R. C. BURNHAM.

VENDING MACHINE.

APPLICATION FILED JAN. 5, 1921.

1,424,150. Patented Aug. 1, 1922.

4 SHEETS—SHEET 1.

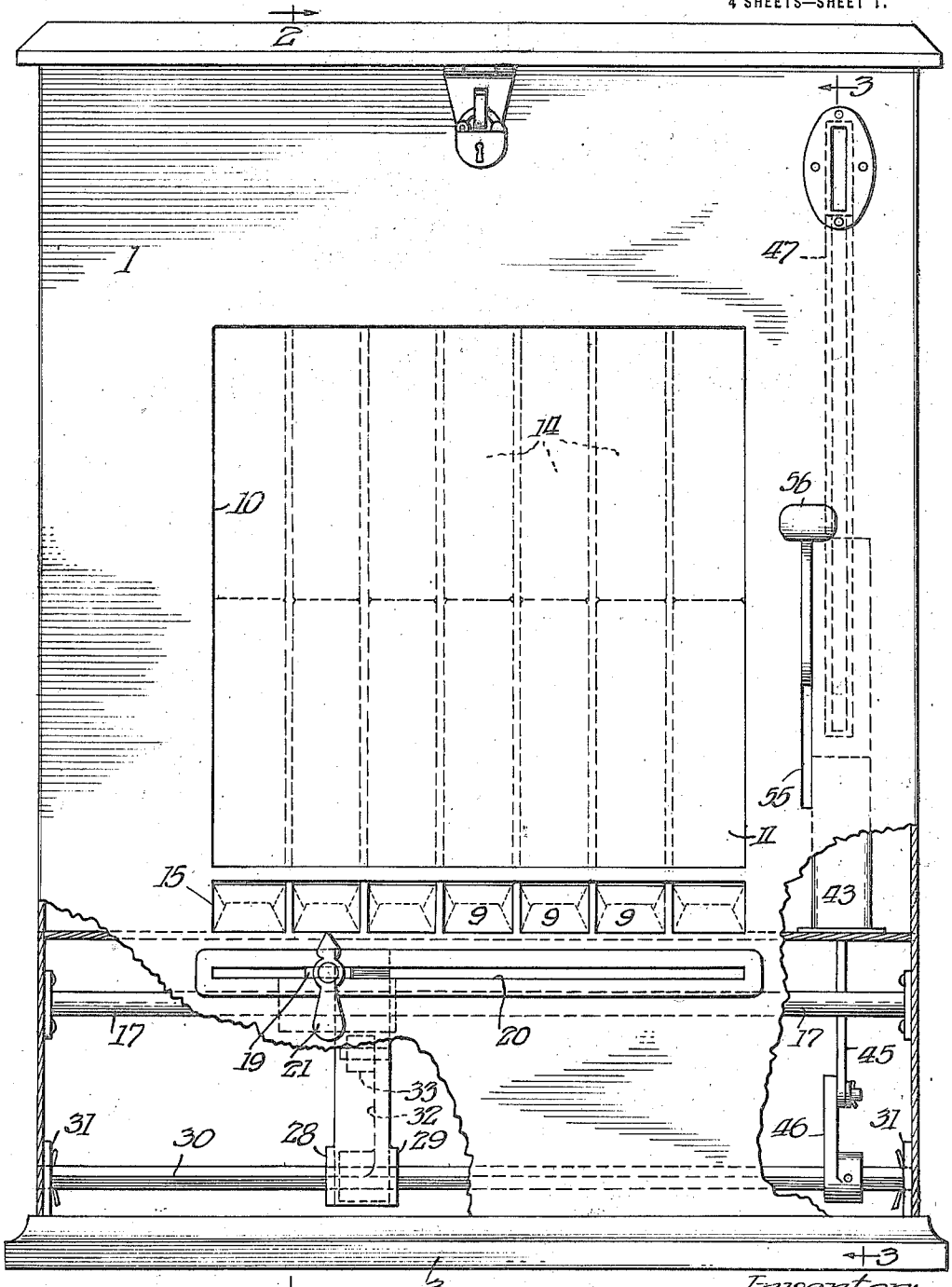


Fig. 1

Inventor:
Robert Craig Burnham.
By Fisher, Dowle, Clapp & Doans.
Attys.

R. C. BURNHAM.

VENDING MACHINE.

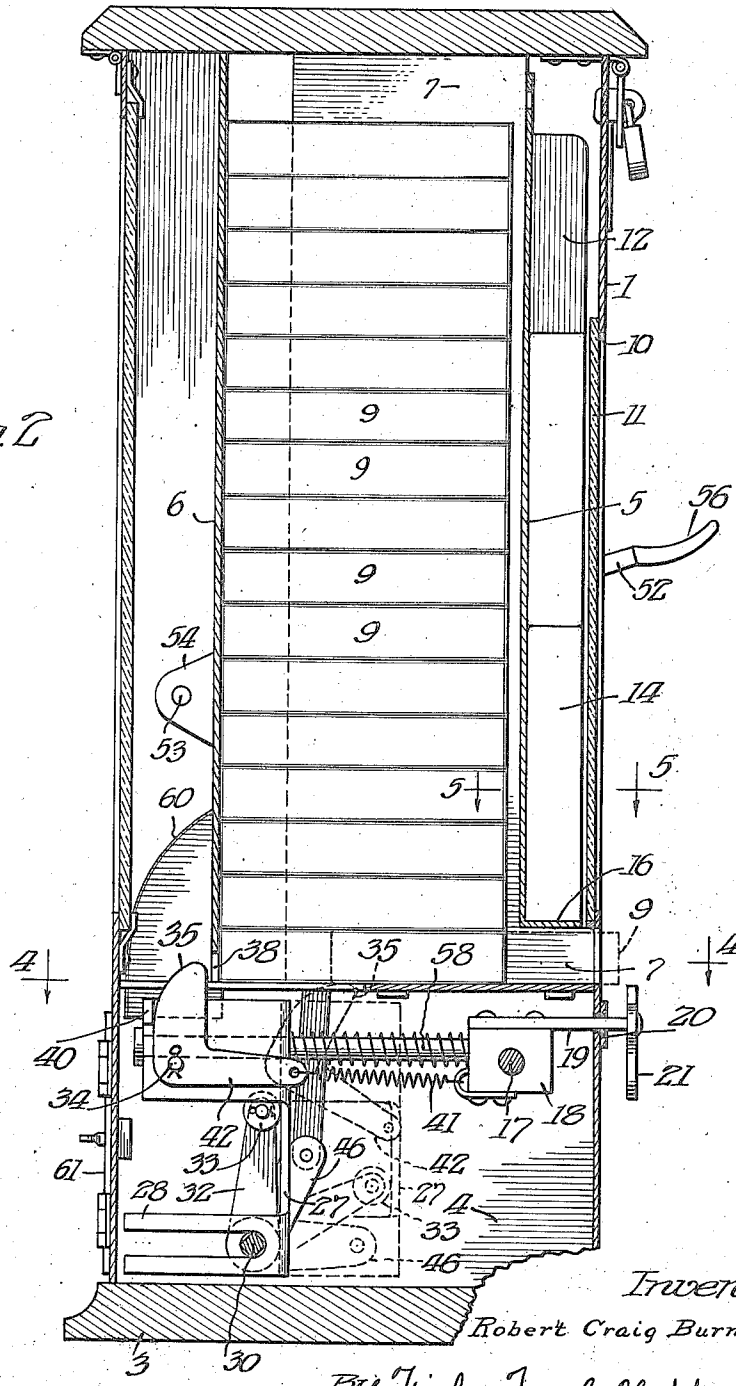
APPLICATION FILED JAN. 5, 1921.

1,424,150.

Patented Aug. 1, 1922.

4 SHEETS—SHEET 2.

Fig. 2.



Inventor:

Robert Craig Burnham.

By Fisher, Towle, Clapp & Soans.

attys.

R. C. BURNHAM.

VENDING MACHINE.

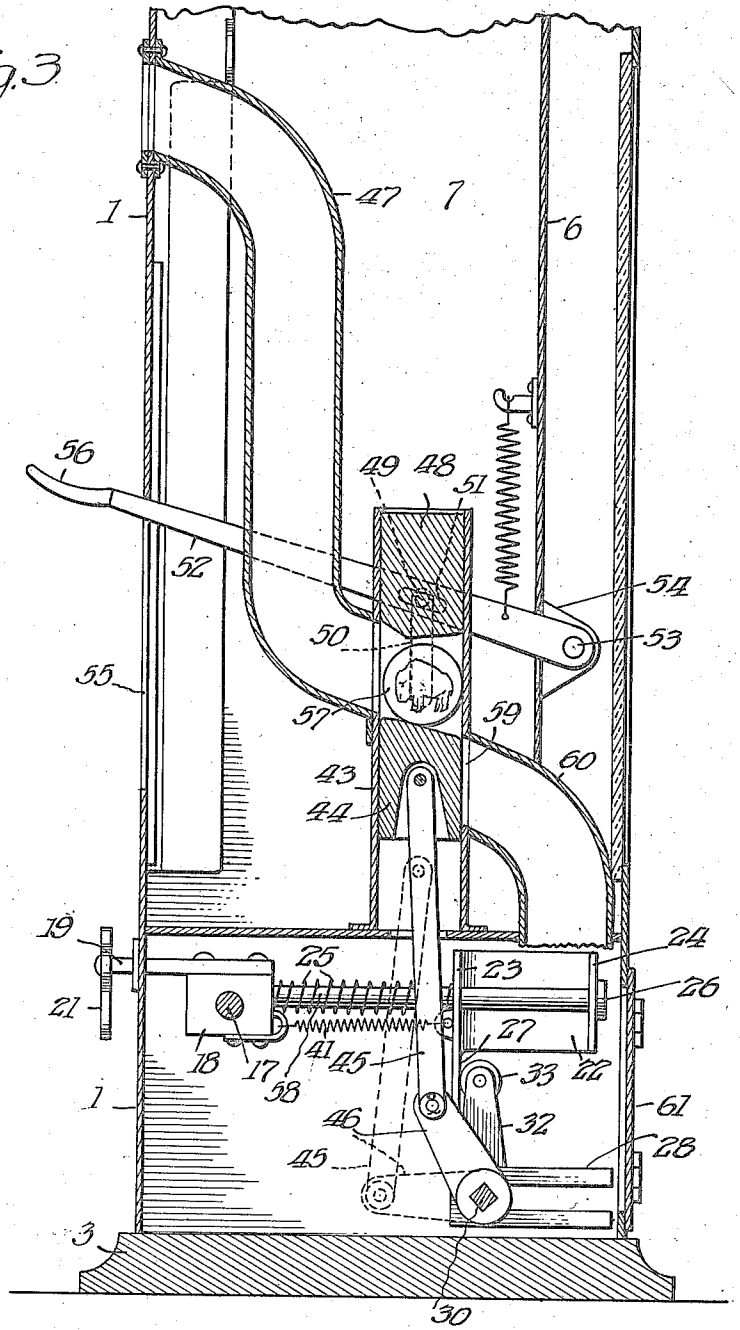
APPLICATION FILED JAN. 5, 1921.

1,424,150.

Patented Aug. 1, 1922.

4 SHEETS—SHEET 3.

Fig. 3



Inventor:

Robert Craig Burnham.

By Fisher, Fowle, Clapp & Soons.

Attys

R. C. BURNHAM.

VENDING MACHINE.

APPLICATION FILED JAN. 5, 1921.

1,424,150.

Patented Aug. 1, 1922.

4 SHEETS—SHEET 4.

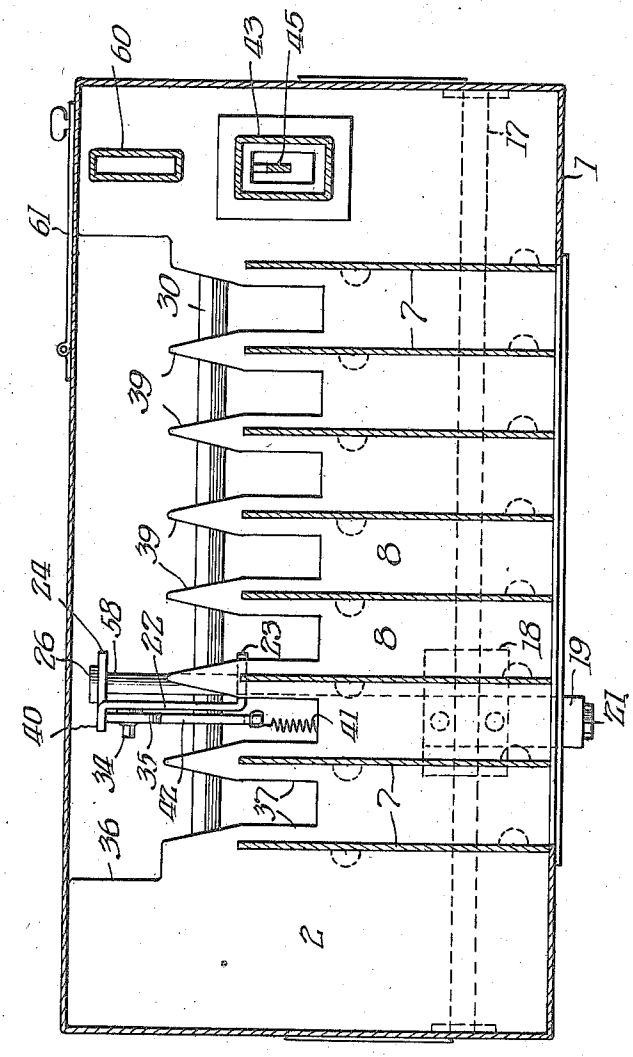


Fig. 4

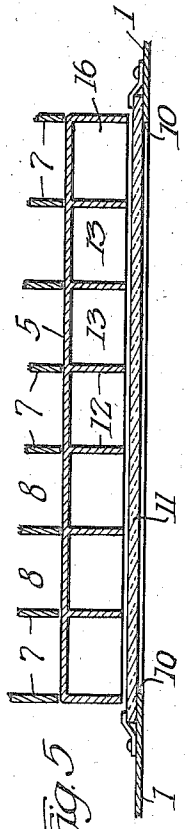


Fig. 5

Inventor:
Robert Craig Burnham.
By Fisher, Towle, Clapp & Soans.
attys.

UNITED STATES PATENT OFFICE.

ROBERT CRAIG BURNHAM, OF RICHLAND CENTER, WISCONSIN.

VENDING MACHINE.

1,424,150. Specification of Letters Patent. Patented Aug. 1, 1922.

Application filed January 5, 1921. Serial No. 435,125.

To all whom it may concern:

Be it known that I, ROBERT CRAIG BURNHAM, a citizen of Richland Center, in the county of Richland and State of Wisconsin, have invented certain new and useful Improvements in Vending Machines, of which the following is a specification.

My invention has reference more particularly to a machine of the type which is rendered operable, by inserting a coin, to extract a package or article therefrom, as, for example, gum, fruit tablets, or similar articles.

In dispensing articles of this character, it is desirable to have a machine in which a variety of different articles may be contained, and have coin controlled ejecting means which enables the operator to select any one of the variety of articles and remove same from the machine upon inserting the proper coin.

The principal objects of my invention are to provide a dispensing machine having magazines for a number of different articles, any one of which may be selected at the will of the operator and removed from the magazine; to provide a plurality of magazines having a single ejector which may be adjusted to select and remove an article from any one of the magazines; to provide an improved coin control for the ejecting magazine; to provide convenient display compartments corresponding to the positions of adjustment of the ejecting mechanism and indicating the article which will be procured from the machine, and, in general, to provide an improved vending machine which is simple and inexpensive and may be utilized to dispense a large number of different articles without the necessity of having a separate mechanism for each article.

On the drawings:—

Fig. 1 is a front view of a vending machine constructed in accordance with my invention and having portions of the casing broken away to disclose details of the ejecting mechanism;

Fig. 2, a vertical sectional view on the line 2—2 of Fig. 1;

Fig. 3, a vertical sectional view on the line 3—3 of Fig. 1;

Fig. 4, a horizontal sectional view on the line 4—4 of Fig. 2; and

Fig. 5, a fragmentary view of the display compartments on the line 5—5 of Fig. 2.

Referring to the drawings, the reference numeral 1 indicates a cabinet of any suitable form having a horizontal partition 2 located at a distance above the base 3 of the cabinet to provide a compartment 4 for the ejecting mechanism. Above this partition are front and rear walls 5 and 6 which are parallel with and spaced respectively from the front and rear walls of the cabinet and have vertical division plates 7 extending therebetween to form a plurality of magazines 8, each of which is adapted to contain a stack of packages 9 of gum or fruit tablets and the like which are commonly put up in package form so as to be readily dispensed in a vending machine of this character. A large opening 10 of a width corresponding to the combined width of the magazines 8 is provided in the front wall of the cabinet and closed with a window 11 through which articles therebehind are visible, and the space between the window 11 and the wall 5, which forms the front of the magazines, is separated by vertical division plates 12 spaced apart to form a display compartment 13 in front of each magazine 8 in which packages or articles may be placed in an upright position, as shown at 14 in Fig. 2, to indicate to the purchaser the contents of the cabinet and the particular kind of article which will be delivered by the machine when the ejecting mechanism is set to register with the particular display compartment.

The partition 2 which forms the bottom of the magazines 8 is extended to the front wall of the cabinet 1, which latter has a slot 15 directly above the partition 2 and extending across the front of the cabinet to provide an outlet from all of the magazines 8, said slot being of a suitable vertical dimension to permit a single article from any of the magazines 8 to pass therethrough. The front wall 5 of the magazines terminates at the level of the upper edge of the slot and has a flange 16 extending forwardly therefrom to afford a bottom closure for the display compartments 13.

Mounted in the compartment 4 and extending across the machine is a shaft or rod 17 on which a block 18 is mounted to slide, said block having an arm 19 secured thereto

and projecting through a slot 20 in the front wall of the machine and provided with an indicator 21 on the outer end whereby the block 18 may be adjusted along the rod 17. A stem 58 projects rearwardly from the block 18 and has a frame 22 mounted to slide thereon, said frame consisting of a plate with end portions 23 and 24 bent laterally therefrom and provided with apertures for the stem 58. There is a spring 25 on the stem 58 bearing at one end against the block 18 and at the other end against the portion 23 of the frame 22 so as to hold the latter at the rear of the stem 58 against the head 26 with which the stem 58 is provided. The inturned portion 23 of the frame 22 has an arm 27 extending downwardly therefrom and formed with a pair of rearwardly extending forks 28 and 29 at the lower end, the arms of each of which embrace the square shaft 30, which shaft extends from side to side of the machine and has the ends journaled in the bearings 31 so that the shaft may be oscillated. Mounted on the shaft 30 between the forks 28 and 29 is a crank arm 32 which has a square aperture slidably fitting the square shaft 30 so that the crank arm 32 may be adjusted lengthwise of the shaft 30 and is caused to turn with the shaft 30 in any position of adjustment therealong, and this crank arm 32 has a roller 33 at the upper end engaging against the rear face of the depending arm 27 of the frame 22 so that when the shaft 30 is rotated in a counter clockwise direction as viewed in Fig. 3, the frame 22 is moved forwardly on the shaft 58 against the tension of the spring 25. Pivoted at 34 on the frame 22 is an angular member having an upwardly extending arm 35 and a forwardly extending arm 42. The arm 35 projects above the partition 2, which is cut away at 36 to provide an opening along which the upper end of the arm 35 travels when the ejecting mechanism is adjusted to register with the various magazines, and there are slots 37 in the partition 2 extending from the cut-away place 36 under each magazine 8 to admit the upper end of the arm 35 when the latter is moved forwardly to eject an article from the magazine. The rear wall of each magazine is cut away directly above each slot 37, as at 38, to form a passageway for the upper end of the arm 35, and the rear extremities of the portions of the partition 2 between the slots 37 are tapered, as at 39, so as to direct the arm 35 into the proper slot 37 in case the arm may not be adjusted to exactly align with the slot 37. A lug 40 projects laterally from the frame 22 behind the arm 35 to prevent the latter from tipping back when the frame 22 is moved forwardly to cause the arm 35 to eject a package from one of the compartments, and this arm 35 is normally held in upright position against the stop 40 by a light spring 41 which has the forward end connected to the block 18 and the rear end connected to the forward end of the arm 42 of the angular member.

When the frame 22 has been moved forwardly to eject the lowermost article from the magazine and the latter removed from the magazine the stack of articles thereabove drops down in the magazine, and at such time the arm 35 swings forwardly on the shaft 34 to the position shown by dotted lines in Fig. 2, so that the stack of articles in the magazines does not interfere with the return movement of the member 35, which latter, as it passes out from under the stack of articles, is caused to assume the upright position by reason of the pull of the spring 41 on the arm 42.

For controlling the operation of the ejecting mechanism, there is a narrow casing 43 at one side of the machine having a distance between the lateral walls substantially equal to the thickness of the coin which is required to be deposited in payment of the article which is to be removed, and this casing has a block 44 mounted to slide therein and connected by the link 45 with the outer end of the crank arm 46 carried by the shaft 30. A coin chute 47 leads from the front of the machine downwardly into the casing 43 directly above the normal position of the slide 44 so that a coin inserted in the upper end of the chute 47 will be delivered by gravity into the casing 43 and held therein against the rear wall of the casing 43 and supported by the block 44.

Mounted in the casing 43 directly above the lower end of the chute 47 is another block 48 which has a pin 49 extending laterally through a slot 50 in the side wall of the casing 43 and engaged in a slot 51 of the lever 52 which is pivoted at its rear end, as at 53, on a bracket 54 and projects forwardly through a slot 55 in the front wall of the machine and has a finger grip 56 at the forward end. The range of movement of the lever 52 is such that when there is no coin interposed between the blocks 44 and 48 the operation of the lever 52 will have no effect on the blocks 44, but when a coin is interposed between the blocks, as indicated at 57 in Fig. 3, the coin forms a connection between the blocks so that the downward movement of the lever 52 moves the blocks 44 downwardly and through the link 45, and the crank arm 46 rotates the shaft 30 in the direction of the arrow (Fig. 3) and through the crank arm 32 forces the frame 22 forwardly on the rod 58 so that the arm 35 is moved into one of the slots 37 in the bottom wall of one of the magaiznes 8 and forces the lowermost article 9 out through the slot

15 in the front of the machine so that the forward end of the article may be grasped by the operator and the article thus removed.

In order to release the coin 57 from its position between the blocks 44 and 48, when the lever 52 is operated to eject a package, the casing 43 is provided with an opening 59 in the rear wall opposite the position to which the coin 57 is moved by the downward movement of the lever 52, and the upper edge of the block 44 is arranged at a rearward and downward inclination and the lower portion of the block 48 at a rearward and upward inclination so that these two edges act upon the periphery of the coin, when the lever 52 is depressed, in such a manner as to cause the coin to be ejected from between the blocks 44 and 48 out through the opening 59. A chute 60 leads from the opening 59 to convey the coin into the compartment 4 at the base of the machine, and there is a door 61 at the back of the machine leading into this compartment which affords access for removing the coins.

In using this machine, each of the compartments 8 is filled with a stack of articles, such as packages of chewing gum, fruit tablets, or the like, the top of the cabinet 1 being hinged or otherwise removable to enable the filling of the magazines and compartments 13 to be readily effected. Each compartment 13 is filled with articles of the same kind as contained in the magazine directly therebehind, these articles being set up on end, one above the other, as shown in Fig. 2, so that the wrapper of the article is visible through the glass 11 and indicates the character of the article which one may secure by setting the ejecting mechanism in line with that particular compartment.

To obtain an article from this machine, the indicator 21 is grasped by the purchaser and adjusted transversely of the machine in front of the particular compartment 13 containing the article desired, and when so positioned the arm 35 of the ejecting mechanism is directly in line with the slot 37 of the magazine 8 directly behind such compartment 13. A coin is then inserted in the upper end of the coin chute 47 and travels downwardly therein into the casing 43 between the blocks 44 and 48 where it is held by engagement with the rear wall of the casing 43. The lever 56 is then depressed so as to move the blocks 48 downwardly in the casing 43, and because of the coin 57 being interposed therebetween, the block 44 is forced downwardly in the casing 43 by the operation of the lever 52 and rotates the shaft 30, through the link 45 and the crank arm 46, a partial turn in a counter clockwise direction as viewed in Fig. 3.

Inasmuch as the crank arm 32 is loosely keyed on the shaft 30 between the forks 28 and 29 of the frame 22, this crank arm 32 slides along the shaft 30 when the frame 22 is adjusted, by manipulating the indicator 21, and the roller 33 bears against the depending arm 27 in any position of adjustment of the frame 22. When therefore, the shaft 30 is partially rotated, as before indicated, the crank arm 33 moves therewith and moves the frame 22 forwardly on the stem 58, thereby projecting the upper end of the arm 35 forwardly into the rear end of the adjacent magazine 8 and as this arm does so it engages the rear end of the lowermost package 9 in the magazine and slides the package forwardly until the front end thereof projects through the slot 15 in the front of the machine, sufficiently to be grasped and withdrawn by the purchaser. As soon as this package is withdrawn the stack of articles remaining in the magazine drops down and if the frame 22 has not been returned to the normal position before the article purchased is withdrawn, the pressure of the stack of articles 9 tips the arm 35 forwardly, as shown by dotted lines in Fig. 2, thereby allowing this arm to be freely returned to the normal position.

From the foregoing it will be noted that I have provided a vending machine which is simple in form and may be constructed at a very small expense, particularly as the same coin control and ejecting mechanism is utilized for the entire number of magazines, thereby avoiding duplication of parts, the ejecting mechanism being merely shiftable to operate in connection with any of the magazines and remaining under the control and capable of operation by the coin controlled mechanism in all positions to which it is capable of being adjusted.

While I have shown and described my invention in a preferred form, I am aware that various changes and modifications may be made without departing from the principles of the invention, the scope of which is to be determined from the appended claims.

I claim as my invention:

1. In a vending machine, the combination of a plurality of stationary magazines, each adapted to contain a number of articles superposed one above the other, ejecting means adapted to be selectively adjusted to a corresponding position adjacent the lower end of each magazine; and a coin controlled device for actuating said means to effect the removal of the article from the selected magazine.

2. In a vending machine, the combination of a plurality of stationary magazines, each adapted to contain a number of articles, means adapted to be selectively positioned adjacent each magazine and operable to remove an article from the magazine adjacent to which it is positioned, and a member rendered effective by inserting a coin in the machine to actuate said ejecting means.

3. In a vending machine, the combination

of a plurality of stationary magazines arranged side by side, each adapted to contain a number of articles and having an outlet at the bottom, an ejector having an adjusting member at the exterior of the machine whereby the ejector may be selectively positioned adjacent each magazine, and a coin controlled actuating device adapted to operate the ejector in the various positions of adjustment of the latter so as to remove an article from the magazine adjacent to which the ejector is positioned, through the aforesaid outlet at the bottom of the magazine.

4. In a vending machine, the combination of a plurality of magazines arranged side by side and each having an outlet at the bottom thereof, a coin controlled operating mechanism having a shaft extending in proximity to each magazine, and an ejecting mechanism slidably mounted on said shaft so as to be selectively positioned adjacent each magazine and operable by said shaft in its adjusted positions to eject an article from the magazine adjacent to which it is positioned.

5. In a vending machine, the combination of a plurality of magazines, each adapted to contain a number of articles in superposed relation and each having an outlet at the bottom through which articles are removable from the magazine to the exterior of the machine, a shaft having an ejecting mechanism slidably mounted thereon so as to be selectively adjusted along the shaft to positions adjacent the magazines and operable in the adjusted positions by the shaft to eject the lowermost article from the magazine through the aforesaid outlet, means normally ineffective for operating the shaft to actuate the ejecting mechanism, and means for introducing a coin from the exterior of the machine so as to render the operating mechanism effective to actuate the shaft.

6. In a vending machine, the combination of a plurality of magazines arranged side by side, each having a bottom wall with a slot at the rear extending under the magazine and each having an opening in the front wall adjacent the bottom through which articles may be removed, an ejector movable along the rear of the magazines so as to be selectively positioned to register with the slots and having a finger operable in the slot to eject an article from the magazine through said opening in the front wall, and a coin controlled device for actuating the ejecting mechanism in the various positions of adjustment of the latter.

7. In a vending machine, the combination of a cabinet having a plurality of magazines arranged side by side, a display compartment in front of each magazine, a transparent wall in front of each display compartment, an ejecting mechanism having an operating member at the front of the machine and slidable transversely of the machine under the display compartments for adjusting the ejecting mechanism adjacent the magazine which corresponds to the compartment at which the operating member is positioned, and a coin controlled operating mechanism for operating the ejecting mechanism.

8. In a vending machine, the combination of a plurality of magazines arranged side by side, a frame selectively adjustable to positions adjacent each magazine and operable in the adjusted position to eject an article from the magazine adjacent to which it is positioned, and a member shiftable on the frame so as to extend into the magazine during the ejecting movement of the frame and adapted to be withdrawn from the magazine to permit return movement of the frame while the member is withdrawn from the magazine.

9. In a vending machine, the combination of a plurality of magazines, each adapted to contain a number of articles superposed one above the other, an ejector adjustably mounted so as to be optionally positioned adjacent the lower end of each magazine for selectively ejecting articles from the magazines, and coin control means whereby the ejector is manually operable to expel a package from the selected magazine.

10. In a vending machine, the combination of a plurality of magazines, an ejector adapted to be optionally positioned adjacent each magazine for expelling an article from the selected magazine, an operating lever projecting outside the machine and normally capable of movement independently of the ejector, and means rendered operative by inserting a coin in the machine to afford a connection between the ejector and operating member so that normal ineffective movement of the latter operates the ejector.

11. In a vending machine, the combination of a plurality of magazines, each adapted to contain a plurality of articles in superposed relation, a carriage movable transversely of the magazine, a handle projecting outside the machine for moving the carriage, an ejector mounted on the carriage and adapted to be optionally positioned by the movement of the latter adjacent the various magazines, coin control mechanism mounted in a fixed position and having an adjustable connection with the ejector for operating the latter in any position of adjustment of the carriage, said ejector being pivotally mounted on the carriage and normally held in an upright position for ejecting articles from the magazines and adapted to be automatically thrown down below the bottom of the magazines by the weight of the articles therein after the expelling operation is completed.

ROBERT CRAIG BURNHAM.