

May 22, 1934.

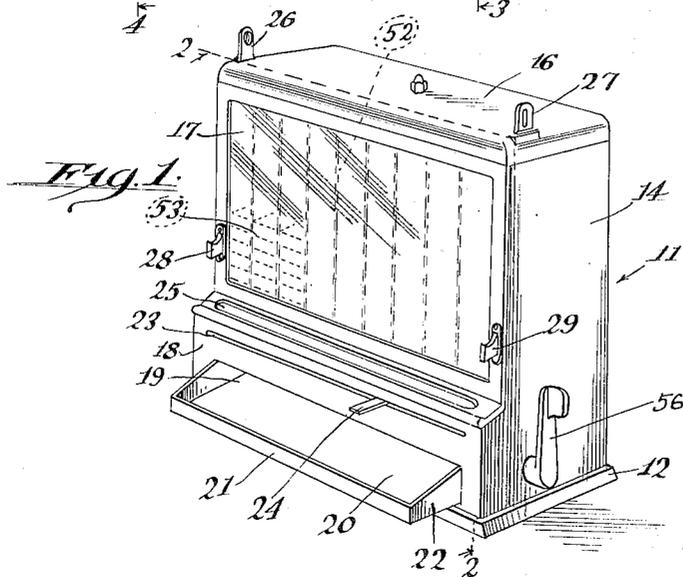
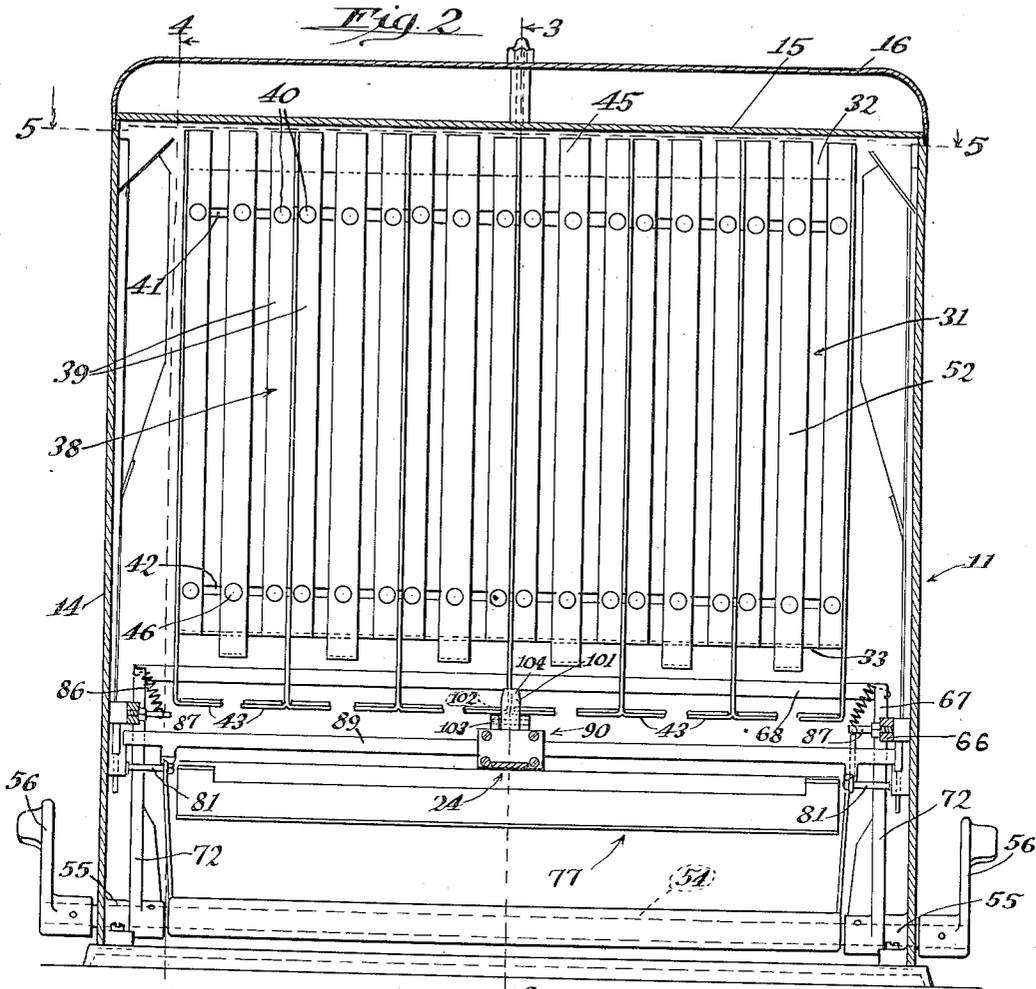
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1,959,688

VENDING MACHINE

Filed April 22, 1929

3 Sheets-Sheet 1



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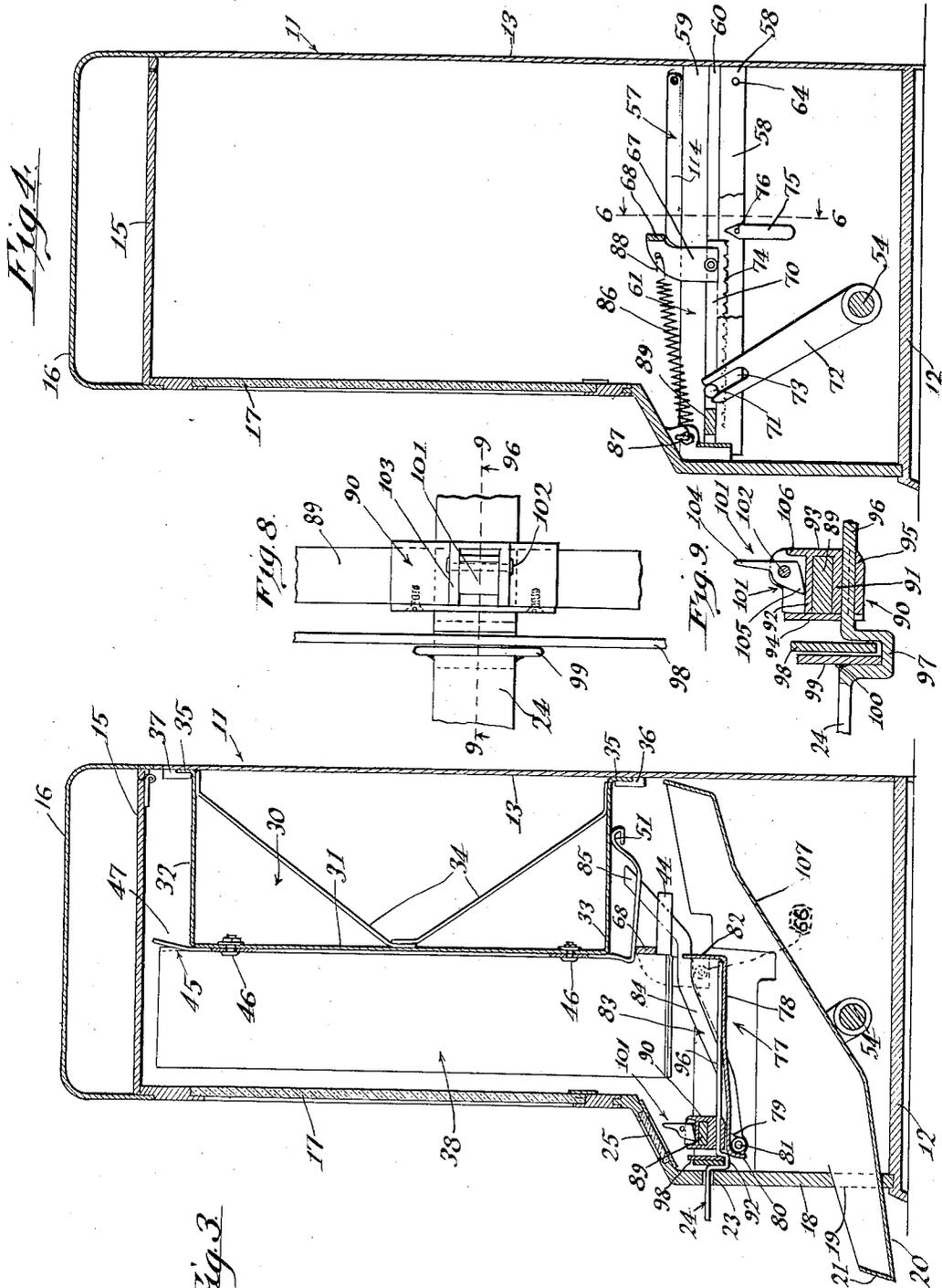
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3 Sheets-Sheet 3

Fig. 5.

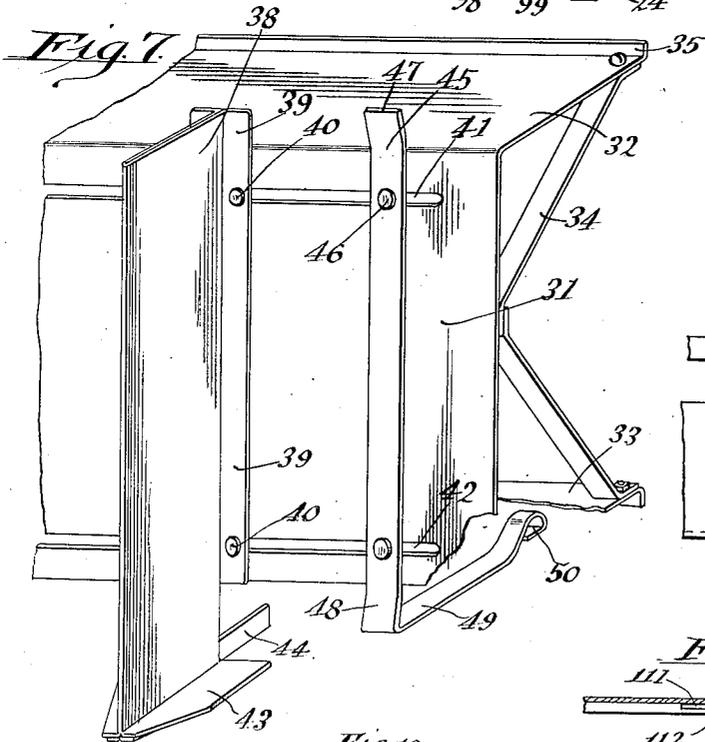
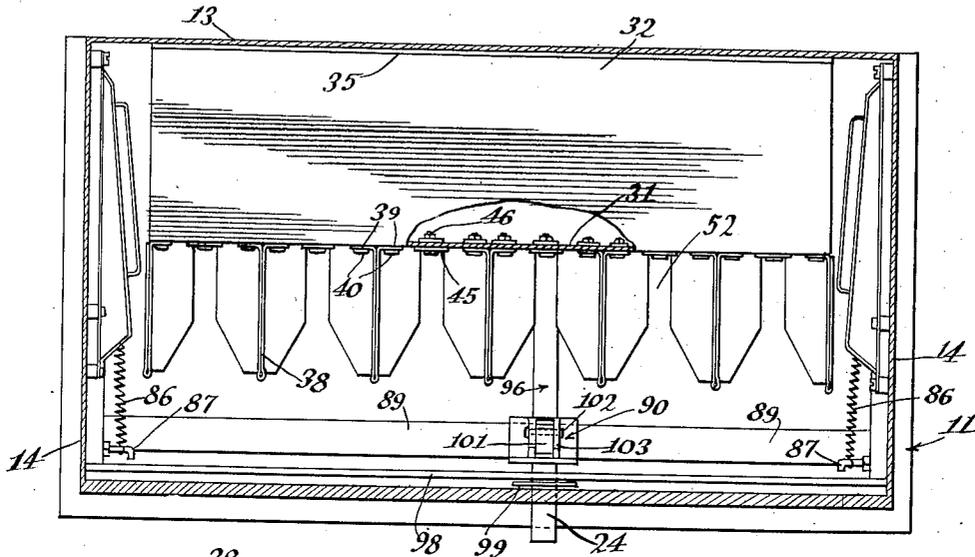


Fig. 6.

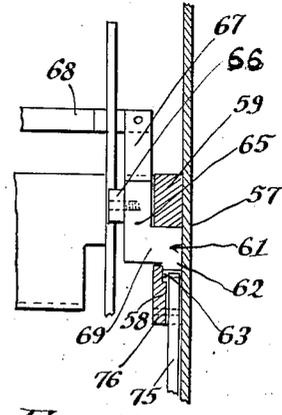


Fig. 11.

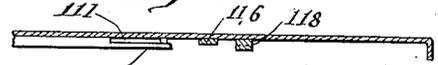
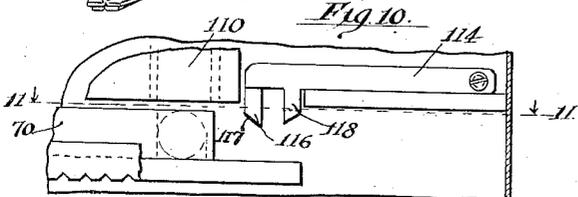
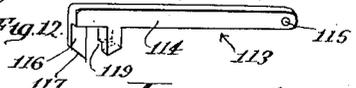


Fig. 12.



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UNITED STATES PATENT OFFICE

1,959,688

VENDING MACHINE

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Application April 22, 1929, Serial No. 357,148

7 Claims. (Cl. 194—58)

My invention pertains to a vending machine which may be coin operated, a particular feature of the invention in this case residing in the vending device.

5 An object of my invention is a vending device preferably for packaged articles, in which any specific article may be selected from different stacks of different articles. In other words my invention pertains to a selective type of vending articles or goods arranged in a plurality of stacks or vertical columns.

10 A more detailed object of my invention in this connection is in selectively vending the lowermost package from anyone of a plurality of stacks by shifting a pusher device to the particular stack and then operating the pusher device to remove the lowermost package. By this arrangement the pusher device may be moved along the row of stacks until the operator stops the device at the particular stack of articles desired. A controlling or manipulating device is then operated which slides the pusher device underneath the lowermost package of the stack selected and vends such package.

15 Another object of my invention is a construction for holding packages and vertical stacks in such a manner that the size of the compartments may be varied to accommodate packages of different dimensions and in this connection I have a combinational object of varying the size of the compartments of the stacks for different size packages and selectively choosing and vending a package from any particular stack.

20 Another object of my invention is in having a baffle device located underneath the row of stacks, this device preventing a person from disengaging a package from any stack without operating the machine in the proper manner. In other words the baffle device prevents the removal of packages without operating the coin device where the vending machine is interconnected with a coin controlled mechanism. In this connection I utilize a pivotally mounted tray or the like with a vertical edge or rim and this is raised and lowered by movable cam-shaped arms which arms are operated upon by rollers, the rollers being shiftable in the operation of the vending machine.

25 My invention is illustrated in the accompanying drawings, in which,

Figure 1 is a perspective view of my vending machine in the closed position;

30 Fig. 2 is a vertical longitudinal section on the

line 2—2 of Fig. 1, in the direction of the arrows, showing the front cover removed;

Fig. 3 is a vertical transverse section taken on the line 3—3 of Fig. 2 in the direction of the arrows;

Fig. 4 is a vertical transverse section on the line 4—4 of Fig. 2 in the direction of the arrows;

Fig. 5 is a horizontal section on the line 5—5 of Fig. 2 in the direction of the arrows;

Fig. 6 is a detail vertical longitudinal section on the line 6—6 of Fig. 4 in the direction of the arrows;

Fig. 7 is a front perspective view partly broken away, showing details of the adjustable compartments for the stacks of articles.

Fig. 8 is a plan view of part of the selector; Fig. 9 is a vertical detail section on the line 9—9 of Fig. 8 in the direction of the arrows.

Fig. 10 is a partial elevation showing a coin control device linked with my vending machine;

Fig. 11 is a detail horizontal section on the line 11—11 of Fig. 10 in the direction of the arrows;

Fig. 12 is a perspective view of the locking latch.

The machine utilizes a cabinet-like structure designated generally by the numeral 11 having a base plate 12, a back wall 13, end walls 14, a hinged top 15, a movable cover 16, a removable front having a glass panel 17, a base molding 18. This latter has an opening 19 with the discharge tray 20 to receive the packages. This tray has a rim 21 extending along the front of the machine and side rails 22. The molding is provided with a longitudinal slot 23 through which operates the selector bar 24 and at the top of the molding there is a glass window 25 to allow inspection of the selector bar and the pusher device connected thereto. The machine is provided with two coin slots 26 and 27 for coins of different denominations, such as nickels and dimes and there are two slug discharging pockets 28 and 29 for slugs placed into the coin slots to be again delivered to the party operating the machine.

The package holder designated generally by the numeral 30 is illustrated particularly in Figs. 2, 3, 5 and 7. This comprises a face plate 31 having a top plate 32 and a bottom plate 33 connected thereto with bracing arms 34. There are small flanges 35 on the top and bottom plates. These flanges fit into hook-shaped brackets 36 and 37 on the back wall of the vending machine.

There are a plurality of partitions 38 each being formed with a vertical web 39, the construction preferably being formed by bending a thin sheet of metal to form the partitions and the

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web. Adjusting bolts 40 are secured through the web and through upper and lower slots 41 and 42 in the plate 31. Horizontal shelves 43 are secured to the bottom of each of the partitions and extend laterally on both sides of the partition. A tongue 44 extends rearwardly from the partition underneath the bottom plate 33. Between each partition there is a vertical strap 45 secured by adjusting bolts 46 extending through the slots 41 and 42 on the face of the face plate 31. This strap has a slight outward bend 47 at the top and a slight outward bend 48 at the bottom. The strap has a horizontal rearward extension 49 with a loop or eye 50 constructed at its rearwardmost end. The top portion 51 of the eye is adapted to contact with the bottom plate 33 of the package holder.

It will be seen by this construction that there are a plurality of vertical chambers or receptacles 52 in which may be placed the stacks of packages indicated at 53. The machine is particularly adapted for vending cigarettes in packages and the vertical partitions and straps 45 may be adjusted longitudinally of the slots 41 and 42 to accommodate different size packages. The lowermost package of each stack rests on the shelves 43. The lower end of the vertical straps prevents the displacement rearwardly of the upper packages of the stack, allowing only the bottom package to be thrust rearwardly and thus dispensed in the manner hereunder set forth.

The vending of articles is accomplished by the following construction and in the manner indicated, having reference particularly to Figs. 2, 3, 4 and 6:

Extending longitudinally of the vending machine adjacent the bottom there is a rock shaft 54 which is journaled in the side walls as indicated at 55 and has operating crank handles 56 on the outside of the machine at each end. This rock shaft is interconnected with a coin segregating device so that it cannot operate unless the proper coins are placed in the coin slots. This forms a separate invention and a separate application from the present having the title Coin segregator, Serial No. 357,176, filed April 22, 1929.

A track 57 is formed at each end of the machine by utilizing a lower and an upper track bar 58 and 59 with a space 60 therebetween and in this space is mounted a carriage 61 for sliding movement. The carriage is illustrated as being L-shaped and has a lower flange 62 extending downwardly in a space 63 between the lower track bar 58 and the end wall of the machine. This rail is spaced from the end by studs 64. An upper flange 65 extends upwardly on the outside of the upper rail 59 of the track and carries a roller 66 for a purpose hereunder set forth and also a bracket 67 to which is attached a bar 68 extending longitudinally of the machine. The web section 69 of the carriage travels between the tracks and has an extension 70 with a pin 71 thereon. This pin is engaged by a lever 72 having a slot 73 therein, the lever being connected to the rock shaft 54.

The construction is preferably similar at both ends of the machine so that the two levers 72 at opposite ends operate both carriages simultaneously and prevent a twist in the bar 68 connecting both carriages. Each of the carriages is provided with ratchet teeth 74 which are engaged by a pawl 75 pivoted at 76 in the lower rail 58 of the track. This pawl is adapted to prevent return movement of the carriage when the rock shaft is operated until this shaft and the car-

riage moves its complete distance. Then the pawl becomes disengaged from the rack as shown in Fig. 4 and allows a reverse movement.

The baffle device designated generally by the numeral 77 comprises a metal plate 78 (note particularly Fig. 3) which plate has ears 79 at opposite ends with a slightly down-turned front flange 80 extending longitudinally thereof. These ears are mounted on the pivot pins 81 secured to the opposite ends of the machine. There is an upturned flange 82 extending longitudinally of the baffle plate on the inside. This baffle plate has a pair of cam arms 83 fixedly attached thereto. These arms at opposite ends each have a cam track 84 on the lower surface which rides on the roller 66 of each end attached to the carriage. Therefore when the carriage is in its outermost position as shown in Figs. 3 and 4 the baffle device or plate 78 is maintained in its uppermost position so that it is impossible for a person to reach in either by the hand or by a hook-shaped wire and remove the lowermost package from one of the stacks. The flange 82 extends sufficiently high to prevent both reaching such package or removal of it if it could be reached.

The baffle device drops by gravity hinging on the pivots 81 when the carriage is moved inwardly the roller 66 riding on the cam section allowing a downward tilt. This allows rearwardly expelling of a package in a manner hereunder set forth. The carriage is returned after its complete stroke by means of the tension springs 86 at opposite ends of the machine, one end of each spring being secured to an eye 87 secured to the front of the machine and the other end 88 secured to the bracket 67 on the carriage at each end.

The selector for the packages utilizes a transverse bar 89 which is secured between the extensions 70 of the carriage 61. This bar thus extends from side to side of the machine and slides transversely thereof with the carriage. The selector embodies a block 90 which encircles a bar 89 (note Figs. 8 and 9). This has a bottom section 91, a top section 92 on top of the bar 89, an inner wall section 93 and a front removable plate 94. The bottom section 91 has a perforation 95 therethrough and through this extends a flat blade 96. This blade has a U-shaped bend 97 extending underneath a fixed transverse bar 98 which is secured to opposite sides of the machine and there is a short plate 99 secured to one side of the U-shaped bend 97 preferably by welding 100. The finger operating end 24 extends through the slot 23, the blade portion 96 and the end portion 24, are thus preferably formed integral. The blade portion 96 extends nearly to the upturned flange 82 of the baffle device 77 underneath the packages.

A pawl designated generally 101 is mounted on a pivot 102 between ears 103 on the block 90 and is free to pivot so that the finger end 104 may engage the edge of a package when the bar 89 and the block 90 are carried inwardly in the machine. A tip end 105 on the pawl engages the upper wall 92 of the block and prevents the pawl from tipping when it is pressing the package inwardly. On its outward movement the pawl may pivot when contacting with the package and in such inclined position it clears the upper flange 106 of the back wall 93 and thus slides underneath the packages.

The manner of operation of the selector is as follows: By grasping the handle end 24, the selector bar or blade carrying the block 90 may be

slid transversely of the machine on the fixed bar 89 until the pawl 101 is in front of the particular stack from which it is desired to vend a package. The handle arm 56 at either side of the machine may then be operated after the proper coins have been inserted in the coin slots and thus give a rotation to the rock shaft 54. This shaft has the lever 72 on opposite ends which moves the carriages on opposite ends of the machine, thus shifting the carriages 61 and the transverse bar 89 which carries the block 100 and the pawl 101 transversely of the stack of packages and underneath the particular stack from which a package is to be vended. The pawl engages the lowermost packages and shoves it rearwardly.

In this movement the roller 66 is moved with each carriage and allows the dropping of the cam arms 83, the roller contacting with the cam surface 84. This action allows the pivoting of the baffle device 77 having the plate 78 and the flanges 82 downwardly, so that the packages may clear this flange 82. The packages are then deposited on the inner portion 107 of the discharge tray 20 and slid down the inclined portion and are retained in the exposed portion in front of the machine by the rim 21 so that the operator may receive the package. On the return movement of the bar 89 and carriages under the action of the springs 86, at opposite ends of the machine, the pusher pawl 101 is returned to its initial position illustrated in Fig. 3.

It will be seen that this mechanism provides a simple movement for selecting packages, this simply involving the longitudinal movement of the selector across the front of the machine to the particular stack of packages and the transverse movement of the pusher device to vend the lowermost package of such stack.

In Figs. 4, 10, 11 and 12, I illustrate a coin control suitable for use with my vending machine in which the coins may drop down a coin chute designated 110, which chute may be connected to my coin segregator above designated, at each end of the machine. The coins land on the lower rail 58 and are in a position to be engaged by the end of the extension 70 of the carriage 61. This end has a pocket 111 to receive the coins and a projection 112 spaced from the ends 14 of the machine. A pivoted latch 113 is formed of a bar 114 mounted on a pivot pin 115. This bar has a projecting finger 116 on one side with a bevelled end 117 and a rearwardly positioned finger 118 having a notch 119 on one side. This latch lies in such a position that it is in the path of travel of the extension 70 of the carriage.

Presuming there is no coin in the coin pocket, then if the person operating the device moves the carriage so that the extension 70 is thrust rearwardly, the projection 112 passes the side of the finger 116 and strikes the finger 118 of the latch 113, thus preventing operation of the vending machine. However, if there is the proper coin in the coin pocket, this coin is thrust inwardly by the moving extension 70 and strikes the inclined surface 117 of the finger 116, thereby tilting the latch bar 114 upwardly to such an extent that the projection 112 passes underneath the second finger 118.

The notch 119 is for the purpose of allowing passage of the coin past the second finger. The coin falls into the coin pocket and passes clear of the track. As my machine is designed to vend articles only when two coins of the proper value are inserted in the coin chutes, therefore it is necessary for a coin to be positioned at opposite

ends of the machine before the vending mechanism can be operated.

It is convenient in the specification and claims to refer to the elements associated with the selector bar 24 as the selector mechanism with the elements associated with the pawl 101 as the ejector device or mechanism, to designate the rock shaft 54 and the parts associated therewith as a single dispensing or vending mechanism or device, and with these various features of applicant's invention there are the cooperative two coin chutes with their respective coin controlled and actuated elements depicted particularly in Figs. 10 and 11 which interconnect between the single dispensing or vending rock shaft and the ejector mechanism. By this construction, an article having the market value of the two different coins, which coins are usually of different denominations, may be vended, the machine requires the two coins, not being operative without two operating simultaneously, and a single lever 56 may be used to rock the rock shaft and hence to vend the articles.

Various changes may be made in the principles of my invention without departing from the spirit thereof as set forth in the description, drawings and claims.

I claim:

1. In a vending machine, a coin control mechanism comprising in combination a pivotally mounted latch having a finger depending from its outermost end and a second finger spaced inwardly therefrom, a moving bar having a projection with a coin pocket at one side of the projection, the said projection being adapted in the movement of the bar to pass on one side of the outer finger and to engage the inner finger when there is no coin in the coin pocket, and a coin in such pocket being adapted to engage the first finger and elevate said finger allowing passage of the bar underneath the second finger.

2. In a vending machine the combination of a structure having a plurality of receptacles each adapted to contain a different kind of article, a transversely movable bar extending longitudinally in front of said receptacle and having a selector device mounted thereon, means to shift said selector opposite any one receptacle, and means for shifting the said bar from a front to a rear position and, hence, moving the selector, the selector having an ejector means to eject the lowermost article in a receptacle rearwardly, a plurality of coin controlled devices located in a fixed position in relation to the receptacles each adapted to be operated by a different coin, and means operative by a proper coin in each device to release the said bar for transverse movement.

3. In a vending machine the combination of a structure having a row of vertical receptacles each having means to retain a stack of articles therein, a transversely movable bar, a selector device slidable longitudinally of the said bar, an ejector device operating transversely of the receptacles to eject a selected article, a pair of coin controlled devices located in a fixed position in relation to the receptacles each requiring a particular coin, both of said devices having means to restrain movement of the said bar, and two coins of proper value being required to release the restraining means for movement of the said bar and hence the ejection of an article.

4. In a vending machine, the combination of a structure having a plurality of vertical receptacles positioned in a row, means to retain a stack of articles in each receptacle, a bar extending

transversely longitudinally of said row of receptacles, a selector device slidable longitudinally of said bar and having means for manually operating such selector to position the selector in operative relation to any receptacle, an ejector slidably mounted on the selector device to move transversely underneath the receptacles and to engage the lowermost article in any one receptacle, a single dispensing means having an operative connection to said longitudinal bar to move said bar and hence the ejector underneath a receptacle, a plurality of coin controlled devices located in a fixed position in relation to the receptacles, each requiring a coin of a specific value, and an operative connection between the means for moving said bar and the single dispensing means to permit movement of such bar for ejecting articles only when the proper number of coins of the proper value are utilized in the coin controlled devices.

5. In a vending machine, the combination of a pair of coin controlled devices fixed as to location and each comprising a pivotally mounted latch having a plurality of depending fingers, a movable bar adapted to shift a coin, said bar being stopped by one of the fingers of the latch if there is no coin to be shifted, and a coin moving the latch and allowing passage of said bar, a plurality of stationary article receptacles with a movable selective means to select any one receptacle, a dispensing device to dispense an article from the selected receptacle, and a single manually operated means to operate the dispensing device and to actuate both of said movable bars, the stoppage of one of said bars preventing the operation of the dispensing device.

6. In a vending machine, the combination of a plurality of coin controlled mechanisms, each comprising in combination a pivotally mounted latch having a finger depending from its outermost end, and a second finger spaced inwardly

therefrom a movable bar having a projection with a coin pocket at one side of the projection, said projection being adapted in the movement of the bar to pass on one side of the outer finger and to engage the inner finger when there is no coin in the coin pocket, and the coin in such pocket being adapted to engage the first finger and to elevate such finger, allowing passage of the bar underneath the second finger, and a plurality of article receptacles, a selective means to select any one receptacle, a dispensing device operatively connected to the selective means, a single manually operated means to operate the dispensing device and to actuate all of said movable bars of the coin controlled mechanisms, the operation of the manually controlled means being blocked if there is no coin in any one pocket to engage the movable bar of such particular coin controlled mechanism.

7. A vending machine comprising in combination a single rock shaft, a carriage operable therefrom having a plurality of movable bars connected thereto, a plurality of receptacles for goods to be vended, a selective means to select any one receptacle, a transversely movable ejector device connected to the carriage positioned to engage the lowermost article in a receptacle and to vend same and operatively connected to the selective means, a coin controlled device comprising a pivotally mounted latch having a depending finger at its outer end and a second depending finger spaced inwardly therefrom, said bars being adapted to engage a coin and to shift said coin on the rocking of the rock shaft, the coin being adapted to engage the outer finger of the latch displacing the latch and allowing vending of an article, and the said second finger being adapted to prevent rocking of said shaft by engaging the movable bar, thus preventing vending of articles.

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