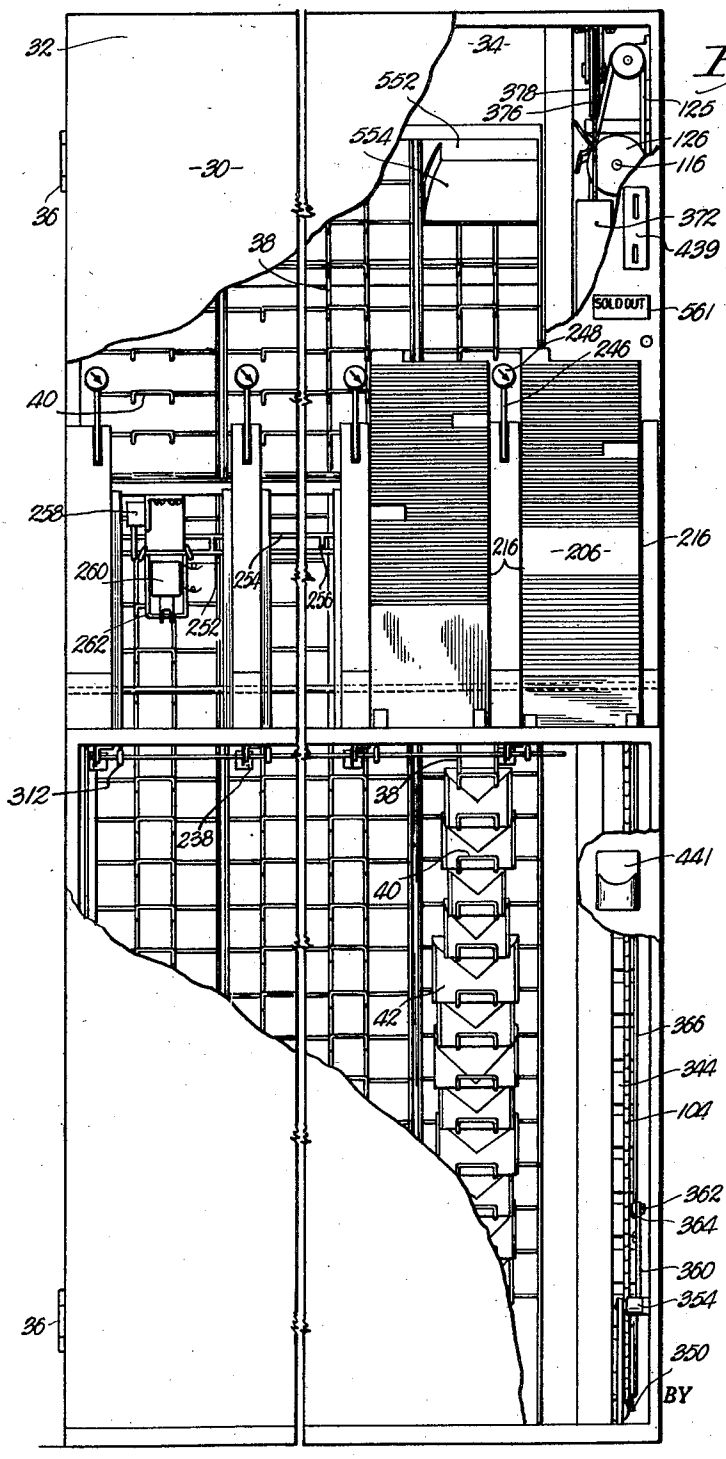
June 12, 1951 G. M. PRO 2,556,338

VENDING MACHINE FOR GREETING CARDS

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Fig. 1.



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Fig. 2.

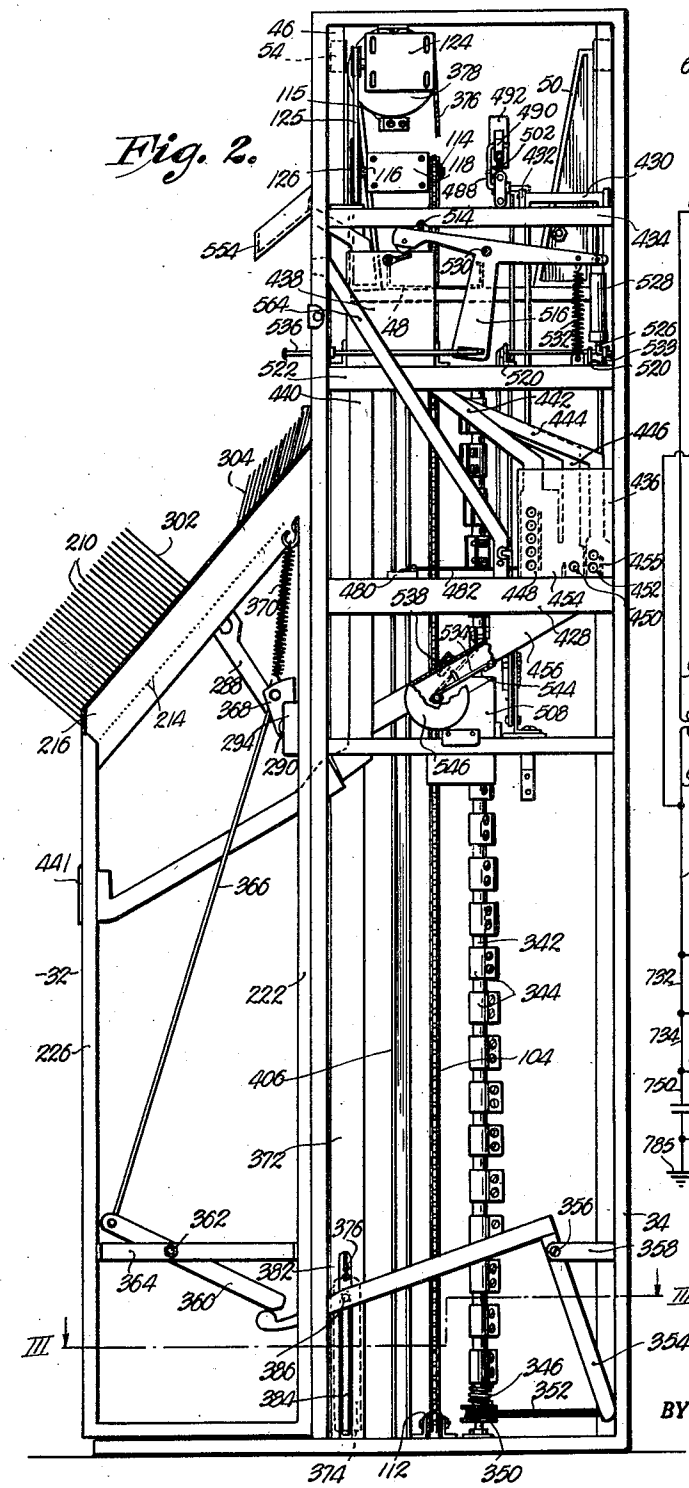
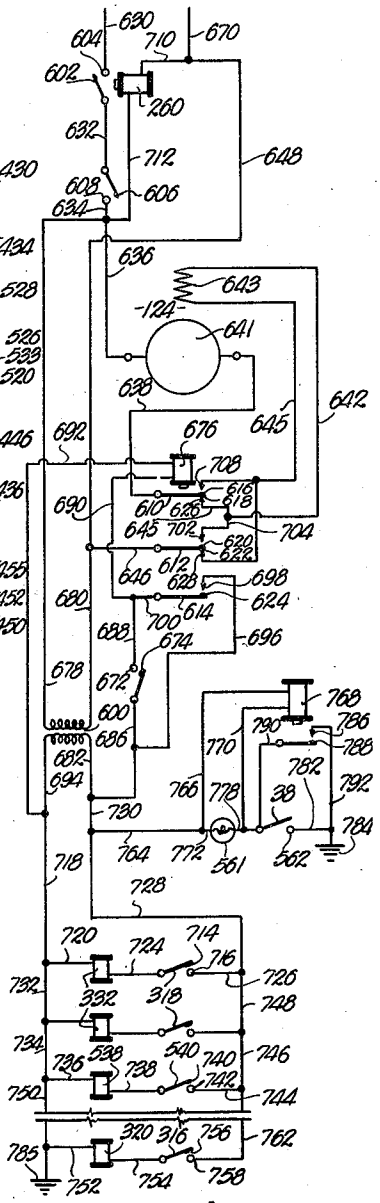


Fig. 2a.



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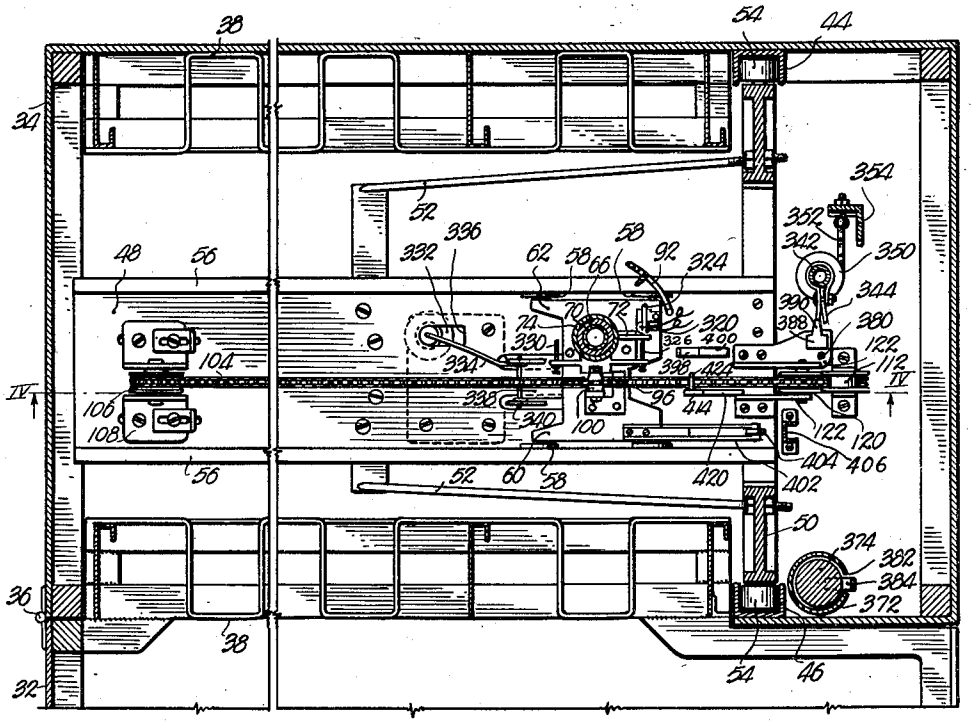


Fig. 3.

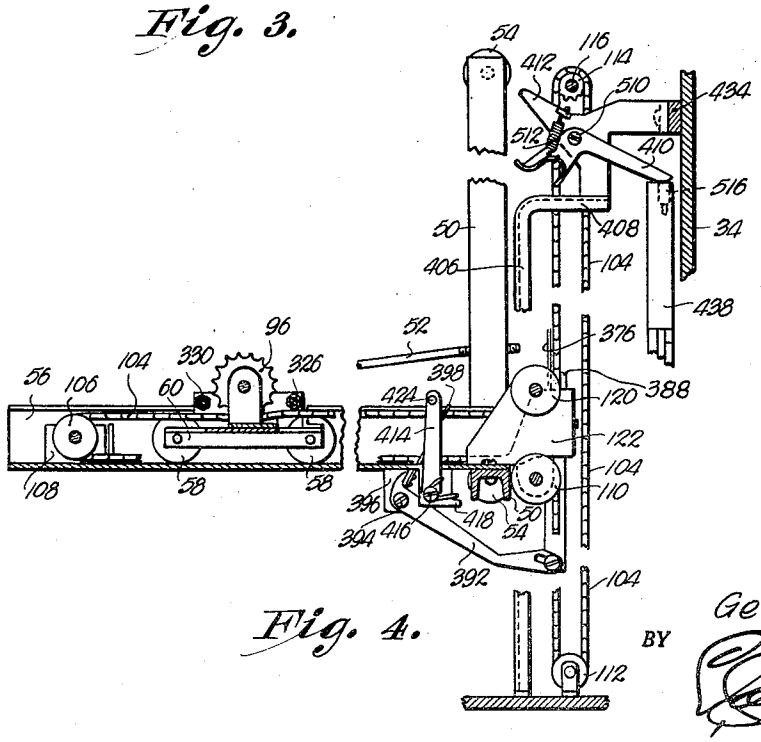


Fig. 4.

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VENDING MACHINE FOR GREETING CARDS

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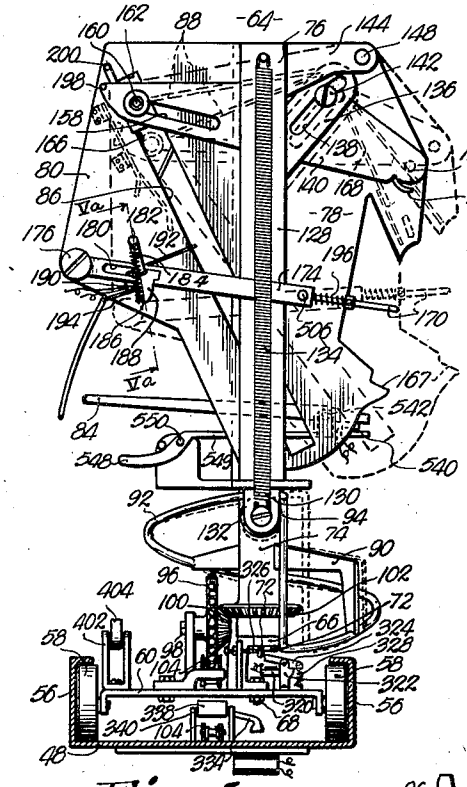


Fig. 5.

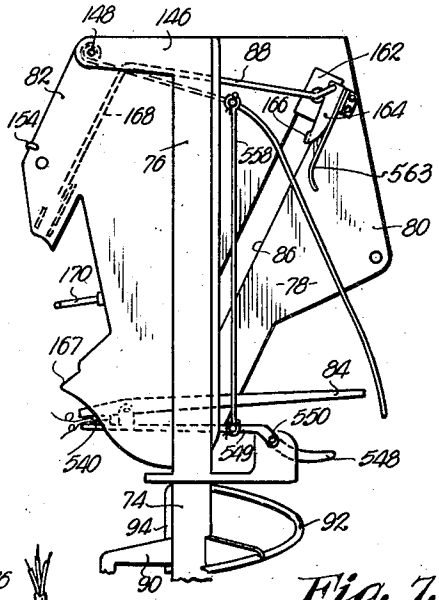


Fig. 7.

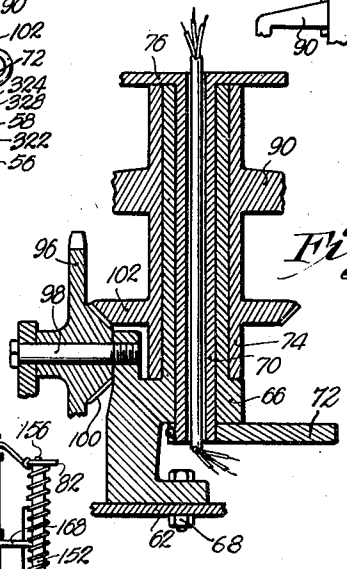


Fig. 8.

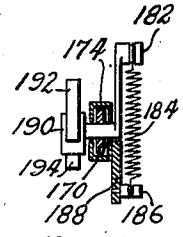


Fig. 5a.

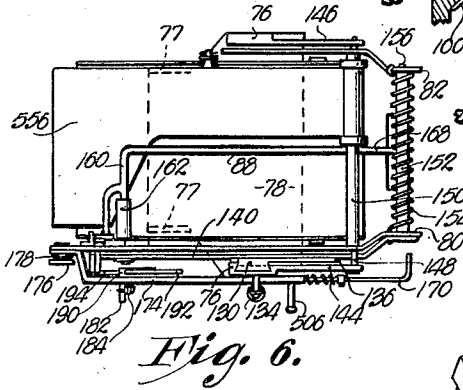


Fig. 6.

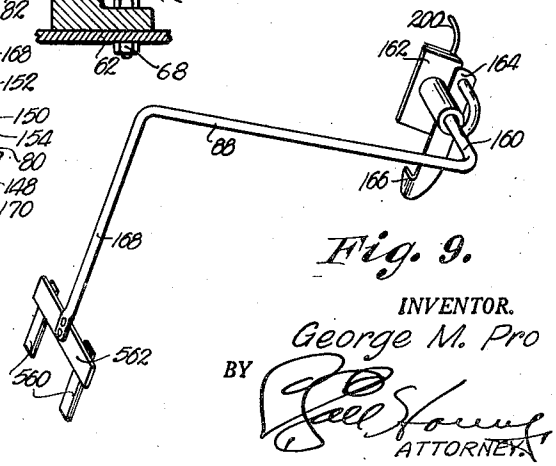


Fig. 9.

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VENDING MACHINE FOR GREETING CARDS

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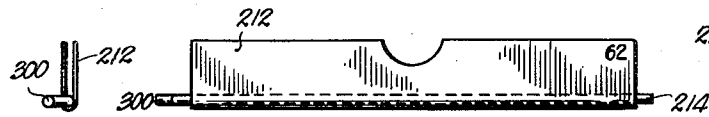


Fig. 11. Fig. 12.

Fig. 10.

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VENDING MACHINE FOR GREETING CARDS

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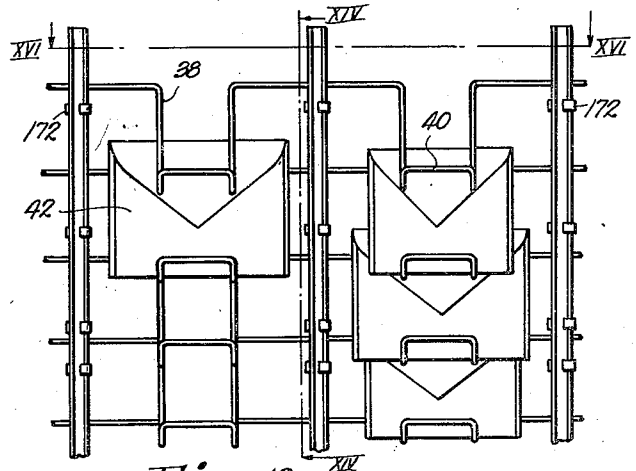


Fig. 13.

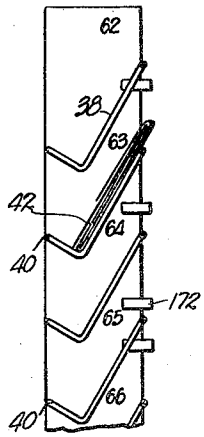


Fig. 14.

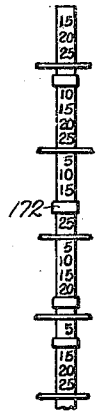


Fig. 15.

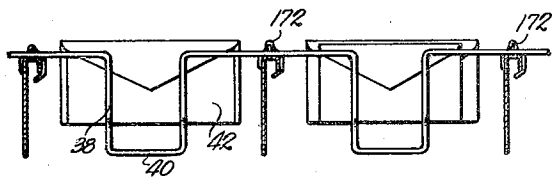


Fig. 16.

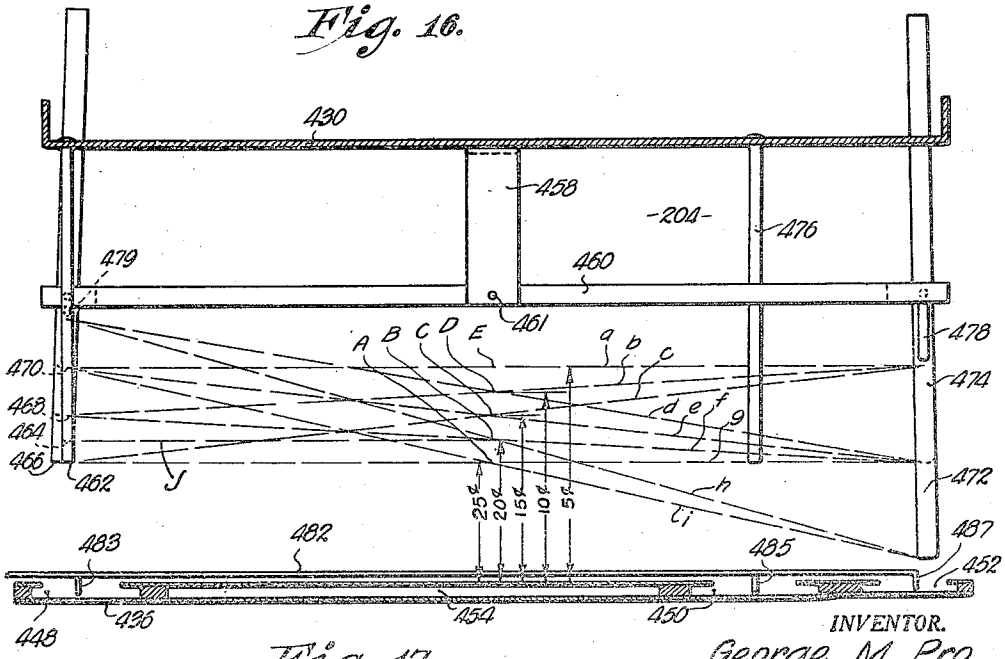


Fig. 17.

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VENDING MACHINE FOR GREETING CARDS

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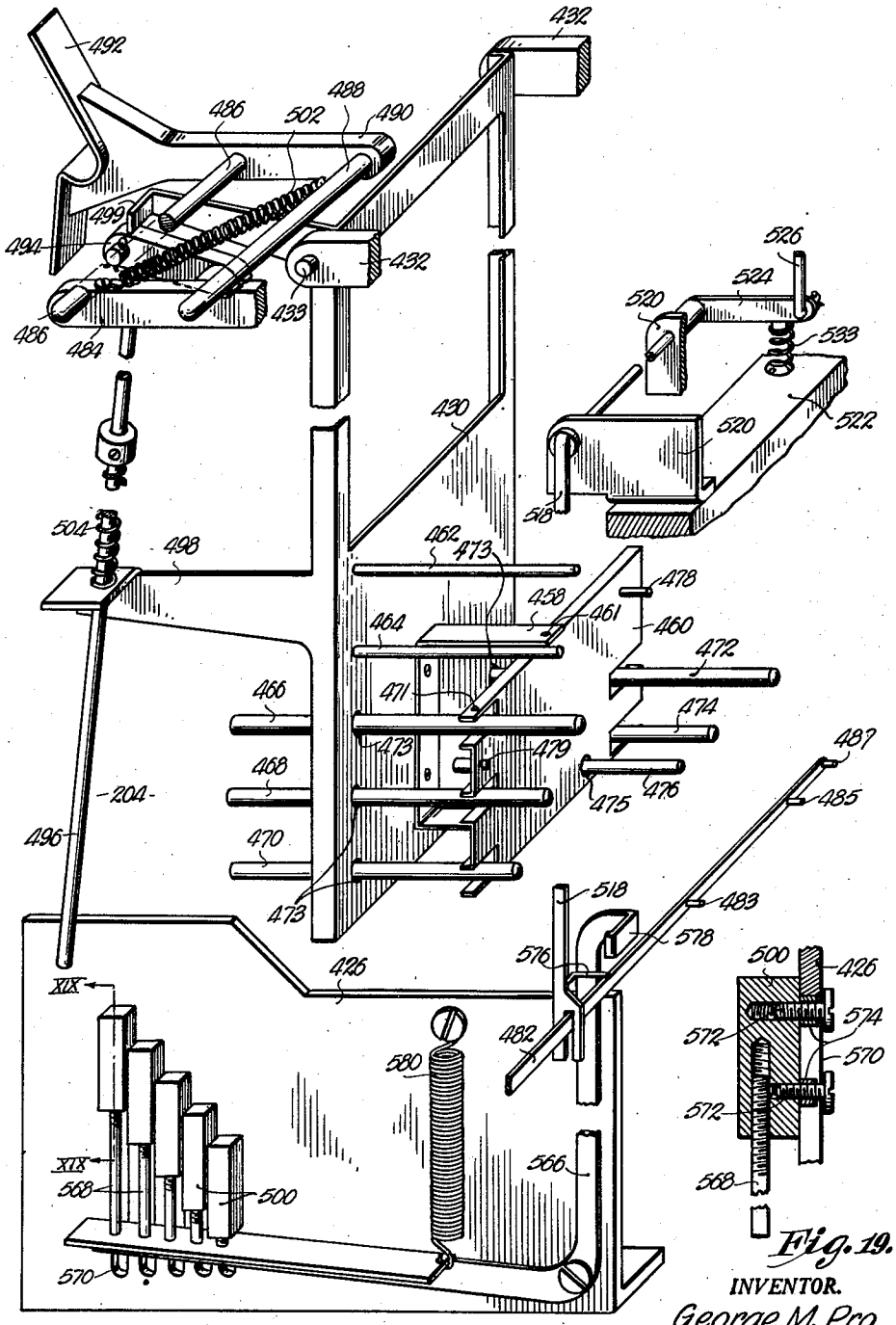


Fig. 18.

Fig. 19.

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Patented June 12, 1951 2,556,338

UNITED STATES PATENT OFFICE

2,556,338

VENDING MACHINE FOR GREETING CARDS

George M. Pro, Johnson County, Kans.

Application July 29, 1946, Serial No. 686,895

24 Claims. (Cl. 312—52)

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This invention relates to dispensing machines for articles of merchanidse, and particularly to vending machines for planar objects such as greeting cards or the like, and has for its primary object the provision of automatic mechanism designed to vend cards of various and different characteristics, which mechanism is controlled in its operation by the provision of a specially formed selective assembly operable by the customer, and by the provision of a novel coin-controlled apparatus permitting the accommodation by the machine of cards covering a large price range.

An important object of this invention is to provide a machine for vending greeting cards, which machine includes a plurality of individual holders for the cards to be vended, so arranged and designed to present the cards for removal therefrom when the machine is placed in operation, and the provision of mechanism capable of removing a card from a selected holder upon insertion of the proper coin or coins and the actuation of a designated push button by the customer, which mechanism will thereupon deliver the removed card to within reach of the purchaser.

This invention has for a yet further object to provide in a machine of the aforesaid character, an unique card selection assembly characterized by a display rack for presenting facsimiles of the vendable cards within the cabinet of machine, wherein each of said facsimiles is mounted to permit movement thereof by the customer to make a selection, and having in addition parts controlled by the predetermined positioning of the selected facsimile for setting the automatic vending mechanism of the machine to dispense a card simulating that selected by the customer.

Another object of this invention is to provide a card removing assembly mounted on a carriage that reciprocates horizontally on a vertically reciprocating platform, all for the purpose of positioning the said assembly to permit removal of a card from one of a number of holders therefor, and the provision of a common actuating means for the platform, the carriage and the removing assembly to operate these parts in timed relation, to remove a card from its holder, move the same to a discharge opening and dump the card for accessibility to the customer during each complete cycle of operation of the machine.

A yet further object of this invention is to provide a coin-controlled apparatus for setting the aforementioned card removing assembly prior to its being placed in operation, which apparatus is designed to accommodate coins of a number of

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denominations and all combinations of such coins totalling a plurality of prices for the cards vended by the machine.

A still further object of this invention is to provide a machine for vending greeting cards having a basket pivotally mounted on a reciprocable carriage, which basket includes an arm adapted to extend into one of the above mentioned card holders, engage a card, and deposit the same in the basket as the arm snaps back into position within the confines of the basket, and additionally the provision of means to move the basket to a position permitting removal of cards from holders on either of two sides within the cabinet, all of which operation is dependent upon which card is selected by the customer as he thumbs through the facsimiles thereof mounted on one face of the machine.

An important aim of this invention is to provide in a vending machine for greeting cards a coin-controlled apparatus having means for rendering the operation of the machine ineffective except upon insertion of the proper amount of money in the form of coins, which means includes a chamber for maintaining the inserted coins in superimposed, edge-to-edge position in segregated compartments, and the inclusion of a setting mechanism having a plurality of rods movable to and from respective engagement with one face of the coins that have been inserted, whereupon the vending machine is operable, but only if certain rods engage the proper coins in accordance with the designated price of the card desired.

Another aim of this invention is to provide a vending machine for greeting cards having a plurality of holders for cards of differing prices and characteristics, novel structure for removing a card from a selected holder, and a platform and carriage that moves to the selected holder upon being controlled by the manual manipulation of the aforesaid display assembly to a set position and the actuation of a push button whereupon a card will be removed only if the proper coin or coins have been deposited in accordance with the portion of the display assembly that has been manipulated.

This invention embodies a large number of minor aims and novel features, many of which form a part of the primary objects above set down, all of which are so interrelated and dependent one on another that their appearance can only be made clear during the course of the following specification, referring to the accompanying drawings wherein:

Figure 1 is a front elevational view of a machine for vending greeting cards made in accordance with my invention, parts being broken away to illustrate the internal structure of the cabinet.

Fig. 2 is an end elevational view with the shell forming the walls of the cabinet entirely removed to illustrate the arrangement of many of the parts of the machine.

Fig. 3 is a fragmentary cross sectional view taken on line III—III of Fig. 2 showing the top of the platform when the same is near the bottom of its path of travel.

Fig. 4 is a fragmentary cross sectional view taken on line IV—IV of Fig. 3.

Fig. 5 is a side elevational view of the card removing assembly showing the same entirely removed from the cabinet.

Fig. 5*a* is an enlarged, detailed, cross-sectional view taken on line V*a*—V*a* of Fig. 5.

Fig. 6 is a top plan view thereof.

Fig. 7 is a fragmentary view showing the side opposite to that illustrated in Fig. 5.

Fig. 8 is a fragmentary central sectional view through a portion of the assembly illustrated in Fig. 5.

Fig. 9 is a perspective view of the card removing arm entirely removed from the card removing assembly.

Fig. 10 is an enlarged central sectional view through the card display and selection assembly.

Fig. 11 is a detailed perspective view of one of the stops forming a part of the display assembly.

Fig. 12 is a side elevational view of one of the card holders of the display assembly.

Fig. 13 is a fragmentary view of the card holders illustrating the same looking into the cabinet when the walls thereof are removed.

Fig. 14 is a cross sectional view taken on line XIV—XIV of Fig. 13.

Fig. 15 is an inside view looking through the cabinet framework in the opposite direction from Fig. 13 showing the manner of disposing the clips over indicia provided for each holder.

Fig. 16 is a cross sectional view taken on line XVI—XVI of Fig. 13.

Fig. 17 is a diagram associated with parts of the coin-controlled assembly illustrating schematically the operation of the said assembly.

Fig. 18 is a perspective view of the coin controlled assembly per se.

Fig. 19 is a cross sectional view taken on line XIX—XIX of Fig. 18; and

Fig. 20 is a wiring diagram illustrating the manner of supplying current to the electrically operated apparatus forming a part of the machine.

Many types of vending machines have been developed for vending planar objects of one nature or another, but none apparently have had practical use in the field of merchandising greeting cards. As is well known, these cards are made available to the public in a large variety of differing sizes, shapes and forms, and also covering a price range usually ranging from five cents to twenty-five cents depending on its style, cost of manufacture, and other factors.

Machines conventionally employed for vending only one type of card or other article, or cards of equal price are therefore undesirable in this art because of the necessity of utilizing a plurality of such machines to cover the selection within a given retail store.

With this important objection in mind, a large number of considerations must be kept before the designer, and such a machine must be capable of accommodating virtually all classes of cards,

both in characteristics and in price, and must be automatically operable without the attention of a store clerk except for periodic refilling and adjustment.

Such a machine is present in the instant invention and includes also a coin-controlled assembly particularly adapted for use with a vending machine capable of handling many types of cards, in that any combination of coins totalling the price of the card selected will serve to operate the machines thereby lessening the burden of making change by the cashiers in the store.

Like reference numerals refer to similar parts throughout the drawings. A cabinet, generally designated by the numeral **30**, provided for housing the greater part of the automatic vending mechanism of my invention, has a normally front section **32** and a rear section **34**, which sections are hinged together as at **36** to permit swinging the section **32** to an open position for access to the inside of the cabinet. The inner walls of each of these sections **32** and **34** carry a plurality of card holders **38**, illustrated in detail in Figs. 13 to 16 inclusive, arranged in vertical, side-by-side series in such a manner as to present aligned, horizontal rows of holders throughout the entire height of each of said inner walls.

The card holders **38** are substantially U-shaped and have an upturned portion **40** at the bight thereof against which the normally lowermost edge of cards **42** rest when stacked thereon in superimposed relation as is clear in Fig. 14, and each of these holders **38** is disposed outwardly and on an incline for purposes hereinafter more fully explained.

Mounted within the cabinet **30** for vertical reciprocation in a pair of U-shaped, upright tracks **44** and **46** fixed to the section **34**, is a horizontally disposed, relatively narrow platform **48**. Supporting framework **50**, including a pair of adjustable arms **52**, for the platform **48**, carries a pair of rollers **54** at each end thereof to ride in the tracks **44** and **46** respectively as the said platform **48** moves along its vertical path of travel. The normal starting position for the platform **48** is at the uppermost ends of the tracks **44** and **46** and it is at this position that the platform **48** is maintained when the machine is in the inoperative condition. Structure hereinafter described limits the vertical movement of this platform **48** to any one of a plurality of predetermined positions along its entire path of travel from its said starting position to the lowermost row of horizontal card holders **38**.

A pair of substantially parallel, U-shaped, upturned flanges **56** along each edge of the platform **48** and integral therewith, presents channeled tracks in which four wheels **58** of a carriage **60** travel as the latter reciprocates horizontally on the platform **48**, clearly illustrated in Fig. 5. Except for the more detailed assembly carried thereby, this carriage **60** consists simply of a plate-like framework **62** upon the four corners whereof, the wheels **58** are rotatably mounted.

Mounted directly upon and movable with the carriage **60** is an assembly broadly designated by the numeral **64**, having parts adapted to remove a card **42** from its holder **38** in a manner presently to be described. This card removing assembly **64** comprises generally, a tubular member **66** mounted directly on the plate **62** of the carriage **60** as at **68**; a second tubular member **70** pivotally disposed within the hollow portion of the member **66** and having an arm **72** fixed at the lower end thereof and extending radially there-

from; and a third tubular member 74 in telescoping relation and rotatably mounted over the member 66.

A U-shaped yoke 76, integral with the member 70, extends upwardly therefrom and pivotally carries a basket 78 comprising a pair of spaced apart, substantially parallel side walls 80 and 82 and a bottom wall or tray 84.

A diagonally disposed slot 86 is provided in the wall 80 of the basket 78 in which one end of an L-shaped arm 88 rides in its movement to and from a card holder 38. Rotatable with and mounted directly on the member 74 through the medium of supporting arms 90, is a spiral cam 92 having its ends joined by a vertical piece 94.

The motivating force for the various movements of all the parts just described with respect to the card removing assembly 64, is supplied through a single sprocket wheel 96 rotatably mounted on a pin 98 fixed to the member 66. This sprocket wheel 96 has a bevel gear 100 on one face thereof and integral therewith, in mesh with a pinion 102 that is a part of the member 74. Thus, the rotation of the sprocket wheel 96 imparts rotary motion to the member 74 and the spiral cam 92 mounted thereon.

This sprocket wheel 96 is engaged and rotated by an endless chain 104, which chain 104 also interconnects the platform 48 and the carriage 60 for imparting the respective reciprocating motions to the latter two elements in timed relation with the rotation of the sprocket wheel 96 and the relative movements of all the parts of the assembly 64. This interconnection is accomplished by the disposition of the chain 104 in the following manner:

From the sprocket wheel 96, the chain 104 passes over an idler pulley 106 mounted on an adjustable bearing support 108 carried on the upper face of the platform 48 near the free end thereof. Thence the chain 104 returns along the platform 48 and passes over an idler 110 mounted on the end of the platform adjacent to its support 50, to pass downwardly and over a third idler 112 fixed to the framework of the section 34 constituting its bottom wall. From the idler 112, the chain 104 is directed upwardly to be threaded over a sprocket wheel 114 disposed near the top of the section 34, and fixed to a shaft 116 journaled in a suitable bracket mounted on section 34. Another idler pulley 120 is rotatably mounted in a bracket 122 on the platform 48 to receive the chain 104 as it proceeds from the wheel 114 and thence to pass under and in engagement with the sprocket wheel 96, as illustrated in Figs. 3 and 4. The endless chain 104 is driven by a reversible motor 124 mounted for rotating the shaft 116 through the medium of a belt 125 and a pulley 126 on the shaft 116, as shown in Fig. 2.

One leg 128 of the yoke 76 adjacent to the wall 80, carries a plunger 130, dovetailed for vertical reciprocation in the inner face thereof, and a roller 132 mounted on the lower end of the plunger 130 is maintained against the cam 92 by a spring 134 fixed at one end to the plunger 130 near the roller 132 and at the other end to the leg 128 near the upper end thereof.

Rotation of the cam 92 therefore, pulls the plunger 130 downwardly until the cam 92 nears a complete revolution, at which time the roller 132 follows the vertical piece 94 and the plunger 130 snaps back to its starting position by the action of the spring 134.

The plunger 130 extends laterally and upwardly near its upper end to present a portion 136

having a slot 138 formed therein, and a triangular-shaped member 140 is connected to the portion 136 by a pin and roller assembly 142 fixed to the member 140 near its normally uppermost corner, which pin 142 projects through the slot 138 for sliding movement therein.

Each leg of the yoke 76, including the leg 128, is L-shaped near its upper end to present a pair of opposed laterally projecting arms 144 and 146, each being perforated near the free end to receive a shaft 148 that is journaled through the walls 80 and 82 to pivotally mount the basket 78 in an off-center manner as illustrated in Figs. 5, 6 and 7. These walls 80 and 82 are connected by a sleeve 150 that telescopes the shaft 148 and a second sleeve 152 that carries a spring 154, both of which sleeves are rigid to the walls 80 and 82 respectively.

A pin 156 passes through the sleeve 152 and extends beyond the walls 80 and 82 and is fixed to the member 140 near one corner thereof. The spring 154 has one end thereof hooked over the upper edge of the wall 82 and the other end hooked under the member 140 to maintain the opposite corner thereof normally upwardly.

This said opposite corner of the member 140 is slotted as at 158 to receive the free end of a leg 160 of the arm 88 for sliding and pivotal movement therein. A block 162 is pivotally mounted on this leg 160 and disposed to reciprocate in the slot 86 of the wall 80.

Since the arm 88 is thus free to pivot in the block 162, a flat spring 164 fixed to the leg 160 and provided with a laterally projecting tip 166 is disposed with the tip 166 projecting into the slot 86 to slide along the lowermost longitudinal edge thereof for normally holding the arm 88 in a position where a stretch 168 thereof is in a plane substantially parallel to the longitudinal edges of the slot 86.

The downward movement of the plunger 130 and of the portion 136 thereof will swing the member 140 downwardly on the pivot pin 156, which in turn slides the block 162 downwardly in the slot 86. With the tip 166 of the spring 164 sliding along the slot 86, the arm 88 will thus be moved downwardly and outwardly whereby the stretch 168 thereof will project beyond the confines of the basket 78. As the plunger 130 starts its downward movement, the first action to take place is for the basket 78 to swing in a counter-clockwise direction, looking at Fig. 5, on its pivot 148 until the jaws 167 on one edge of each of the walls 80 and 82 come into contact with a holder 38. When this engagement takes place, the block 162 leaves the upper end of the slot 86 to move the arm 168 in substantially the same direction of travel as that of the basket 78.

A plunger rod 170 is slidably mounted in a tubular member 174 that is offset from the wall 80 as shown in Fig. 6 and is pivotally mounted thereto by a bolt 176 having a spring washer 178 to maintain a relatively tight fit at the point of pivot.

The tubular member 174 has a slot 180 near the bolt 176 in each side thereof, which slots are in alignment and a pin 182 passes through these slots 180 and is journaled in a perforation provided near the inner end of the plunger rod 170. The outermost end of the pin 182 extends upwardly and outwardly to carry one end of a spring 184 which spring is fixed at its opposite end to a stud 186 fixed to a bracket 188 extending below the lower edge of the member 174,

The stud 186 is offset from a straight line between the out-turned end of the pin 182 and its point of pivot to present an off-center action when the pin 182 is swung in the plunger rod 170.

A mercury switch 190 fixed to the inner end of the pin in 182 is electrically connected to the motor 124 to reverse the same when in a closed position. A pair of leaf springs 192 and 194 is mounted respectively to the opposed, upper and lower edges of the switch 190 and extends therefrom in opposite directions. These springs 192 and 194 are each mounted respectively at one end thereof opposite to the end that extends beyond switch 190. In other words, each spring extends the entire length of the switch 190 and extends a distance therebeyond.

The plunger rod 170 is normally maintained outwardly in the member 174 by the action of a spring 196 to a point where the pin 182 is against one end of the slots 180, which position disposes the spring 192 in the path of travel of an outwardly projecting L-shaped extension 200 on the block 162. The downward movement of the block 162 would therefore, bring the extension 200 in contact with the spring 192 to close the switch 190 and reverse the motor 124. As the extension 200 continues downwardly, it slips off the free end of the spring 192, and on its return movement flexes the spring 192 until it again slips off the free end thereof without again throwing the switch 190 to an open position.

The action just described however, occurs only when the customer fails to deposit the amount of money necessary to obtain the chosen card, all as hereinafter more fully explained. Normally, the plunger 170 is designed to contact a clip 172, which in turn will slide the plunger 170 inwardly within the member 174 to move the spring 192 out of the path of travel of the extension 200. It is desired therefore, to close the switch 190 after a card 42 has been removed from its holder 38 and deposited on the tray 34. An outwardly projecting stud 198 on the member 140 near the slot 158 is provided to move downwardly therewith, flex the spring 194, and pass thereby on its downward movement. On its return, upward movement it will contact this spring 194 to close the switch 190 and thereby reverse the motor 124. The switch 190 is opened as the carriage approaches its original starting position by the engagement of pin 182 with a cam block 115, shown only in Fig. 2, attached to the frame section 34. This opening of switch 190 however, does not reverse the direction of travel of the motor 124 at this point however because of a relay provided in the electrical circuit to maintain a closed circuit, as will hereinafter be more fully explained.

The operation of all the movable parts heretofore explained is controlled by the action of the customer through the medium of two assemblies, one of which is a card selection assembly, broadly designated by the numeral 202, and a coin controlled mechanism 204, detailed in Fig. 10 and Figs. 17, 18 and 19 respectively.

The assembly 202, mounted directly on the front section 32 of the cabinet 30 as shown in Fig. 2, includes a number of rows of display card holders similar to the conventional type of rack used to present cards for inspection by the purchasing public in order that they may choose from a number of cards, the ones desired. These rows 206, shown in part in Fig. 1 are in alignment across the front of the cabinet 30 and disposed at a convenient angle as is clear in Fig. 10.

Each of the rows 206 has suitable frame work to support a plurality of display card holders, which holders comprise a plate 210, having an opening near the bottom thereof and a channeled member 212 that carries the plate 210. The members 212 each have a pin 214 therethrough which pin extends beyond each end of the member 212 and is pivotally mounted between spaced apart, parallel, frame members 216. A rod 218, removable when the section 32 is in an open position, passes through a hole 220 in frame piece 222 of the section 32, through the openings in the plates 210 and into a hole 224 in frame 226 of the section 32. Each of the plates 210 has a display card suitably fixed to its outermost face, which cards differ in size, shape and description as is customary in the trade, and each is marked to indicate its cost to advise the customer the amount of money necessary to be deposited in the machine. The rod 218 prevents removal of the plates 210 and permits change or rearrangement as necessary when new supplies of the cards 42 are placed in the holders 38.

A reciprocable bar 228, disposed along one side of the holders 210 in substantial parallelism to the frame members 216, is carried by a pair of legs 230 and 232, which are pivotally mounted thereon as at 234 and 236 respectively. An extension 238 fixed to the frame piece 226 pivotally mounts the leg 230 as at 240 and an extension 242 fixed to the frame piece 222 pivotally mounts the leg 232 as at 244. Thus it is clear that as the lower end of the bar 228 is moved to and from the frame piece 226, the upper edge thereof also moves toward and from the upper edge of the spaced-apart frame members 216. There is a bar 228 mounted in like manner along each row 206 of display card holders 210, and a coil spring (not shown) preferably mounted at the pivotal point 240 yieldably maintains the bar 228 at one end of its path of travel where the lowermost end thereof is adjacent the frame piece 226.

Integral with the bar 228 and extending upwardly therefrom near its uppermost end is a handle 246 adjacent to and disposed substantially parallel to the frame piece 222. A push button 248, fixed to the handle 246 at its uppermost end, extends outwardly to be within reach and manipulable by a prospective customer. Pushing the button 248 inwardly moves the handle 246 toward the frame piece 222 and imparts the simultaneous movements just described to the bar 228.

A lateral extension 250 on the lowermost edge of the bar 228 engages a rod 252 disposed transversely across the entire width of the section 32 below the bars 228. This rod 252 is joined to another rod 254, journaled in the extensions 242, in substantial parallelism by a number of links 256. Movement of the handle 246 toward frame 222 will force the rod 252 upwardly along the extension 250 to close a switch 258, fixed to the frame 222 near one end of the rod 252. The closing of this switch 258 completes the electrical circuit supplying energy to the motor 124 as hereinafter explained, which in turn energizes a solenoid 260 on the frame 222 adjacent to the switch 258, all as shown in Fig. 1.

The solenoid 260 is operably connected to the rod 252 by a yoke 262 to hold this rod in its uppermost position when the solenoid is energized, and when in that position, the rod 252 is engaged by a shoulder 264 formed on the lowermost edge of the bar 228 adjacent to the extension 250. This

engagement maintains the handle 246 and the bar 228 in the operative position just described while the machine is in operation and after the user removes his hand from the button 248.

A secondary bar 266 is mounted on the bar 228 in such manner as to be movable therewith and also to have a separate, individual movement similar to that of the bar 228 and relative to the latter. An L-shaped link 268 is pivotally fixed to the secondary bar 266 as at 270 and to the bar 228 as at 272. And, a substantially triangular link 274 is mounted for pivotal movement on the secondary bar 266 as at 276 and pivotally attached to the bar 228 as at 278. Thus, the secondary bar 266 is movable on the bar 228 to and from a position bringing its uppermost edge adjacent to the uppermost edge of the bar 228.

A substantially rectangular-shaped member 280 carries a pair of U-shaped hooks 296 and 298. Hook 298 overlaps and slides along the upper edge of the bar 228 at the uppermost end of the member 280, and the hook 296 normally overlaps and slides along the upper edge of the secondary bar 266 at the lowermost end of the member 280.

A stud 284 projects outwardly from one face of the member 280 and is rigid thereto to slide in an elongated, substantially arcuate slot 286 provided in an arm 288, fixed to a tubular shaft 290 as at 292.

This shaft 290 extends transversely across the section 32 in the same manner as the rods 252 and 254 and is journaled in brackets 294 fixed to the frame piece 222. Swinging movement of this arm 288 therefore, imparts reciprocating motion to the member 280 as it slides on the bars 228 and 266.

Each of the pins 214 is offset at one end thereof as shown in Figs. 11 and 12 and carries a stop 300 extending beyond the offset portion. When the assembly is placed in operation by the customer, one of these stops 300 is engaged by either the hook 296 or 298, depending upon the predetermined positioning of the plates 210 and on the respective and relative movements of the bars 228 and 266.

When the plates 210 are disposed as indicated on the right looking at Fig. 10, the stops 300 are moved out of the path of travel of the hook 298 but when the plates 210 are moved to the position of the three plates indicated in Fig. 10 whereby the pin 214 is turned to move the stops 300 thereon, the stop 300 on the plate designated by the numeral 302 will be in position to be contacted by the hook 298 and thereby stop the downward movement of the member 280 toward the frame 226. Although the stops 300 on all the plates below the plate 302 will be turned to the contacting positions, none will be engaged by the hook 296 because of its normally being held out of engagement above these stops by the secondary bar 266.

The plurality of rows 206 of display card holders having the plates 210 as a part thereof are operably divided into an upper and lower zone. The upper zone includes all the upper half of the plates 210 of all the rows 206, and the lower zone includes the remaining plates, or the lower half of the plates 210 of all the rows 206. And the upper zone corresponds operably with the plurality of card holders 36 disposed on the inner wall of section 32, while the lower zone corresponds to the card holders 38 on the inner wall of the section 34.

Therefore, when a card is selected by the customer as he thumbs through the holders 210, in the lower zone, hook 296 comes into operation to engage one of the stops 300. It is notable that although the card facing the customer as at 304 is the one chosen, it is the plate 302 immediately below the card 304 that contains the stop 300 to be engaged by hooks 296 or 298 to set the hereinafter mechanism for controlling the movement of part of the mechanism driven by the motor 124.

The uppermost plate 210 only of the lower zone just explained, has its stop 300 extended slightly beyond the outermost ends of the other stops 300. For purposes of clarity, this stop is designated by the numeral 306. When a card is selected on the plate 210 having this stop 306 or any other plate 210 therebelow, whereby all the plates 210 above the selected card are tilted toward the frame 222, the stop 306 will be turned to a position engaging a contoured edge 308 of the link 274 as shown by the arrow in Fig. 10. This established contact will pull the secondary bar 266 downwardly and away from the frame 226, as the arm 288 is moved to the dotted line position shown in Fig. 10.

As the upper edge of the secondary bar 266 approaches the upper edge of the bar 228, the hook 296 will move downwardly to ride on the upper edge of the bar 228 whereby the hook 296 is in position to be engaged by a stop 300 immediately below the plate containing the card selected. A spring 309 mounted on pivot 278 and having one leg thereof fixed to the lower edge of the link 274 maintains the secondary bar 266 in a position where the hook 296 is normally raised above the upper edge of the bar 228.

The card selection assembly 202 just described is in part electrically and in part mechanically connected to the mechanism previously described, including the platform 48, the carriage 60, the assembly 64 and all the movable parts associated therewith.

The electrical connection is established through the medium of a shaft 310 journaled in the several extensions 238 on the frame 226. A finger 312 underlies each row 206 and is mounted on the shaft as clearly shown in Fig. 10, and held in position by a set screw 314. These fingers 312 are disposed so as to be contacted by the free end of the L-shaped link 268 when a card is selected in the lower zone of the plates 210, and thus causing the shaft 310 to be turned in the extensions 238.

A finger (not shown) similar to the fingers 312, rigid to the shaft 310 near one end thereof is disposed to close a switch 316 (shown only in the wiring diagram of Fig. 20) which switch is similar to a switch 318 shown mounted on the extensions 238 in Fig. 10.

In the same circuit with the switch 316 is a solenoid 320 mounted on a bracket 322 fixed to the framework 62 of the carriage 60. The core of this solenoid 320 is disposed to attract a trigger 324 pivotally mounted on the bracket 322, and yieldably held in position to lock the arm 72 against counter-clockwise movement, looking at Fig. 3, by a spring 328. The arm 72 and consequently the basket 78 is limited to a 180 degree rotation by screws 326 and 330 mounted in diametrically opposed relation immediately below the member 66.

Inasmuch as the spring 134 maintains the roller 132 tightly against the spiral cam 92, when the sprocket wheel 96 imparts rotary motion to the gear 102, the basket 78 rotates 180° when the trigger 324 is released, until the arm 72 strikes

the screw 330, then the cam 92 starts to rotate as previously explained. With basket 78 so turned, the arm 88 will be in position to remove cards from a holder 38 disposed on the section 32 which corresponds to the lower zone of cards on display in the rows 206.

Another electrical connection is established through the normally open switches 318, one of which is disposed below each of the rows 206 and mounted on the extension 238. This switch is closed by the link 230 which extends beyond its pivotal point 240. Movement of the handle 246 toward the frame 222 causes the extended portion of the link 230 to move away from the switch 318 to close the same.

A plurality of solenoids 332 correspond to the plurality of switches 318 and the closing of a switch 318 energizes its solenoid 332. Each row 206 of display card holders 210 corresponds to one of the vertical series of card holders 38. Thus it is necessary to limit the horizontal movement of the carriage 60 so it will be stopped to dispose the arm 88 in alignment with the vertical series of holders 38 corresponding to the row 206 of holders 210 from which a card is stlected.

Therefore, the solenoids 332 are disposed along the under face of the platform 48 and an arm 334 connected to the core of the solenoid 332 extends upwardly through openings 336 in the platform 48. A block 338 mounted on the free end of the arm 334 is pivotally mounted between spaced-apart brackets 340 extending upwardly from the bottom of the platform 48.

When one of the switches 318 is closed, its corresponding solenoid 332 will be energized, causing the block 338 to be moved into the path of travel of the carriage 60 and stop further movement of the same when the framework 62 thereof strikes the block 338.

The mechanical interconnection between the selection assembly 202 and the platform 48 includes a vertical column 342 pivotally mounted at each end thereof in suitable bearings carried by the framework of the section 34 as illustrated in Fig. 2, having a plurality of lugs 344 spirally mounted thereon. A coil spring 346 wrapped around and fixed to the column 342 and having one end thereof fixed to a bracket (not shown) yieldably maintains the column 342 at one end of its path of rotation. A grooved sheave 350 fixed to the column 342 has one end of a cable 352 fixed thereto while the other end of the cable 352 is fixed to the free end of one leg of an L-shaped arm 354 that is pivotally mounted as at 356 to an extended portion 358 of the framework of the section 34.

The other leg of the arm 354 extends to be in engagement with the free end of a link 360, pivotally mounted as at 362 to a frame member 364 on the frame pieces 226 and 222 of the section 32. A rod 366 interconnects the link 360 and a link 368 fixed to one end of the shaft 290 and is pivotally fixed to each of these links. A spring 370 having one end fixed to the frame 222 and the other end attached to the link 268, yieldably maintains the link 360 in engagement with the arm 354.

A hollow tube 372 vertically fixed within the section 34, slidably carries a weight 374 that is slightly lighter than the total weight of the platform 48 and the parts carried thereby, which weight is connected to the platform 48 through the medium of a cable 376 fixed at one end to the weight 374. This cable 376 extends upwardly through the tube 372 and passes over an idler pulley 378 near the top of the section 34 and thence downwardly to have its opposite end fixed to the platform 48, as at 380.

The tube 372 has a slot 382 formed in one side near its lowermost end to slidably carry an L-shaped member 384 that has the free end of one leg fixed to the arm 354 as at 386 and the other leg extending into the tube 372 to be directly below the weight 374.

As the platform 48 travels downwardly within its guide tracks 44, the weight 374 moves upwardly within the tube 372, allowing the member 384 to slide upwardly within the slot 382 by the action of the spring 346 turning the column 342. Such action causes the cable 352 to wrap around the sheave 350 and through the arm 354, link 360, rod 366 and link 368, cause the turning of the shaft 290 to swing the arm 238 until a stop 300 is reached by the hooks 296 or 298. It is clear therefore, that the column 342 is movable to as many different positions as there are stops 300 in one row 206 of plates 210. In other words, each lug 344 corresponds to a certain stop 300 in each row 206, which stops 300 are in alignment transversely across the front of the machine between the two outermost frame members 216.

The lugs 344 are provided to limit the movement of the platform 48 and to stop the same at a number of predetermined positions along its vertical path of travel, when one of the lugs 344 is turned into the path of travel of the platform 48.

The means on the platform 48 to contact the lugs 344 consists of a pin 388 slidably mounted in an opening provided in one of the spaced-apart brackets 122 on the platform 48. This pin 388 has an extension 390 to engage one of the lugs 344 that is turned in its path of travel as indicated in Fig. 3. This pin 388 extends below the platform 48 and has an arm 392 pivotally and slidably fixed thereto, which arm 392 is pivotally mounted as at 394 to a bracket 396 extending below the bottom wall of the platform 48.

A spring 398 mounted on the pivotal point 394 is fixed to the arm 392 and extends upwardly through a slot 400 provided in the platform 48. This spring 398 is normally in the position shown in Fig. 4 and limits downward movement of pin 388 within its opening in bracket 122. As the platform 48 moves downwardly, offset portion 390 of pin 388 strikes one of the lugs 344 and the spring 398 absorbs the shock that would normally be present because of the weight of the platform 48. The spring 398 performs an additional function in that it is disposed in the path of travel of the carriage 60 and as it moves in its slot 400 toward the free end of the platform 48, the carriage 60 is started in its movement on the platform 48. As the carriage 60 returns to its starting position which is adjacent the framework 50, it will strike the spring 398, the shock will be absorbed, and the platform 48 will be started in its upward movement toward its starting position which is near the top of the section 34.

A U-shaped extension 402, mounted on the plate 62 of the carriage 60 projects outwardly therefrom and carries a roller 404 in its free end as shown in Figs. 3 and 5. As the carriage 60 moves toward the frame 50, the roller comes into contact with a frame member 406 of the section 34 and as the platform 48 moves upwardly, this roller 404 travels along the frame member 406 until it reaches the uppermost end thereof,

at which point the frame member 406 is offset as at 408. The carriage 60 at this point moves still closer to the frame 50 and the roller 404 moves along the offset portion 408 to come into contact with a dog 410, pivotally mounted as at 510 to an ear 412. This ear 412 is a continuation of the frame member 406 and is provided to dump the tray 84 in a manner presently to be explained.

When the machine is first placed in operation, the first action that must necessarily take place as the chain 104 is actuated by the motor 124 is the outward travel of the carriage 60 whereby the roller 404 moves off the offset portion 408 to permit the platform 48 to commence its downward travel. In the event that solenoid 320 has released the arm 72 to permit the 180° rotation of the basket 78 as previously explained, means must be provided to prevent such rotation during the initial movement of the carriage 60. A bar 414 pivotally mounted as at 416 to a bracket 418 extending below the platform 48 extends upwardly through a slot 420 formed in the platform 48. A spring 422 on the pivotal point 416 has one leg hooked over the bar 414 and the other leg hooked over the bracket 418 to normally maintain the bar 414 against the end of the slot 420 nearest the free end of the platform 48. A stud 424 projects laterally from the free end of the bar 414 and is disposed in the path of travel of the sprocket wheel 96 to be engaged by the same when the carriage 60 moves toward the frame 50. As the carriage 60 starts its initial movement, the spring 422 holds the stud 424 against the sprocket wheel 96 and prevents its rotation. The tight engagement between the roller 132 and the cam 92 prevents rotation of the sprocket wheel 96 except for the 180° movement of arm 72 and its associated parts, while the platform 48 moves downwardly and while the carriage 60 continues its horizontal movement as hereinbefore explained.

As a preface to the explanation of the coin controlled mechanism 204, it is necessary to point out the function of the clips 172. As noted in Fig. 15, the legends 5, 10, 15, 20 and 25 are stamped or otherwise affixed to the framework supporting the card holders 38 beside each holder. These legend numerals represent the five different priced cards that this machine is designed to vend. And each holder 38 is numbered as indicated in Fig. 14, as indicated by the numerals 62, 63, 64, 65 and 66. These numerals correspond to the plates 210 having display cards thereon which are similarly numbered as indicated in Fig. 12 by the legend 62. Thus, if a display card costing five cents (5¢) is fixed to the plate 210 having numeral 62 thereon, then the holder 38 having numeral 62 thereon, will be filled with cards of the five cent (5¢) character that are identical with the card on display. When this is done, the next step is to position a clip 172 over the numeral 5, as clearly illustrated in Fig. 15 and it is the exact positioning of this clip 172 that determines whether or not a card will be vended to the customer.

In other words, the plunger 170 must contact a clip 172. If no clip is present, or if the plunger 170 is not in alignment to make this contact possible, then the switch 190 will be actuated to return the carriage 60 and the platform 48 to their respective starting positions with no card and the incorrect amount of money originally deposited by the customer will be returned to him.

The proper alignment of the plunger 170 is accomplished by the operation of the coin controlled mechanism 204, which includes a vertical plate 426 disposed in substantial parallelism with the path of travel of the carriage 60 and mounted on a cross-bar 428 of the section 34. A panel 430 is swingably mounted on brackets 432 as at 433, which brackets extend from a cross-bar 434. This panel 430 is disposed in substantial perpendicular relation to the plate 426. Near the lower portion of the panel 430 is a coin chamber 436 disposed in substantial parallelism with the panel 430 and supported by the cross bar 428.

A conventional coin separator and slug rejector 438 receives coins inserted by the customer as indicated at 439 in Fig. 1, which is designed as is well known in the art, to reject slugs, mutilated coins and the like and accept good coins. The rejected coins pass into a chute 440 to be returned to the customer at the front of the machine as at 441. The good coins are segregated by this separator whereby nickels pass down a chute 442, dimes down a chute 444 and quarters fall into a chute 446, all of which chutes are in communication with the coin chamber 436 at the open top thereof.

The coin chamber 436 is a polygonal box-like structure and also has an open bottom. Since the good coins passing thereinto are stacked in edge-to-edge, superimposed relation, the thickness of the chamber 436 is relatively narrow to preclude coins to fall therein in side-by-side relation and thus become wedged in their respective compartments. These compartments in the coin chamber 436 are defined by partitions that form compartments 448, 450, and 452 for nickels, quarters and dimes respectively, and into overflow compartments 454 and 455. The chutes 442, 446 and 444 communicate respectively with the compartments 448, 450 and 452 and the coin chamber 436 communicates at its open bottom with a chute 456.

As illustrated in Fig. 2, each of the compartments 448 and 450 communicates with the overflow compartment 454 while the compartment 452 communicates with the overflow compartment 455. The total capacity of the compartment 448 is five nickels; any over that amount will overflow into the compartment 454 to pass into the chute 456. Similarly the compartment 450 will hold one quarter and the compartment 452 will hold only two dimes and the overflow from these compartments will pass into the compartments 454 and 455 respectively to pass downwardly through chute 456 to the return 441.

A bracket 458 mounted on one face of the panel 430 carries a swingable secondary panel 460, pivotally mounted as at 461 and each of these panels 430 and 460 carries a plurality of pins, all of which are normally perpendicular to each of the panels 430 and 460. These pins are designed to strike the coins deposited in the chamber 436, either one at a time or in combinations of two or more at a time, depending on how many coins are deposited and in what combination.

One of these pins is designated by the numeral 462 and is fixed to the panel 430, as is a second pin indicated by the numeral 464. The panel 460 is slotted at one end thereof to pivotally carry pins 466, 468 and 470 as at 471 and pins 472 and 474 are pivotally mounted in slots provided in the opposite end of the panel 460. Each of the pins 466, 468, 470, 472 and 474 pass through and is guided by one of a plurality of openings 473 in the panel 430. A pin 476 is fixed to the panel 430 and passes through an opening 475 in the

panel 460, while stub pins 478 and 479 are fixed directly to the panel 460.

The pins 462, 464, 466, 468 and 470 are in vertical alignment and designed to pass through five aligned openings formed in the parallel side walls of the coin chamber 436, which openings are disposed in transverse relation to the nickel compartment 448. A similar opening in the quarter compartment 450 is disposed to receive the pin 476 and like openings in the dime compartment 452 are provided for the pins 472 and 474, which latter two pins are also disposed in vertical alignment. No opening in the coin chamber 436 is provided for the stub pins 478 and 479 which are disposed to strike the inner face of the chamber 436.

It is clear from the above description that when there are no coins in the chamber 436, the various pins are free to pass into their respective openings as the panel 430 swings toward the chamber 436, and when a coin is interposed in the path of travel of a pin, that pin will be stopped from further movement when it strikes the side of the coin deposited.

A main electric switch 480 is mounted on the cross-bar 428 and is moved to open and closed positions by the movement of an arm 482 pivotally mounted thereon. A spring within the switch 480 yieldably holds the arm 482 in a position to maintain the switch 480 open. This arm 482 extends below the coin chamber 436 and has three projecting stub pins 483, 485 and 487 extending to lie below compartments 448, 450 and 452 respectively whereby coins deposited into these compartments will normally be retained therein and not allowed to proceed downwardly into the chute 456. Thus, any coin deposited in the chamber 436 and falling on one of the projecting stub pins of the arm 482 will close the switch 480.

A bracket 484 extends inwardly from the cross-bar 434 to pivotally mount a pair of substantially parallel U-shaped rods 486 and 488 (see Figs. 2 and 18) which rods pivotally carry an arm 490 on the free ends thereof, and a cam member 492 is fixed to one end of this arm 490. One leg of the rod 488 that is pivotally mounted in the bracket 484 extends through the bracket 484 and has an arm 494 fixed thereto. The free end of this arm 494 pivotally mounts a rod 496 which extends downwardly to pass through an opening in an extension 498 on the panel 430, to terminate adjacent to one face of the plate 426, and adapted to strike one of a number of blocks mounted on the plate 426. These blocks 500 are adjustably mounted in step-like manner in slots provided in the plate 426 and each correspond respectively to 25¢, 20¢, 15¢, 10¢ and 5¢ cards as hereinafter explained.

A spring 502 interconnects the arm 490 and the bracket 484 to yieldably move the arm 490 and the cam member toward the carriage 60. A spring 504 on the rod 496 tends to swing the panel 430 away from the carriage 60 which movement is opposed by the arm 494 coming into contact with an extension 499 on the panel 430 when this arm 494 moves upwardly.

Referring now to Figs. 5 and 6, the tubular member 174 that carries the plunger rod 170, has a laterally projecting pin 506 fixed thereto near its open end, which pin is adapted to come into contact with the cam member 492 when the carriage 60 moves into the offset portion 409 and in engagement with the dog 410.

As the carriage 60 moves outwardly, the spring 502 causes the cam member 492 to move outwardly and upwardly in an arc with the pin 506, which action moves the tubular member 174 on its pivotal point 176. The position to which the member 174 is moved when the pin 506 has moved away from and out of engagement with the cam member 492 is governed by which of the blocks 500 the free end of the rod 496 comes to rest upon. And, which of the blocks 500 that the rod 496 moves to and comes to rest upon is governed by the distance the panel 430 is permitted to move in a direction to swing the rod 496 by means of the extension 498.

The diagrammatic illustration of the various stopping points of the panel 430 is shown in Fig. 17, presently to be explained. But it is clear now that if one nickel for instance, is deposited by the customer, the panel 430 will move to a position whereby the free end of the rod 496 comes to rest on the lowermost block 500. This raises the cam member 492 to its highest position, which in turn sets the plunger rod 170 at its highest position. With the rod 170 so disposed it will contact a clip 172 positioned over the legend 5 as indicated in Fig. 15 which is also the uppermost of the legend numerals as shown.

Fig. 17 illustrates the five different positions to which the panel 430 must move to correctly position the rod 496 on the proper block 500, which positions correspond to the five differently priced cards and to the five blocks 500 ranging from the uppermost 25¢ block to the lowermost 5¢ block.

To clearly understand the diagram used for illustration by Fig. 17, it is necessary to keep in mind that the distance that the panel 430 is allowed to swing is the determining factor for the positioning of the tubular member 174. Thus, since the machine is designed to vend five groups of differently priced cards, namely 25¢, 20¢, 15¢, 10¢ and 5¢ cards, the panel 430 must assume five different positions other than the normal starting position. Since the pivotal point 461 moves in like manner, the distances respectively which this point 461 will travel are illustrated by reference to points A, B, C, D and E. In other words, if a 25¢ card is selected, point 461 will move a distance indicated by the arrowed line in Fig. 17 having the indicia "25¢" thereon, which line extends between point "A" and the inner face of the chamber 436. Lines of connection between the free ends of the various pins in the panels 436 and 460 are diagrammatically indicated by dash lines *a, b, c, d, e, f, g, h, i* and *j*, it being understood that these lines pivot about the pivotal point 461 as does the panel 460.

If a nickel card is desired for instance and the customer deposits one nickel, this nickel piece in the bottom of the compartment 436 and resting on the stub 483 will be contacted by the pin 470, and the pin 478 will contact the inner wall of the chamber 436. Line *"a"* passes through point E, the distance between E and the inner wall of the chamber 436 being the distance which panel 430 will swing from its normal starting position, thus establishing one stopping position of the panel 430. If a 10¢ card is desired and two nickels are deposited, then the pin 468 will strike the second nickel and the line of connection *"b"* between the pin 468 will strike the second nickel and the line of connection *"b"* between the pin 468 and the pin 478 will establish point D. But, if one dime is deposited for the 10¢ card, then the pin 474 will contact this dime and line of connection *"d"* between the pin 474 and the stub 479

striking the chamber 436 will pass through this same point D.

If a 15¢ card is desired, then either the combination of three nickels or one dime and one nickel may be deposited, either of which will establish point C in the following manner. If three nickels are deposited in the compartment 436, the pin 466 will strike the third nickel and line "c" will pass through point C. If one dime and one nickel is deposited in the compartments 452 and 448 respectively, then the pin 470 will contact the nickel and the pin 474 will contact the dime to establish line "e" between the free ends of the pin 470 and the pin 474 which also passes through point C.

A 20¢ card may be secured by depositing the combinations of four nickels, two dimes, or one dime and two nickels. In case of four nickels, the pin 464 will strike the fourth nickel establishing line "j" passing through point B. If two dimes are used, then the pin 472 will strike the second dime to present line "h" which also passes through point B. And, if one dime and two nickels are deposited, then the pin 474 will contact the dime and the pin 468 will contact the second nickel to establish line "f" which in the same manner passes through point B.

Finally, the combinations for a 25¢ card are one quarter, five nickels, two dimes and one nickel, and one dime and three nickels. Here too, all lines of connection pass through a common point to which the pivotal point 461 will move. This point is A and is established in the following manner: One dime and three nickels will establish line "g" by the pin 474 contacting the dime and the pin 466 contacting the third nickel which line "g" passes through point A. The use of five nickels whereby the pin 462 contacts the fifth nickel also sets point A along the same line "g", as does the use of one quarter to be contacted by the pin 476. And, two dimes and one nickel brings the pin 472 in contact with the second dime and the pin 470 in contact with the nickel to establish line "i", which also passes through point A.

Thus, any combination of coins may be used to set the entire coin controlled mechanism 204 into operation whereby the plunger rod 170 is properly set to contact the predetermined positioning of the clip 172 according to the price of the card within its holder 38.

Once deposited, all coins within the chamber 436 remain therein and hold the switch 480 closed while the platform 48, the carriage 60 and the assembly 64 are in operation. These coins are released to fall into the chute 456 for deposit in a coin box 508 by the roller 404 on the carriage 60 striking the dog 410, pivotally mounted as at 510 to the ear 412. A spring 512 interconecting the dog 410 and the ear 412 is mounted in an off-center manner with respect to the pivotal point 510 to maintain the dog 410 in one of two positions depending on whether or not the roller 404 is in contact therewith. The dog 410 terminates directly above one leg of a T-shaped arm 516. Thus, when the roller 404 is out of contact with the dog 410, arm 516 will be tilted counter-clockwise (Fig. 2). As the carriage 60 returns to its starting position, roller 404 moves into engagement with the dog 410 to raise it from the arm 516 whereby a spring 532 causes this arm 516 to pivot as at 530.

The arm 482 is of resilient material to permit transverse movement thereof to release coins thereon into the chute 456 by an L-shaped member 518 having the free end of one leg thereof bifurcated to connect with the arm 482 and the other leg pivotally mounted in brackets 520 on a cross-bar 522 of the section 34. An arm 524 is fixed to the free end of the said other leg of the member 518, which arm 524 is connected to a dash pot structure having a piston 526 pivotally fixed thereto as clearly illustrated in Fig. 18. Downward movement of the piston 526 will swing the member 518 to flex the arm 482 and release the coins thereon.

An air cylinder 528 for the piston 526 is pivotally fixed to one leg of the arm 516, which arm is pivotally mounted as at 530 and is yieldably held in the position illustrated in Fig. 2 by the spring 532. When the carriage 60 moves outwardly to move the roller 404 out of contact with the dog 410, the cylinder 528 will be moved upwardly and a delayed action on its return downward movement will be established when the carriage 60 returns to its normal starting position and the dog 410 is raised from the arm 516 so as to allow the coins to have sufficient time to pass into the coin box 508 before the arm 482 again moves into position to stop coins for the next operation of the machine.

A spring 533 shown in Fig. 18 moves the member 518 back into position to allow the arm 482 to return to its normal non-flexed position after the cylinder reaches the end of its downward path of travel.

A gate 534, pivotally mounted in the chute 456 is normally disposed to allow coins that pass from the chamber 436 to return to the customer by passing into the chute 440. If the customer desires the coins to be returned, he merely presses inwardly on a rod 536 connected to the arm 516 and the gate 534 will be in its normal position to permit such return. It is also notable that one leg of the arm 516 engages the coin selector assembly 438 to clear any coins or slugs that may be lodged therein.

This gate 534 also remains in this position when the card holder 38 is empty to return the coins to the customer because this gate 534 is actuated only when a card falls on the tray 84. A solenoid 538, having its core fixed to the gate 534 is energized by the closing of a mercury switch 540 on the tray 84. Plate 549 is pivotally mounted as at 550 to walls 80 and 82 and pivotally carries tray 84 on its free end. When a card drops on tray 84 to close switch 540, solenoid 538 is energized to move gate 534 away from an opening 544 in the chute 456, which opening is directly above coin box 508.

An extension 548 on the plate 549 comes into contact with the ear 412 as the carriage 60 returns to its starting position causing the tilting of tray 84 to dump the card into an opening 552 in the section 32, whereupon the card tray falls by gravity into a chute 554 accessible to the customer.

This dumping action open the switch 540 causing the de-energization of the solenoid 538. At the same time the coins resting on the arm 482 will be released to fall into the chute 456 to pass through the opening 544. In order to maintain the gate 534 open for a sufficient time to permit the coins to enter the opening 544, a relatively heavy retarding wheel 546 is fixed to the pivot pin for gate 534 to create a delayed closing action after the solenoid 538 de-energizes. A guard 556 pivotally fixed to the sleeve 150 prevents cards from being thrown beyond the basket 78 and is opened by the action of the plate 549

through the medium of a rod 558 interconnecting the plate 549 and the guard 556 as is clear in Fig. 7.

As the arm 88 moves outwardly and downwardly from the basket 78, a pair of fingers 560 on a cross-bar 562 fixed to the free end of the stretch 168 thereof, is moved above the cards in one of the holders 38. The angle of inclination of the holders 38 is substantially the same as that of the slot 86 when the basket 78 is swung toward and is in contact with a holder. And, the stretch 168 of the arm 88 is maintained at that same angle of inclination by the tip 166 of the spring 164 riding along the lower edge of the slot 86. When this tip 166 strikes the lowermost end of the slot 86, the spring 164 is forced outwardly therefrom, permitting the arm 88 to fall downwardly through the action of its pivot in the block 162, whereby the fingers 560 fall on the top card in a holder 38. This changes the angle of inclination of the stretch 168 and as the arm 88 is snapped back because of the roller 132 slipping off the cam 92, a card is pulled from its holder and thrown into the basket 78 to light on the tray 84.

Cross-bar 562 extends beyond the fingers 560 as shown in Fig. 9 to come in contact with the framework of holder 38 when all cards have been removed therefrom. This contact closes an electrical circuit to energize a "sold out" light as hereinafter more fully explained.

The fingers 560 are of resilient material and provided along their lower faces with frictionable material such as emery cloth or the like to provide a positive engaging surface on the cards 42. A leaf spring 563 fixed to the wall 80 adjacent the upper end of the slot 86 forces the tip 166 back into the slot 86 on the return upward movement of the spring 164.

A chute 564 is provided for pennies in States requiring tax on such items as cards, and an assembly is provided which also prevents the delivery of cards to the customer when no penny is deposited. An L-shaped crank 566 is pivoted to the plate 426 and is flanged to receive a plurality of rods 568, each of which is connected to one of the blocks 500. When a penny is thus required, the blocks 500 are not fixed to the plate 426 but mounted to slide within slots 570 provided in the plate 426, through the medium of screws 572 having bushings 574 disposed within the slots 570.

A pin 576 projects from one edge of the member 518 and is disposed transversely through the chute 564 to retain the penny dropped therein and a projection 578 on the crank is in position to contact the penny within the chute 564 as the penny is resting on the pin 576. Thus, the penny holds the blocks 500 in position to retain the rod 496. But, if there is no penny, the blocks 500 are free to move downwardly whereby the rod 496 will move downwardly so that the plunger rod 170 will contact no clip and the customer receives no card. Obviously, any number of the blocks 500 or all may be released to slide in the slots 570 in the plate 426 depending on which priced card requires a penny tax. A spring 580 causes the projection 570 to release the penny when the rod 496 moves away from the blocks 500, and as the member 518 moves to release coins on the arm 482 the penny will fall from the pin 576 to pass into the chute 456.

The sequence of mechanical operations just above described, is accompanied by electrical operations in addition to those mentioned. All of these electrical actions of the machine may be understood by reference to Fig. 20, schematically illustrating the electrical circuit forming a part of the equipment.

The machine is constructed to operate from commercial power lines by being plugged into a conventional outlet, not here shown. Inasmuch as many of the electrical elements are carried by movable parts of the machine, it is necessary to reduce the voltage for those circuits to comply with the wiring codes. A conventional transformer 600 is, therefore, employed to establish a secondary circuit of lower voltage.

In operation, the first action on the part of the customer is to make a selection of the card desired by moving one of the plates 210 to a set position as above described. Next, he inserts the proper amount of money in the form of coins according to the designated price appearing on the facsimile of the card 42 desired, which facsimile is mounted on the selected plate 210. The coins so deposited will close switch 480, but the complete circuit for energizing the motor 124 is not closed until the customer performs the third step, i. e. the actuation of the push button 248 adjacent the row of plates 210 from which the selection was made, whereupon the second main switch 258 is closed.

The contacts forming a part of the switch 258 which are thus closed are illustrated in Fig. 20 by the numerals 602 and 604, and the closing of the switch 480 brings together the contacts 606 and 608. A three-pole relay designated as R—1 of conventional character has three contact fingers 610, 612 and 614. The finger 610 has a pair of contacts 616 and 618, as does the finger 612 indicated by the numerals 620 and 622. A single contact is formed on the finger 614.

The contact 618 on finger 610 and a contact 626 within the relay R—1 are normally closed, as are the contact 622 of finger 612 and a contact 628 within the relay R—1. Assuming now that these contacts are closed and that the switches 258 and 480 have been closed as above described, the circuit to actuate the motor 124 through the relay R—1 is traced as follows:

From power line 630, through contacts 604 and 602, wire 632, contacts 606 and 608, wires 634 and 636, motor armature 641, wire 638, finger 610, contacts 618 and 626, wires 640 and 642, motor field 643, wires 645 and 644, contacts 628 and 622, finger 612, wires 646 and 648 to power lines 670.

When the cycle of operation of the machine reaches a stage where a card 42 has been withdrawn from its compartment 38 and deposited on the tray 84, switch 190 is closed as above set down, to reverse the motor 124. The contacts of this switch 190 which are thus closed are designated in Fig. 20 by the numerals 672 and 674. Since switch 190 moves with the carriage 60, it is located in the secondary circuit which is energized upon the energization of the transformer 600, and this circuit is traced as follows:

From power line 630 through contacts 604 and 602, wire 632, contacts 606 and 608, wires 634 and 678, transformer 600, wires 680 and 648 to power line 670.

With the secondary circuit thus energized and the contacts 672 and 674 of switch 190 closed, the relay R—1 is closed or "sealed in" by the energization of its coil 676 through the following circuit:

From the transformer 600 through wires 682, 684 and 686, contacts 674 and 672, wires 688 and

690, coil 676 of relay R—1, wires 692 and 694 to transformer 600.

With relay R—1 thus closed or "sealed in," fingers 610, 612 and 614 are actuated magnetically by energization of coil 676 to close contacts 616 and 708, contacts 620 and 702 and contacts 624 and 698 respectively. The motor field 643 is therefore, reversed with respect to the armature of motor 124 whereby the direction of rotation of the latter is reversed, and this circuit is traced as follows:

From power line 670 through wires 648 and 646, finger 612, closed contacts 620 and 702, wires 704 and 642, motor field 643, wire 706, closed contacts 708 and 616, finger 610, wire 638, motor armature 641, wires 636 and 634, closed contacts 608 and 606, wire 632, and closed contacts 602 and 604 to power line 630.

As hereinbefore described, when carriage 60 approaches its starting position, the pin 182 on switch 190 contacts the cam block 115 to actuate the switch 190 for again reversing the motor 124 to its original direction of travel. However, at this point in the cycle of operation, the motor 124 must not be reversed inasmuch as the instant cycle has not been completed. When relay R—1 is closed, switch 190 is bypassed as follows:

From transformer 600, through wires 682, 684 and 696, closed contacts 698 and 624 of relay R—1, finger 614, wires 700 and 690, coil 676, wires 692 and 694 to transformer 600.

When push button 248 is actuated by the customer to close switch 258 and thereby energizing the primary circuit after switch 480 has been closed by the coins, solenoid 260 is energized to maintain rod 252 in an upward position and adjacent to shoulder 264 whereby handle 246 is held in its moved position near frame member 222. The circuit which energizes solenoid 260 is traced as follows:

From power line 670, through wire 710, solenoid 260, wires 712 and 634, closed contacts 608 and 606, wire 632, closed contacts 602 and 604 to power line 630.

Assuming the secondary circuit to be closed as set down above, the closing of one of the switches 318 upon actuation of a push button 248 and swinging movement of arm 288 will energize the corresponding solenoid 332. Two of these solenoid-switch combinations only are illustrated in Fig. 20. It is necessary to trace the circuit of only one and assuming contacts 714 and 716 of a switch 318 to be closed, this circuit is traced as follows:

From transformer 600, through wires 694, 718 and 720, solenoid 332, wire 724, closed contacts 714 and 716 of switch 318, wires 726, 728, 730 and 682 to transformer 600.

Switch 540 on tray 84 is closed to energize solenoid 538 and thereby open gate 534 upon the landing of a card 42 on the tray 84 to permit coins falling into box 508 as above set down. This circuit is traced as follows:

From transformer 600, through wires 694, 718, 732, 734 and 736, solenoid 538, wire 738, closed contacts 740 and 742 of switch 540, wires 744, 746, 748, 728, 730 and 682 to transformer 600.

When a plate 210 is selected from the lowermost zone of display cards at the front of the machine whereby it becomes necessary to release trigger 324 so that the assembly 64 will rotate 180 degrees to remove a card 42 from the opposed wall of holders 38, switch 316 is closed to energize solenoid 320. This circuit is traced as follows:

From transformer 600, through wires 694, 718,

732, 734, 750, and 752, solenoid 320, wire 754, closed contacts 756 and 758 of switch 316, wires 760, 762, 746, 748, 728, 730 and 682, to transformer 600.

When the holder 38 designed to contain a card selected by the customer is empty, the "sold out" indication is illuminated by an incandescent lamp. This lamp is energized when cross-bar 562 comes into contact with holder 38 establishing a closed circuit through the medium of the grounding of holder 38 with the frame to which it is fixed, but insulated therefrom. Cross-bar 562 and holder 38 are illustrated in Fig. 20 as contacts, which when closed, form a circuit for energizing lamp 561 as follows:

From lead line 764 in communication with the secondary circuit, through wire 772, lamp 561, wires 776 and 778, closed contacts 38 and 562 to carriage 60, illustrated in Fig. 20 as conductor 782 to the framework of the cabinet illustrated as ground 784 and 785.

Since cross-bar 562 engages holder 38 only momentarily, a by-pass is provided through relay R—2 to maintain lamp 561 in a lighted condition until all current is cut off to insure that the customer notices that his chosen card is sold out. This relay R—2 comprises a coil 768 energized when contacts 562 and 38 are closed and contacts 786 and 788 are thereby closed upon energization of coil 768.

The circuit for energizing coil 768 is traced as follows:

From lead line 764, through wire 766, coil 768, wires 770 and 778, closed contacts 38 and 562, conductor 782 to ground 784.

Assuming contacts 786 and 788 of relay R—2 to be closed, the by-passed circuit for maintaining lamp 561 energized after contacts 38 and 562 are opened, is traced as follows:

From lead line 764, through wire 772, lamp 561, wires 776, 778 and 790, closed contacts 788 and 786, wire 792, to ground 784.

A completed cycle of operation of this machine has been progressively set forth in the foregoing description of the component parts, and it is believed that such operation will become readily understandable by those skilled in the art. While it has been contemplated that this invention be used for vending greeting cards, it has been found that envelopes of the size usually associated with such cards can be vended simultaneously with each card by inserting the card therein or merely placing the card beneath the flap of the envelope before stacking the same in respective holders in the cabinet of the machine.

It is, therefore, understood that with no more alteration than the relative size of certain parts of the machine, virtually any planar object can be accommodated by the apparatus forming a part of this invention.

Obviously, many advantages will arise from the employment of a machine having this invention employed therein, and while a large number of important features have herein been set down and many others have become apparent throughout this specification, it will be understood that those made possible by the invention are contemplated hereby.

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

1. In a vending machine for greeting cards, a cabinet having a discharge opening; a plurality of card holders in the cabinet; mechanism for removing a card from a selected holder and de-

positing the same into said discharge opening; structure having manually manipulable parts for selecting the holder from which a card is to be removed; and means interconnecting said structure and said mechanism for controlling the operation of the latter, said mechanism including a vertically reciprocable platform, a carriage reciprocable horizontally on said platform, and a card removing assembly on the carriage.

2. In a vending machine for greeting cards, a cabinet having a discharge opening; a plurality of card holders in the cabinet; mechanism for removing a card from a selected holder and depositing the same into said discharge opening; structure having manually manipulable parts for selecting the holder from which a card is to be removed; and means interconnecting said structure and said mechanism for controlling the operation of the latter, said card holders being arranged in vertical series, which series are disposed in side-by-side relationship, the correspondingly positioned holders of each series being in common horizontal rows, said mechanism having a vertically reciprocable platform and a carriage reciprocable horizontally on said platform, said platform and said carriage being movable to and from a position in substantial alignment with the row and the series respectively containing the said selected holder.

3. In a card vending machine of the character described having a plurality of holders for vendible cards, means for removing said cards one at a time from a selected holder comprising an arm reciprocable to and from a card engaging position in said selected holder; means on said arm for dragging a card from its holder as the arm is moved therefrom; a rotatable cam member; structure responsive to the rotation of said cam member for reciprocating said arm; and a basket having a diagonally disposed slot formed in one side thereof, said arm being guided by said slot downwardly and outwardly from said basket as it moves toward the holder.

4. In a card vending machine of the character described having a plurality of holders for vendible cards, means for removing said cards one at a time from a selected holder comprising an arm reciprocable to and from a card engaging position in said selected holder; means on said arm for dragging a card from its holder as the arm is moved therefrom; a rotatable cam member; a basket having a slot formed in one side thereof; a block slidable in said slot, said arm being pivotally mounted in the block; structure responsive to the rotation of said cam member for imparting sliding movement to said block to reciprocate said arm; a releasable spring for holding said arm against rotation; and means for releasing said spring when the arm is in the holder for permitting movement of the arm by gravity into engagement with a card in said holder.

5. In a card vending machine of the character described having a plurality of holders for vendible cards, means for removing said cards one at a time from a selected holder comprising an arm reciprocable to and from a card engaging position in said selected holder; means on said arm for dragging a card from its holder as the arm is moved therefrom; a rotatable cam member; and structure responsive to the rotation of said cam member for reciprocating said arm; said structure including a spring loaded plunger, having a roller on one end thereof, said cam member being a spirally formed rod in engagement with said roller for moving the plunger against the action of said spring as the said cam member is rotated.

6. In a card vending machine of the character described having a plurality of holders for vendible cards, means for removing said cards one at a time from a selected holder comprising an arm reciprocable to and from a card engaging position in said selected holder; means on said arm for dragging a card from its holder as the arm is moved therefrom; a rotatable cam member; and structure responsive to the rotation of said cam member for reciprocating said arm; said structure including a spring loaded plunger, having a roller on one end thereof, said cam member being a spirally formed rod in engagement with said roller for moving the plunger against the action of said spring as the said cam member is rotated, the ends of said cam being joined by a member substantially parallel to said plunger for guiding the roller as it slips from the lowermost end of the cam whereby a snap action is imparted to the arm as it is withdrawn from said holder.

7. In a card vending machine of the character described having at least one holder for said cards, a basket swingable to and from engagement with said holder; a reciprocable arm rotatably mounted in said basket; a rotatable cam member; means responsive to the rotation of said cam member for swinging said basket and moving one end of said arm into the holder, said end of the arm having frictionable material fixed thereto; means automatically releasable as said end of the arm moves into the holder for holding the arm against rotation whereby the said end falls by the action of gravity on the uppermost card in the holder; and means responsive to the continued rotation of said cam member for snapping the arm to its starting position in the basket whereby said card is dragged from its holder and dropped in the basket through the medium of engagement of the card by said frictionable material.

8. In a card vending machine of the character described having a plurality of card holders mounted on the innermost faces of opposed walls, a rotatable basket disposed between said holders; means for shifting said basket to and from a selected holder on either of said walls; mechanism on said basket for removing a card from said selected holder and depositing the same in the basket; a releasable trigger for holding the basket against rotation when the selected holder is on one of said walls; means for rotating said basket to a card removing position when the selected holder is on the other of said walls; and means for releasing said trigger to permit such rotation.

9. In a card vending machine of the character described having a plurality of card holders mounted on the innermost faces of opposed walls, a rotatable basket disposed between said holders; means for shifting said basket to and from a selected holder on either of said walls; mechanism on said basket for removing a card from said selected holder and depositing the same in the basket; a releasable trigger for holding the basket against rotation when the selected holder is on one of said walls; means for rotating said basket to a card removing position when the selected holder is on the other of said walls; means for releasing said trigger to permit such rotation; and a selector assembly, having manually manipulable parts for controlling the operation of said basket shifting means, said assembly having

means operable upon manipulation of certain of said parts for energizing said actuating means.

10. In a card vending machine of the character described having a plurality of holders for vendible cards, mechanism for removing said cards one at a time from selected holders, and means including a reciprocable platform for shifting said mechanism to and from an operative position in alignment with said selected holder, means for controlling the movement of said platform comprising a plurality of stop means, each movable to and from a position in the path of travel of the platform; means responsive to the movement of said platform for actuating said stop means; and structure having manually manipulable parts for controlling the movement of said stop means.

11. In a card vending machine of the character described having a plurality of holders for vendible cards, mechanism for removing said cards one at a time from selected holders, and means including a reciprocable platform for shifting said mechanism to and from an operative position in alignment with said selected holder, means for controlling the movement of said platform comprising a plurality of stop means, each movable to and from a position in the path of travel of the platform, said stop means comprising a rotatable column having a plurality of lug members disposed spirally thereon; means responsive to the movement of said platform for rotating said column; and structure having manually manipulable parts for controlling the rotation of said column whereby a selected lug member is disposed in the path of travel of the platform.

12. In a card vending machine of the character described having a plurality of holders for vendible cards, mechanism for removing said cards one at a time from selected holders, and means including a reciprocable platform for shifting said mechanism to and from an operative position in alignment with said selected holder, means for controlling the movement of said platform comprising a plurality of stop means, each movable to and from a position in the path of travel of the platform, said stop means comprising a rotatable column having a plurality of lug members disposed spirally thereon; means responsive to the movement of said platform for rotating said column; and structure having manually manipulable parts for controlling the rotation of said column whereby a selected lug member is disposed in the path of travel of the platform, said parts including a number of swingable plates corresponding one each to one of said lugs, said structure having an arm swingable upon rotation of said column and controlled by any one of said plates when swung to a predetermined position.

13. In a card vending machine of the character described, a plurality of holders for vendible cards; mechanism for removing said cards one at a time from selected holders; means including a reciprocable carriage for shifting said mechanism to and from an operative position in alignment with said selected holder; and means for controlling the movement of said carriage comprising a plurality of stop means, each movable to and from a position in the path of travel of the carriage, electrically operable actuating means for each stop means respectively, and structure having manually manipulable means for initiating energization of a selected one of said actuating means.

14. In a card vending machine of the character described, a plurality of holders for vendible cards; mechanism for removing said cards one at a time from selected holders; means including a reciprocable carriage for shifting said mechanism to and from an operative position in alignment with said selected holder; and means for controlling the movement of said carriage comprising a plurality of stop means, each movable to and from a position in the path of travel of the carriage, electrically operable actuating means for each stop means respectively, and structure having manually manipulable means for initiating energization of a selected one of said actuating means, said holders being arranged in vertical side-by-side series, said stop means being disposed to prevent movement of the carriage beyond the series including the said selected holder.

15. In a card vending machine of the character described, a plurality of holders for vendible cards; mechanism for removing said cards one at a time from selected holders; means including a reciprocable carriage for shifting said mechanism to and from an operative position in alignment with said selected holder; and means for controlling the movement of said carriage comprising a plurality of stop means, each movable to and from a position in the path of travel of the carriage, electrically operable actuating means for each stop means respectively, and structure having manually manipulable means for initiating energization of a selected one of said actuating means, said holders being arranged in vertical side-by-side series, said stop means being disposed to prevent movement of the carriage beyond the series including the said selected holder, said structure including a number of electric switches for closing a circuit through each of said actuating means respectively, and a reciprocable bar for each switch respectively for actuating the same.

16. In a card vending machine of the character described having a reciprocable platform and a carriage reciprocable on the platform for shifting parts of the vending mechanism to and from a number of operative positions, means for controlling the movement of said platform and means for controlling the movement of said carriage comprising a plurality of stop means for said platform and for said carriage respectively; apparatus responsive to the movement of said platform for actuating the stop means therefor; actuating means for the stop means for said carriage; and structure having manually manipulable parts for controlling the operation of said apparatus and said actuating means respectively whereby said parts are shifted to and from selected operative positions when said machine is placed in operation.

17. In a card vending machine of the character described having at least one holder for vendible cards, mechanism for removing cards one at a time from said holder; a rotatable cam member for operating said mechanism; a vertically reciprocable platform and a carriage reciprocable horizontally on said platform for shifting said mechanism to and from an operative position in alignment with the holder, said mechanism and said cam member being mounted on said carriage; a prime mover; and an endless chain operably interconnecting the platform, the carriage, the cam member and the prime mover, said mechanism having means for holding said cam member against rotation as said carriage and said

platform shift the mechanism to said operative position.

18. In a card vending machine of the character described having at least one holder for vendible cards, mechanism for removing cards one at a time from said holder; a rotatable cam member for operating said mechanism; a vertically reciprocable platform and a carriage reciprocable horizontally on said platform for shifting said mechanism to and from an operative position in alignment with the holder, said mechanism and said cam member being mounted on said carriage; a prime mover; and an endless chain operably interconnecting the platform, the carriage, the cam member and the prime mover, said mechanism having means for holding said cam member against rotation as said carriage and said platform shift the mechanism to said operative position, said platform having means operably connected thereto for initiating movement thereof as said prime mover is energized whereby the platform and the carriage move in one direction vertically and horizontally respectively and the cam member rotates in successive timed relation as said chain is actuated by the prime mover.

19. In a card vending machine of the character described, a selector assembly having manually manipulable means, including a swingable arm for controlling the operation of parts of the vending machine; means responsive to the operation of certain of said parts for swinging said arm; a number of plates, each selectively swingable to and from an operative position; and structure interconnecting said arm and a selected plate when the latter is in said operative position for limiting the movement of said arm, said structure including a reciprocable member operably connected to said arm, and means on said selected plate engageable with the said member when the selected plate is in said operative position for limiting the movement of said member and said arm.

20. In a card vending machine of the character described, a selector assembly having manually manipulable means, including a swingable arm for controlling the operation of parts of the vending machine; means responsive to the operation of certain of said parts for swinging said arm; at least one plate manually swingable to and from an operative position; and structure interconnecting said arm and said plate when the latter is in said operative position for limiting the movement of said arm, said structure including a reciprocable member operably connected to said arm, and means on the plate engageable with the said member when the plate is in said operative position for limiting the movement of said member, said structure having a manually swingable bar for slidably mounting said reciprocable member, said member being engageable with said means on the plate when said bar is swung to a predetermined position.

21. In a card vending machine of the character described, a selector assembly for controlling the operation of parts of the vending machine comprising a plurality of plates, each being manually swingable to and from an operative position; a manually swingable bar; a second bar swingably mounted on said first mentioned bar; a reciprocable member slidably mounted on the second bar; a swingable arm for imparting sliding movement to said member; a pair of hooks on the member; an offset projection on each plate, the projection of a selected one of a certain group of said plates being engageable with one of said hooks when said selected plate is moved to a predetermined position and said member is moved in one direction; cooperative means on one of said plates and on said second bar respectively for permitting swinging of said second bar to move the other hook into a position engageable with the projection on a plate selected from another group of plates when the same is moved to a predetermined position and said member is moved in said one direction; and structure interconnecting said member and parts of the vending machine for controlling the operation of the latter when said member is reciprocated.

22. In a vending machine for greeting cards, a cabinet having a discharge opening; a plurality of card holders in the cabinet; mechanism for removing a card from a selected holder and depositing the same into said discharge opening; structure having manually manipulable parts for selecting the holder from which a card is to be removed; and means interconnecting said structure and said mechanism for controlling the operation of the latter, said card holders being arranged in a plurality of horizontal rows, said mechanism having a reciprocable platform movable to and from a position in substantial alignment with the row containing the said selected holder, and a reciprocable carriage on said platform.

23. In a vending machine for greeting cards, a cabinet having a discharge opening; a plurality of card holders in the cabinet; mechanism for removing a card from a selected holder and depositing the same into said discharge opening; structure having manually manipulable parts for selecting the holder from which a card is to be removed; and means interconnecting said structure and said mechanism for controlling the operation of the latter, said card holders being arranged in vertical side-by-side series, said mechanism having a reciprocable carriage movable to and from a position in substantial alignment with the series containing the said selected holder, and means on the carriage for pulling a card from the selected holder and depositing the same upon said carriage.

24. In a vending machine for greeting cards, a cabinet having a discharge opening; a plurality of card holders in the cabinet; mechanism for removing a card from a selected holder and depositing the same into said discharge opening, said mechanism including a reciprocable platform and a carriage shiftable on the platform; structure having manually manipulable parts for selecting the holder from which a card is to be removed; and means interconnecting said structure and said mechanism for controlling the reciprocation of said platform and shifting movement of said carriage, said structure including a display rack having a plurality of plates for mounting facsimiles of the cards in said holders, said plates being movable to and from a position for controlling the operation of said interconnecting means.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
317,234	Spitzli	May 5, 1885
732,766	Matthewson	July 7, 1903

(Other references on following page)

UNITED STATES PATENTS

Number	Name	Date
852,222	Conover	Apr. 30, 1907
1,009,265	Stern et al.	Nov. 21, 1911
1,312,860	Marvin	Aug. 12, 1919
1,533,698	Cox	Apr. 14, 1925
1,956,059	Crabb	Apr. 24, 1934
1,962,640	Fell	June 12, 1934
2,006,390	Gebert et al.	July 2, 1935
2,010,542	Gebert et al.	Aug. 6, 1935
2,050,161	Crabb	Aug. 4, 1936
2,128,179	Du Grenier	Aug. 23, 1938
2,185,872	Stra	Jan. 2, 1940
2,231,266	Gebert et al.	Feb. 11, 1941
2,279,664	Du Grenier	Apr. 14, 1942
2,283,252	Hartman et al.	May 19, 1942

FOREIGN PATENTS

Number	Country	Date
237	Germany	Sept. 25, 1899