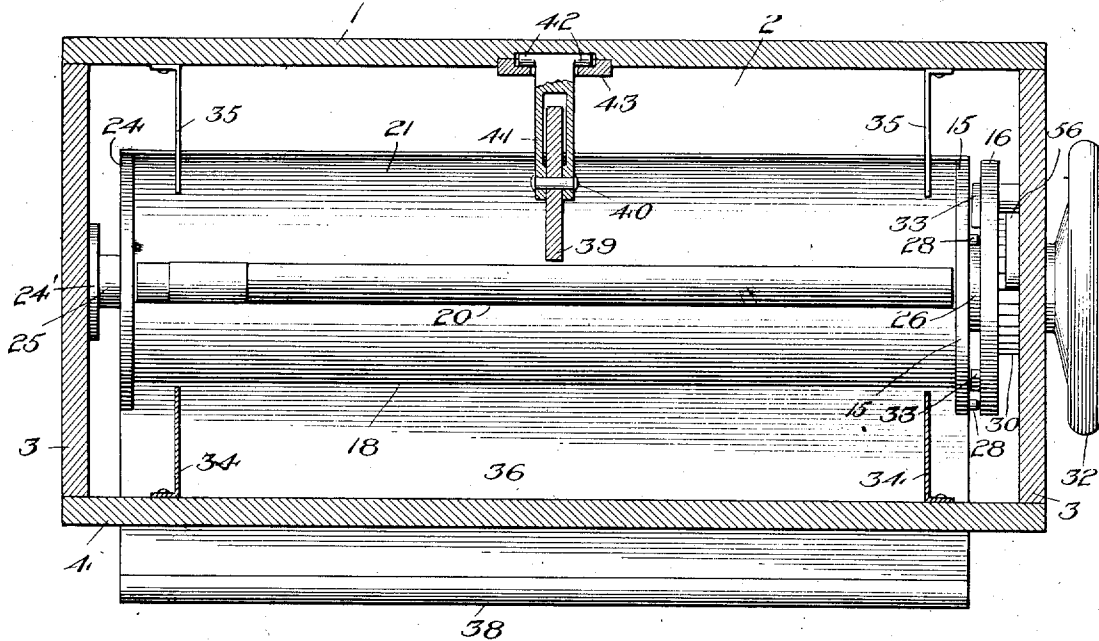


Fig. 5.

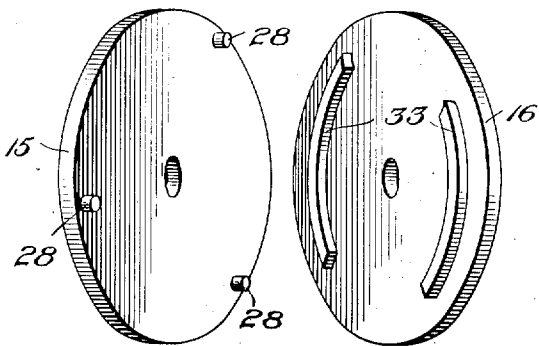
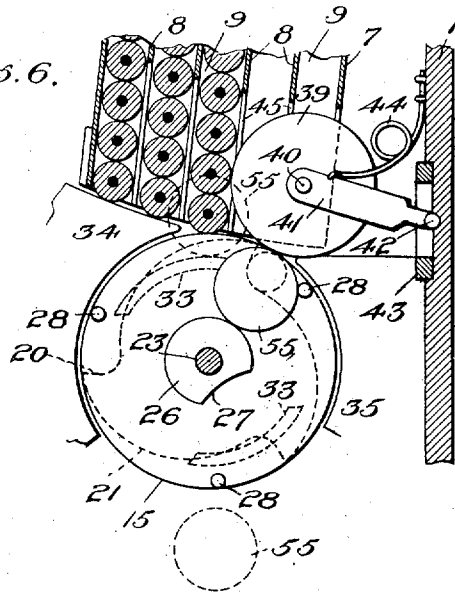


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN V. MORRIS AND HENRY E. OLIVER, OF BIRMINGHAM, ALABAMA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO STANDING VENDING COMPANY, OF BIRMINGHAM, ALABAMA, A CORPORATION OF ALABAMA.

COIN VENDING-MACHINE.

986,490.

Specification of Letters Patent. Patented Mar. 14, 1911.

Application filed October 21, 1909. Serial No. 523,931.

To all whom it may concern:

Be it known that we, JOHN V. MORRIS and HENRY E. OLIVER, citizens of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Coin Vending-Machines, of which the following is a specification.

Our invention relates to an improvement in coin vending machines particularly designed for the handling of pencils and like articles, though many features of its construction are broadly applicable to all characters of coin vending machines.

One object of our invention is to provide a swinging multiple compartment holder for the articles to be handled by the machine, a feed roller being used and so disposed as to be effective in the successive compartments as those preceding them are emptied. By this means we greatly increase the capacity of the machine at a nominal cost.

A further object of our invention consists in an improved construction of an ejector cylinder provided with circumferentially tapering receptacles to receive the articles one at a time and which serves as a support for the feed roller.

Our invention comprises the novel details of construction and arrangement of parts hereinafter more particularly described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a front elevation of our improved apparatus with the front of the casing removed and the ejector and its operating mechanism shown in vertical cross section along the line $x-x$ of Fig. 2. Fig. 2 is a vertical sectional view taken along the line $y-y$ of Fig. 1, the receptacle for the articles being shown in partial section. Fig. 3 is a vertical sectional elevation of Fig. 1 taken along the line $z-z$ of Fig. 1. Fig. 4 is a transverse cross-sectional view taken along the line 4-4 of Fig. 2. Fig. 5 is a detail perspective view of the disks which cooperate with an interposed coin to effect the transmission of motion to the ejector. Fig. 6 shows the positions assumed by the ejector and the feed roller as the former moves to eject a pencil or other article.

Similar reference numerals refer to similar parts throughout the drawings.

As illustrated, we show our improved apparatus mounted in a casing having a back 1, a hinged downwardly opening bottom 2, side walls 3 and a front comprising a lower stationary part 4, at the upper end of which a door 5 is hinged so as to open outwardly. An upwardly opening top 6 is hinged to the back 1, thus forming a casing which gives ready access to the front, top and bottom for the purposes hereinafter described.

In the upper portion of the casing is disposed the receptacle for the articles to be sold, which, in the construction illustrated, comprises a holder 7 subdivided by transverse partitions 8 to form a series of vertical compartments 9 which are open at the bottom and top. This holder is provided at each upper rear corner with a pivot plate 10 which engages a similar plate 11 fixed to the side wall of the casing, and having a boss carrying a pivot pin (not shown) which works in an opening in the boss of plate 10. The bosses on the pivot plates are made longer at the right hand side in order to leave sufficient space to receive both the coin slot 12 and the swinging magnetic detector 13. This coin slot starts opposite an aperture 14 in the door 5 and continues first at a slight incline toward the rear of the casing and then straight down so as to discharge the coins between the disks 15 and 16. The coin slot is held in position by angle irons 17 attached at suitable points to the side wall of the casing.

We mount the rotatable ejector in the lower portion of the casing and immediately below the swinging holder 7, it being noted that the bottom of the holder is cut away on an arc struck from its pivotal points so that its bottom edge is always the same distance from the ejector in whatever position it may stand. The ejector comprises an elongated hollow metal form provided with a series of equi-distantly spaced shoulders 19 formed at the front with an abrupt radial face 20, which, from its lower point, continues in a gradual convex curve 21 to the apex of the next shoulder, thus forming a series of pockets or longitudinal grooves, the bottoms of which gradually merge on convex curves

to apexes of a series of shoulders which are equi-distant from the center. This hollow form is supported at each end upon plates 22 which are rotatably mounted upon a central stationary shaft 23.

The check-controlled apparatus, which will now be described, is not claimed as a part of our present invention which is limited to the construction of the pencil handling apparatus. At the left hand end a second plate 24 is bolted to the plate 22 and engages the end of the form and holds it in position between that plate and the disk 15, which is likewise rotatably mounted upon the shaft 23. This shaft 23 at its left hand end is mounted in the bearing 24' having a spacing washer 25 interposed between the bearing and the plate 24. At its right hand end the shaft carries integral therewith or fixed thereon, a disk 26, which, as seen in Fig. 3, is cut away at 27 to provide for the escape of the coin between said disk and the studs 28 which are mounted on the plate 15 and spaced 120° apart. The disk 16 is likewise rotatably mounted on the shaft on the outside of the disk 26 and is connected by screws or bolts to the end bearing 29 for the shaft. This bearing 29 is in the form of a cap having an annular flange 30 to receive the screws which fasten it to the plate 16 and having its body portion cylindrical so as to turn freely in the side wall 3 of the casing upon washers 31 seated therein. A hand wheel 32 is fastened to the outer end of 29. The flange 30 is toothed to form a ratchet wheel, and a dog 56 pivoted to the wall 3 of the casing engages these teeth to prevent the disk 16 being turned by means of the hand wheel 32 and boxing 29 in more than one direction.

As seen in Fig. 5, the disk 16 carries at opposite points two elongated arcuate ribs or projections 33. These are so positioned that they will not engage the studs 28 when the two disks are in assembled position. The space between the adjacent ends of the ribs is in excess of the width of the coin to control the apparatus but is not sufficient to permit two coins to drop in between them at the same time.

At the front of the casing we attach a pair of plates 34, the upper edges of which have the same arcuate curve as the lower edge of the holder and which extend under the open compartments in the holder to prevent the pencils or other articles therein from dropping out from any but the compartment which stands in position to deliver onto the ejector. The forward end of this plate is curved so as to extend around and over the ejector to a point substantially in line with the shoulder 19 of the pocket then in position to receive and eject a pencil.

To the rear wall of the casing we attach a pair of plates 35, the front edges of which

are struck on a curve from the center of the shaft 23 and on a radius sufficient to let the shoulders 19 clear of the front edge of the plates. The rear curved edge of the plates 34 are struck on a similar arc. The plates 35 have connected to them a discharge chute 36 which passes through an aperture 37 in the front wall 4 and is turned up at 38 to form a stop for the pencil.

As a means for insuring the feed of the pencils or other articles to the ejector, we provide a narrow roller 39 mounted on an axis 40 between the arms of a yoke 41, the shank of which is provided with oppositely disposed lugs 42, which are pivotally supported between a bearing plate 43 and the rear wall 1 of the casing. A spring 44 also fastened to the rear wall 1 exerts a downward pressure upon the yoke 41, tending to hold the roller 39 in engagement with the ejector 19.

It will be noted by reference to Figs. 1 and 2, that the lower ends of the division walls 8, forming the compartments 9, are cut away to leave a passage way 45 for the roller and its yoke so that the lower end of the holder when emptied, will swing rearwardly over the roller which will therefore successively project into the several compartments 9 of the holder. By this means the roller, as the compartments beginning at the rear are successively emptied, will engage and act upon the pencils in each of the compartments in turn.

With the coin in the position just described, the operation of the apparatus is as follows:—The top of the casing is first lifted and the several compartments 9 filled with pencils. The bottom pencil of the rear compartment will rest in the upper pocket of the ejector between a shoulder 20 and the roller 39, which rests upon the curved surface 21 of the pocket. If now the hand wheel 32 be turned in a forward direction, the disk 16 will rotate until a rib 33 strikes the coin 55 (Fig. 3). When this rib strikes the coin it transmits motion through the coin to the stud 28 and to the disk 15, which in turn moves the ejector 18. Referring to Fig. 6, it will be seen that as the disk 15 and ejector moves in the manner just described, the roller 39 will ride up over the pencil and over the shoulder 19, moving from a position tangent to the two lower pencils in the compartment (see Fig. 2), to a position tangent to next to the bottom pencil in that compartment (see Fig. 6). As the ejector continues in rotation, the roller moves forcing the bottom pencil down the inclined curve 21 leading to the succeeding pencil pocket in the ejector and drawing down with it the next to the bottom pencil and finally assuming a tangent position to the two pencils next to the one in the pencil pocket, as seen in Fig. 2. Meanwhile the

continued movement of the ejector brings the pencil that is being ejected, and which has been held in its pocket by the curved front wall of the plates 35, in the position to finally drop into the discharge chute 36. Should a second coin be interposed before the complete turning of the ejector has taken place it will not interfere by reason of the fact that it will fall upon and be supported by the lug 33, which is in engagement with the coin at that time between the disks. As the coin moves around between the disk 36 and the stud 28 it comes opposite the notch 27, which is designed to permit the coin to escape between the disk 26 and the stud 28 and drop into the coin till at the bottom of the casing. As each successive compartment, beginning at the rear, is emptied, the feed roller projects through the slot or passage 45 and engages the pencils in the last loaded compartment until the entire holder has been emptied. It will be noted that feed roller 39 always leaves the bottom pencil free, as seen in Figs. 2 and 6.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a vending machine, a movable multiple compartment holder for the articles to be vended, ejector mechanism to receive the articles from said holder and discharge them from the machine, and means to adjust the position of said holder so that its filled compartments are successively brought into position above said ejector mechanism as the compartments preceding them are emptied, said means comprising a device which successively engages the lower articles in each compartment and holds the holder against movement until said compartment is empty.

2. In a vending machine, a multiple compartment swinging holder for the articles to be vended, ejector means to receive the articles from said holder and discharge them from the machine, and automatic means to position said holder and bring the loaded compartments successively into position above the ejector means, said compartment being adapted to swing by gravity against said automatic means and to adjust itself free of the operating mechanism, substantially as and for the purposes described.

3. In a vending machine, an ejector mechanism comprising a rotatable body provided with pockets to receive the articles, a chute to deliver the articles to said ejector means, and a means for feeding the articles and controlling the adjustment of said body which means rests upon said body and projects into said chute in position to engage

and press downwardly an article above the one resting on said body.

4. In a vending machine, a chute for the articles to be vended having a slot, a roller mounted in a swinging support and arranged to project through said slot and engage the articles within said chute, a rotary ejector drum having pockets to receive said articles, said roller resting upon said drum, and a discharge chute for the articles received from said ejector.

5. In a vending machine, a chute for the articles to be vended having a slot in its side, a pivoted feed device projecting through said slot and engaging the articles in said chute, an ejecting apparatus formed with a plurality of circumferentially tapering pockets and upon which said feed device rests, guard means to retain the articles in said pockets as the ejector turns, and a discharge chute into which the articles fall from said pockets, substantially as described.

6. In a vending machine, a chute for the articles to be vended, a roller mounted upon a swinging support and adapted to project through an opening into said chute, an ejector for the articles upon which said roller rests, said roller in all positions standing clear of the bottom-most article whether it be in the pocket or on the point of falling therein and being adapted to engage and exert a downward pressure upon an article above the bottom-most articles, as and for the purposes described.

7. In a vending machine, a multiple compartment holder pivoted so as to swing by gravity and bring its compartments successively in discharging position, ejector means to successively receive and discharge the articles from a given compartment, and means to control the positioning of the holder so that one compartment empties before the next filled compartment is brought into discharging position, said means comprising a device which engages the lower articles in each compartment and thereby arrests the holder against swinging downwardly to present a new compartment into the discharging position until the compartment from which articles are being discharged has been emptied, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN V. MORRIS.
HENRY E. OLIVER.

Witnesses:

HINDS PEEVEY,
FROMIE WELSH.

It is hereby certified that the assignee in Letters Patent No. 986,490, granted March 14, 1911, upon the application of John V. Morris and Henry E. Oliver, of Birmingham, Alabama, for an improvement in "Coin Vending-Machines," should have been described and specified as *Standard Vending Company* instead of "Standing Vending Company;" and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 11th day of April, A. D., 1911.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.