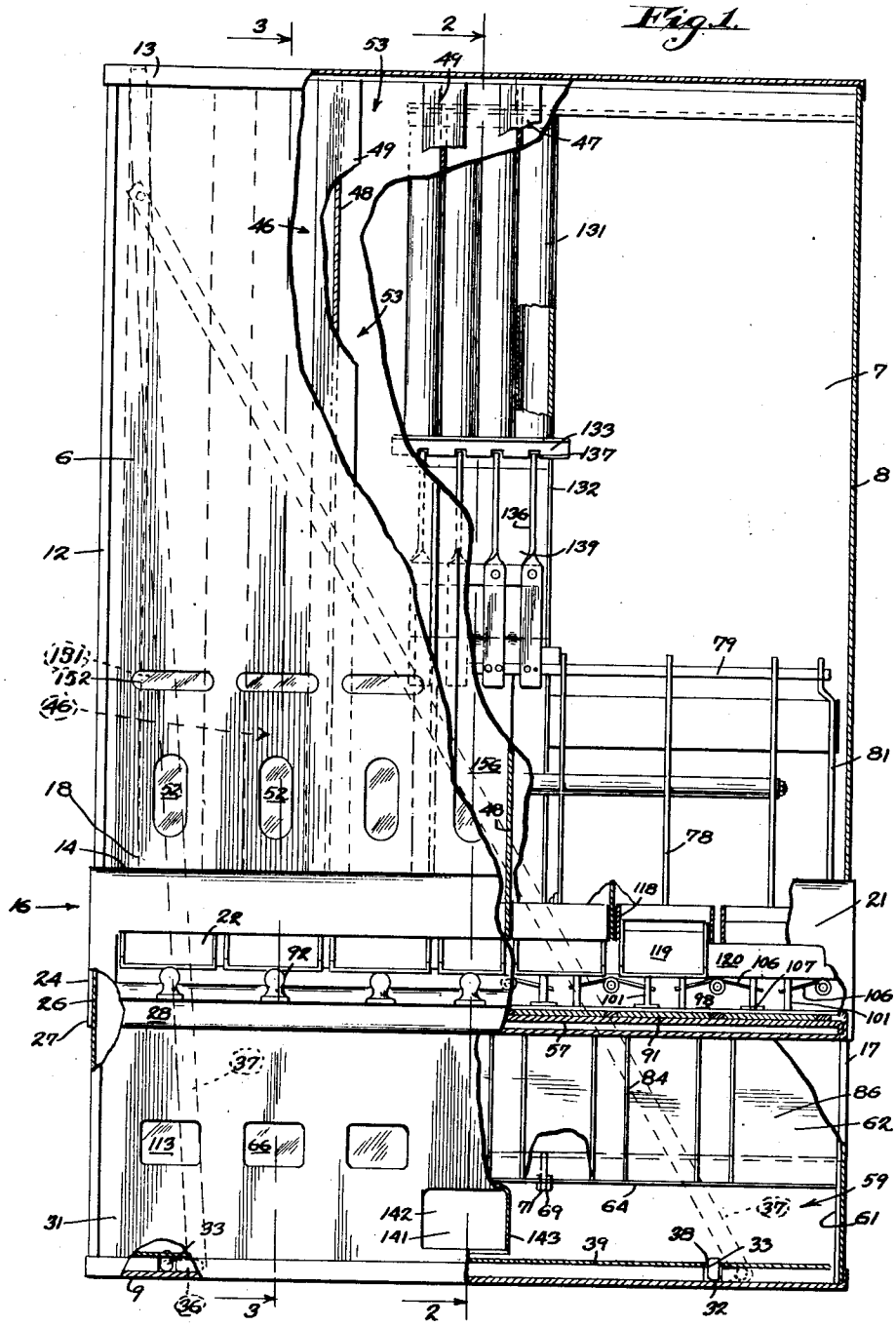
Dec. 12, 1933. T. C. MARTIN ET AL 1,939,127

VENDING MACHINE

Filed Aug. 14, 1929 4 Sheets-Sheet 1

Fig. 1.



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VENDING MACHINE

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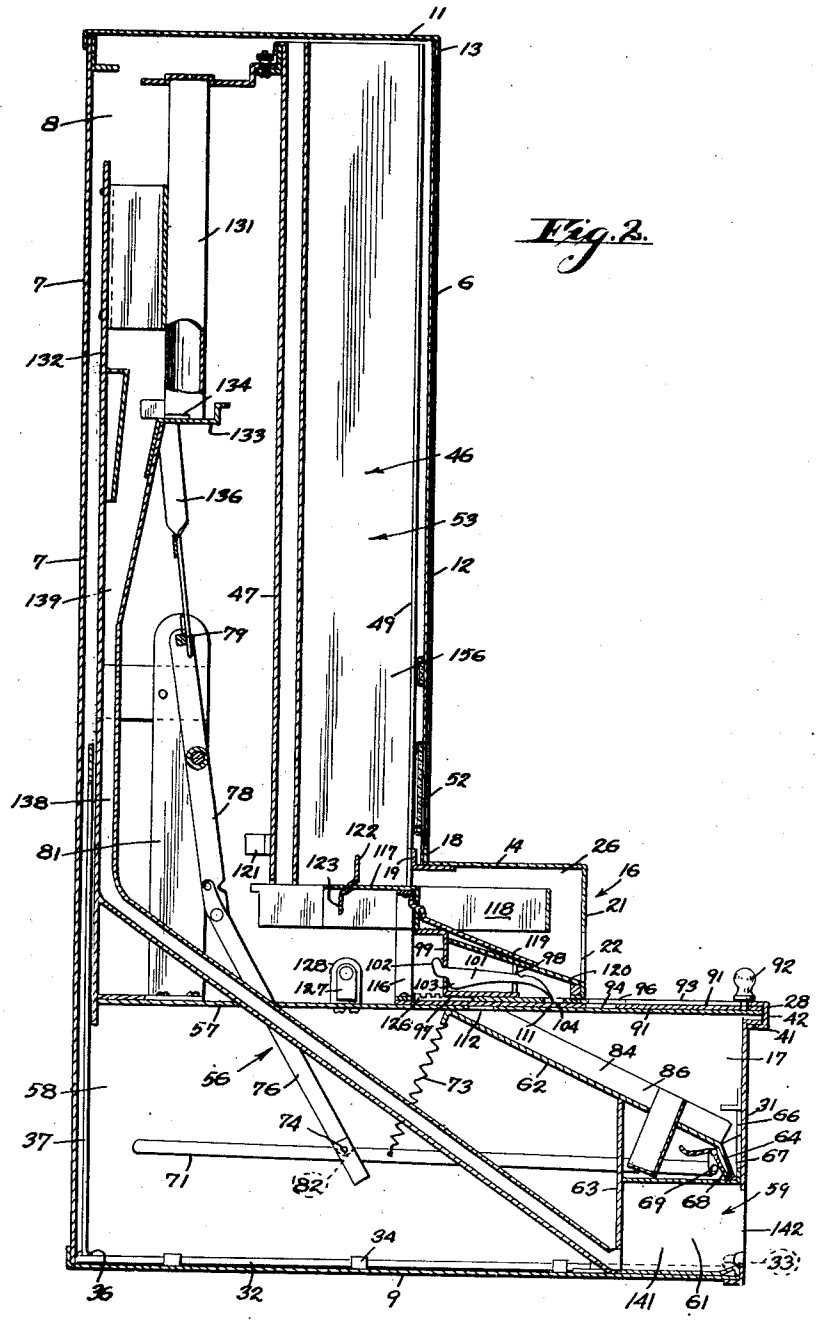


Fig. 2.

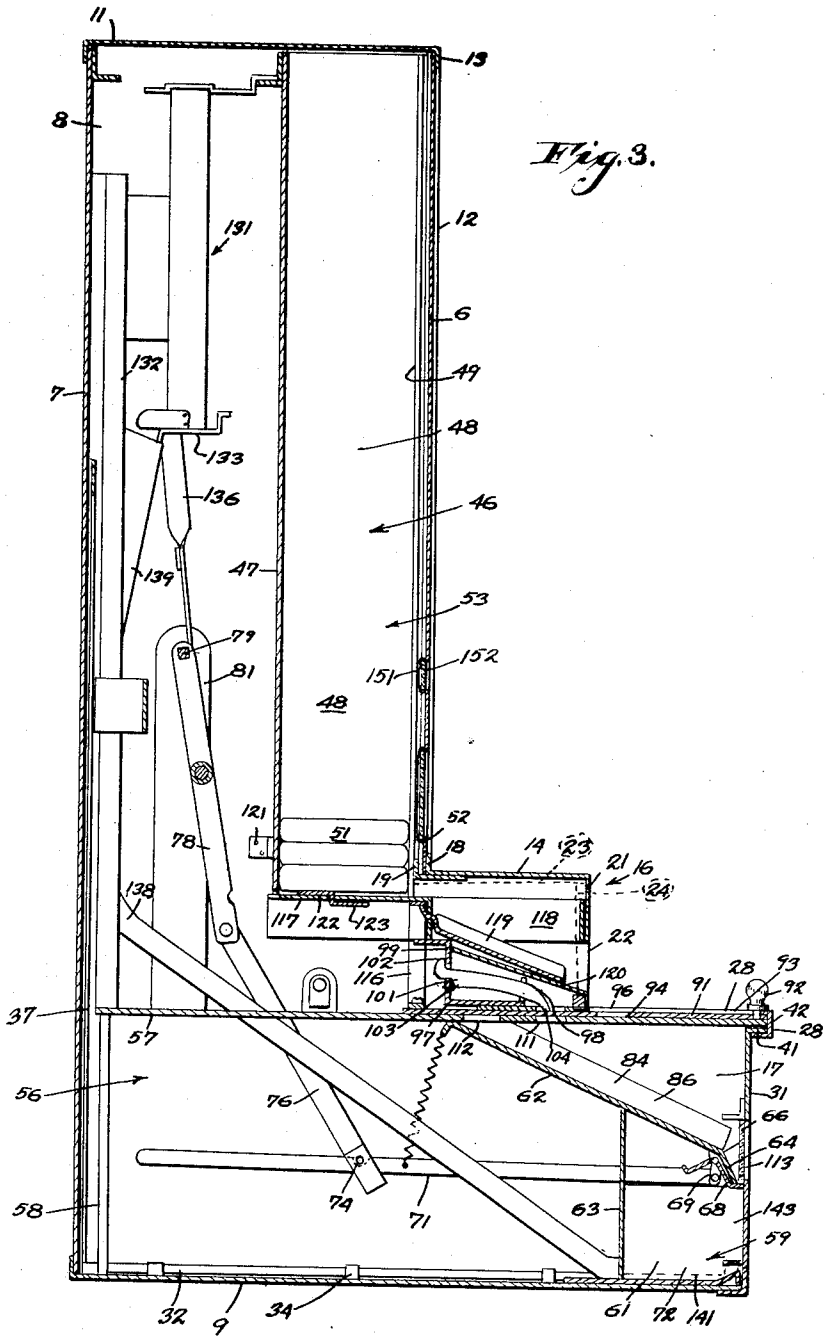
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VENDING MACHINE

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Fig. 3.



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VENDING MACHINE

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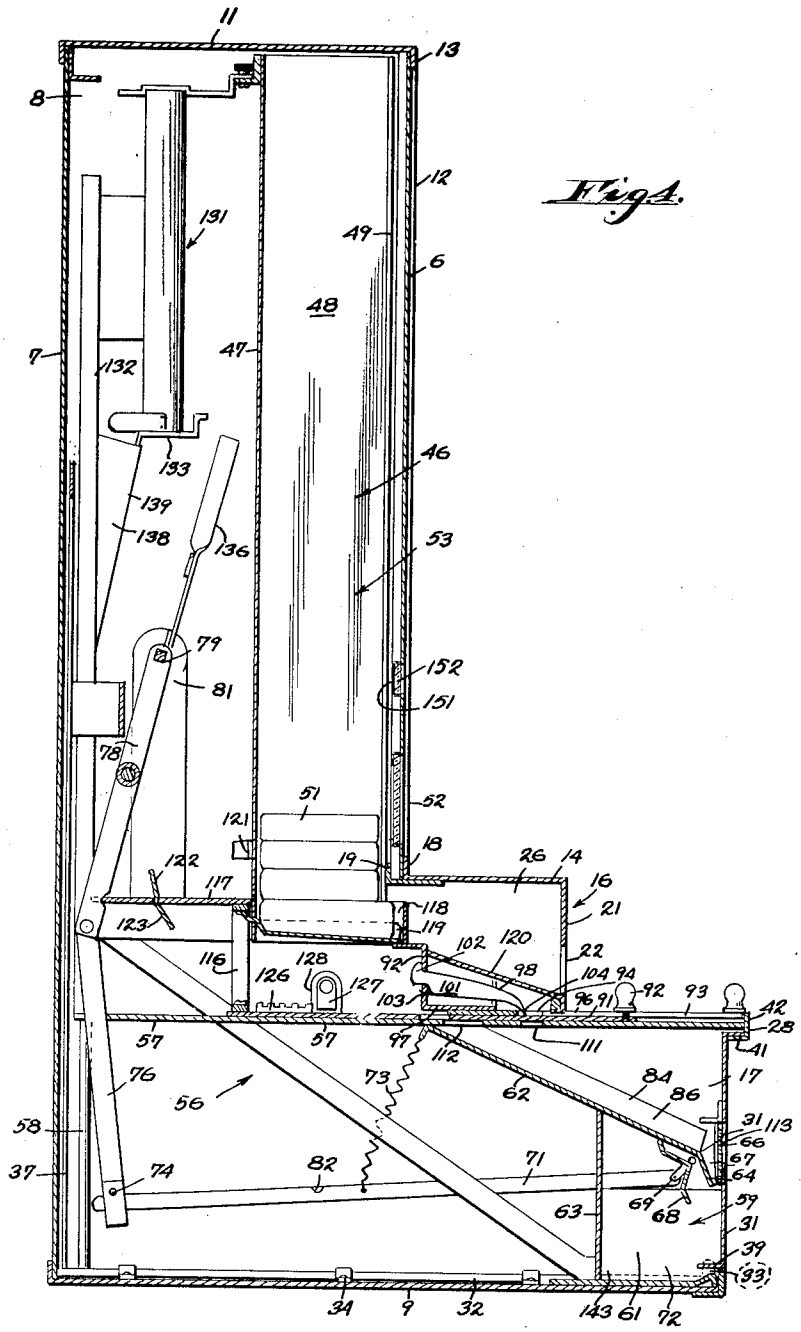


Fig 4.

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Patented Dec. 12, 1933 1,939,127

UNITED STATES PATENT OFFICE

1,939,127

VENDING MACHINE

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Application August 14, 1929. Serial No. 385,876

3 Claims. (Cl. 312—67)

This invention relates to vending machines.

An object of the invention is the provision of a vending machine capable of being employed to dispense a relatively wide range of different kinds of articles. The machine is particularly designed to vend package goods such as packages of cigarettes, or candy bars.

Another object is the provision of a vending machine which is adapted to dispense articles after coins of the proper denomination have been deposited in the machine, and which exposes those coins to view after the machine has been activated thereby. Furthermore, these coins are removed from position of visibility when the machine is subsequently operated; and the coins resulting in such subsequent operation of the machine, will in turn be exposed to view.

A further object of the invention is the provision of a vending machine as described, which is adapted to make change, i. e., is adapted to return to the operator of the machine, a coin representing the difference between the value of the coin or coins deposited by the operator, and the value of the article or articles released by the machine.

A further object is the provision of a vending machine adapted to make change as described, in which the amount of change released to the operator of the machine, may be varied in accordance with fluctuation of the price of the article vended.

A further object is the provision of a novel type of slug and imitation coin detecting means adapted to prevent operation of the machine unless coins of the proper denomination are employed.

A still further object is the provision of a vending machine having the characteristics above detailed, and which is adapted to be composed of a plurality of magazines for different kinds of articles such as a plurality of different brands of cigarettes, and in which each magazine has its own activating mechanism associated therewith, with the result that the purchaser may determine which particular kind of article will be released to him by the machine, depending upon which of the activating means the purchaser employs.

A still further object is the provision of a vending machine which includes in addition to the above enumerated characteristics, various other details of refinement and simplification resulting in a more efficient operation of the machine, prevention of operation of the machine without use of coins of the proper denomination, and operation of any one of the operating means after the magazine associated therewith, has become empty.

A further object is the provision of a vending machine as described, which is capable of carrying out all of the above enumerated objects, and yet which is composed of an exceptionally few parts, each of which is of a very simple nature and which is adapted to be manufactured at comparatively low cost, the completed machine being of extremely simple and rugged construction, thus going to the efficiency of the entire device as a satisfactorily operating machine unlikely to be damaged by being tampered with, and capable of delivering satisfactory service over an extended length of time.

The invention possesses other objects and advantageous features, some of which, with those enumerated, will be set forth in the following description of the invention's particular embodiment which is illustrated in the drawings accompanying and forming a part of the specification.

Referring to the drawings:

Figure 1 is a view partially in front elevation and partially in vertical section, of a vending machine incorporating the principles of the present invention;

Fig. 2 is a vertical, medial sectional view, the plane of section being indicated by the line 2—2 of Fig. 1, and the direction of view by the arrows;

Fig. 3 is a vertical sectional view, with the plane of section indicated by the line 3—3 of Fig. 1, and with the direction of view as indicated. This view shows the operating mechanism through which the plane of action is taken in extended position and ready for subsequent operation;

Fig. 4 is a view similar to Fig. 3, but showing the various portions of the machine in the positions assumed thereby when the operating means through which the plane of section is taken, has been activated to the completion of its inward stroke.

Specifically describing the embodiment of our invention which is at present deemed the most practical, the vending machine is enclosed within a housing comprising front, back, and opposed side walls 6, 7, and 8 respectively, and a bottom 9. A top 11 is removably attached to the upper ends of the front, back, and side walls, and is preferably provided with a suitable lock (not shown) whereby access to the interior of the housing by others than authorized persons, is prevented. The front wall 6, instead of being rigid with the side walls 8, is removable from the remainder of the housing, by sliding vertically upwards after the cover 11 has been removed, flanges 12 and 13 being provided upon the

forward edges of the sides 8 and top 11 respectively, to extend in front of the side edges of the front 6, for the purpose of preventing forward displacement thereof. The front 6 does not extend throughout the entire height of the housing, but rests upon the inner edge of the horizontal portion 14 of a shelf structure 16, which in turn is supported upon the upper edges of forward extensions 17 of the lower ends of the sides 8. The horizontal portion 14 is provided adjacent its after edge, with flanges 18 and 19 cooperating to define a slot within which the lower edge of the front 6 seats, as clearly shown upon Fig. 2; and the vertical front portion 21 of the shelf structure 16, is provided with a plurality of horizontally arranged apertures 22 through which slide the articles to be vended after the machine has been properly operated. The end edges of the horizontal portion 14 and vertical portion 21 of the shelf structure 16, are provided with flanges 23 and 24 respectively, extending outside projections 26 from the sides 8, preventing lateral displacement of the shelf structure 16. Also, the lower ends 27 (see Fig. 1) of the vertical flanges 24, are continued downwards beyond the lowermost portion of the vertical wall 22, so as to engage behind the after edge of a cover plate 28 to be described hereinafter. Therefore, the shelf structure 16 can be removed only by having its after edge raised; and this motion is of course, prevented as long as the lower edge of the front 6, is engaged between the flanges 18 and 19. A lower front wall 31 is removably attached to the front edges of the bottom 9 and forward extensions 17 of the sides 8, by means of a pair of rods 32 (see Figs. 1 and 3) extending from the front to the rear of the machine upon the bottom 9, and carrying at their forward ends, locking dogs 33. The rods 32 are rotatably mounted upon the bottom 9 by means of brackets 34, and are adapted to be given substantially a quarter turn through the expedient of a crank 36 at the after end of each rod 32, each of which is pivoted to the lower end of a link 37 extending upwards closely adjacent the back 7, so as to be accessible when the top 11 is removed. Preferably the links 37 are pivotally united adjacent their upper ends, so that pulling upwards upon one link 37, moves both locking dogs 33 into vertical position, wherein they extend through slots 38 in the flange 39, extending inwards from the bottom of the lower front wall 31, thus preventing forward displacement of the lower edge of the front wall 31 as long as the links 37 are pulled upwards. Furthermore, the upper edge of the lower front wall 31, is provided with a flange 41 extending forwards therefrom and receivable behind a depending flange 42 of the cover plate 28.

As a result of this construction of the housing which is composed of several separable parts, it will be readily understood that the several parts cooperate to hold each other in assembled relationship, and the various sections of the housing may be successively removed, but only after the cover 11 has been first unlocked and removed.

A plurality of magazines 46 are provided within the housing just in back of the front wall 6. These magazines are in the form of vertically extending recesses defined by a rear partition 47 and a plurality of spaced side partitions 48 extending forward therefrom. Also, each of the side partitions 48 is provided at its forward edge with a flange 49 whereby packages 51 or other articles are retained against forward displacement from their respective magazines 46 when the front wall 6 is removed, but permitting observation of the two or three lowermost packages 51 through suitable windows 52 provided in the front wall 6. The number of magazines 46 coincides with the number of apertures 22 in the shelf structure 16, and each magazine is in register with one of the apertures 22. The partitions 47 and 48, and flanges 49, are all rigidly united, and compose a separate unit indicated in its entirety at 53, which is removably received within the housing being supported therein in a manner to be disclosed hereinbelow.

The vending mechanism and coin releasable locking means therefore, are also united into a unitary structure which is indicated in its entirety at 56, and which may be removed bodily from the housing provided the cover 11, upper front wall 6, magazine structure 53, shelf structure 16, and lower front wall 31, have first been removed. The vending mechanism and coin-releasable locking means therefore, are carried by a horizontally arranged partition 57, the after edge of which is supported by suitable legs 58, and the forward edge by a coin receptacle structure 59, both of which means of support rest upon the bottom 9 of the housing. The coin receptacle structure 59 comprises side pieces 61 rigid with and extending downwards from the side edges of the partition 57, a back wall 62 sloping downwards from adjacent the central portion of the partition 57 toward the lower front wall 31, and a vertical rear wall 63 extending downwards from the sloping rear wall 62, as clearly shown upon Figs. 2, 3, and 4. The sloping rear wall 62 extends forwards to a line adjacent the lower front wall 31 of the housing; and the lower edge 64 of the sloping wall 62, is deflected downwards so that the extreme forward and lower edge is only slightly spaced from the lower front wall 31. The deflected portion 64 and a glass strip 66 cooperate to define a space 67 extending clear across the front of the housing, which will be termed the primary coin receptacle, the otherwise open bottom of which is adapted to be closed by a movable plate 68 which is pivoted to the under side of the sloping wall 62, and which carries a crank 69 extending downwards therefrom. A rod 71 is pivoted to the crank 69, so that by pulling the rod 71 toward the rear of the machine, the plate 68 will be retracted from that position in which it closes the bottom of the primary coin receptacle 67, permitting any coins which have accumulated therein, to drop into the secondary coin receptacle 72. The after end of the rod 71 is resiliently supported upon a coil spring 73 which urges the rod 71 upwards against a pin 74 carried by an extension 76 of one of a plurality of arms 78. These arms 78 are all rigidly mounted upon a rod 79 extending transversely of the machine and journalled within brackets 81 extending upwards from the partition 57; with the result that whenever any one of the arms 78 is moved toward the rear of the machine, the extension 76 is similarly swung. A notch 82 is formed in the upper edge of the rod 71, within which the pin 74 is adapted to seat; with the result that as the extension 76 moves toward the rear of the machine, the rod 71 is carried therewith to the limit of its movement upon the completion of which the after end of the rod 71, is forced downwards, stretching the spring 73 but permitting the pin 74 to become disen-

gaged from the notch 82, so that the arms 78 may continue their rearward movement without interference from the rod 71. Obviously, when the arms 78 return to initial position, the pins 74 will again become seated within the notch 82. In view of the fact that the spring 73 inclines downwards and toward the rear of the machine, its action is not only to support the after end of the rod 71, but it also pulls this rod forward; with the result that the plate 68 is normally and resiliently retained by the spring 73 in that position in which the bottom of the primary coin receptacle 67 is closed—this position being indicated upon Figs. 2 and 3. The sloping wall 62 is further provided with a plurality of spaced partitions 84 which cooperate to define chutes 86 upon the upper face of the sloping wall 62, leading into the primary coin receptacle 67, there being one such chute 86 associated with each of the magazines 46.

Inasmuch as there is a vending mechanism and coin-releasable locking means therefor, associated with each of the several magazines 46, it will suffice for the purpose of the present disclosure, to describe but one of them.

Above each of the chutes 86, a plate 91 is slidably mounted upon the upper face of the partition 57. The forward end of the plate 91, extends below the cover plate 28. Each plate 91 is provided with a knob 92 extending through a slot 93 in the cover plate 28, whereby the plate 91 may be manually slid inwards toward the rear of the machine and outwards toward the front. The plate 91 is provided with a hole 94 accessible from the exterior of the machine through a suitable enlargement 96 of the inner end of slot 93, when the plate 91 is pulled to its forward extreme of movement. The hole 94 is shaped to receive preferably a plurality of coins of predetermined denomination, say for example, the hole 94 of each plate is adapted to receive a five-cent piece and a ten-cent piece. Furthermore, each hole 94 is shaped complementarily to these two coins, precluding the reception within the hole, of any coins larger than those for the reception of which the machine was designed.

Secured to the partition 57 but spaced thereabove sufficiently to slidably accommodate the several plates 91, is a stationary, substantially U-shaped structure 97 having a forward flange 98 and an after flange 99 extending upwards therefrom. Associated with each of the sliding plates 91 and pivotally mounted upon the after flange 99, is a pair of detents 101. These detents may be attached to the flange 99 in any convenient manner, but we prefer to effect this attachment by the simple expedient of extending the after end of each detent 101, through a suitable slot in the flange 99, and providing an upward extension 102 upon the after end of each detent 101 engageable with the back of the flange 99, to prevent forward displacement of the detent without elevating the forward end of the detent sufficiently to disengage the projection 102. Also, a shoulder 103 is formed on each detent, engageable with the forward face of the flange 99, preventing rearward displacement of the detent. The forward end of each detent 101, extends through a notch in the forward flange 98, permitting the pointed forward end 104 of the detent, to rest upon the upper face of the sliding plate 91. If desired, springs 106 may be employed to resiliently press the detents 104 downwards upon their associated plates 91.

The number of detents 101 associated with each plate 91, coincides with the number of coins the hole 94 of each plate is adapted to receive. Consequently, in the present modification, there are two detents 101 for each plate 91. Furthermore, these detents 101 are in register with those portions of the hole 94 within which the different coins are adapted to seat; with the result that if either of the coins necessary for the proper manipulation of the plate 91, is not properly inserted into the hole 94, and the attempt then made to slide the plate 91 inwards, the detent 101 which is in register with that portion of the hole not occupied by a coin, will be pressed into the hole, and prevent continued rearward movement of the plate. Furthermore, inasmuch as the detents 101 are provided with the point 104, this point will enter any hole in a disc such as a slug, and prevent continued movement of the plate 91. It is also obvious that should a coin be employed which is smaller than that which will fill the associated portion of the hole 94, the point 104 of the associated detent 101, will enter the space between the edge of the coin and the margin of the hole. Moreover, coins of the proper thickness must be employed, inasmuch as the point 104 will engage the leading edge of the coin if the coin is thicker than the plate, or it will engage the trailing margin of the hole if the coin is thinner than the plate. We have compensated for the differentiation in thickness between a five-cent piece and a ten-cent piece, by attaching a thin strip 107 to the after end of each plate 91, in register with that portion of the associated hole 94 which is to receive the five-cent piece, these strips 107 coinciding in thickness to the difference in thickness between a five-cent piece and a ten-cent piece. These strips 107 will prevent engagement of the associated detents 101 with the leading edge of the five-cent piece, by holding the point 104 elevated so as to permit the coin to pass thereunder as the plate 91 is slid toward the rear of the machine.

A hole 111 is formed in the partition 57 immediately under the point 104 of each detent 101, the holes 111 being slightly smaller than the coin intended to pass under that detent. This results in permitting an under-sized coin or slug to drop through the hole 111 into the associated chute 86 before the trailing margin of the hole 94 has passed the point 104 of the detent, whereupon the point 104 will enter the hole 94 and prevent continued inward movement of the plate 91, even though this under-sized coin or slug has dropped into the chute and slid into the primary coin receptacle 67. Another hole 112 is formed in the partition 57 toward the rear of the machine from each of the holes 111. The hole 112 is larger than the associated portion of the hole 94; with the result that when the plate 91 is slid to its after extreme of movement, its hole 94 will come into register with the hole 112 and permit any coins retained therein, to drop through the hole 112 and slide down the associated chute into the primary coin receptacle 67. Here these coins are rendered visible from the exterior of the machine, through a window 113 provided in the lower front wall 31, until subsequent operation of the machine results in withdrawing the plate 68 to permit the coins to drop into the secondary coin receptacle 72.

A bracket 116 extends rigidly upward from the after end of each plate 91. The bracket 116 supports a carriage 117 which is so proportioned and arranged that when the plate 91 is pulled to its forward extreme of movement, the lower end of the associated magazine 46 is closed by the car-

riage; but when the plate 91 is moved to its after extreme of movement, a recess 118 comes into register with the lower end of the associated magazine 46. The recess 118 coincides both as to depth and lateral dimensions to the size of the commodity to be dispensed upon each operation of the vending means. In the present embodiment, the packages 51 to be dispensed, are packages of cigarettes, and therefore the recess 118 coincides substantially to the size of the conventional package of this nature.

A plate 119 is pivotally supported at its after edge, upon each carriage 117 at the after edge of the recess 118. The plate 119 slidably engages the upper edge of the flange 99 which is so designed that when the carriage is at its after extreme of movement, the plate 119 is pressed upwards to define the bottom of the recess 118, and limit packages 51 which can enter therein, to a predetermined number in the present embodiment, a single package being received by the recess 118 upon each operation of the vending means. When the carriage 117 is pulled to its forward extreme of movement, the plate 119 hinges downwards, coming to rest upon an obliquely arranged plate 120 sloping upwards and toward the rear of the machine, from the lower edge of the apertures 22 which are formed in the vertical wall 21 of the shelf assembly 16. This will permit the package 51 which has been received within the recess 118, to slide off the plate 119 and through the aperture 22 and out of the machine to come to rest upon the upper face of the cover plate 28.

The carriages 117 are all arranged in horizontal alignment; with the result that the partition structure 53 may rest upon the upper face of all of the carriages 117, to gain its proper support. However, displacement of the partition structure 53 toward the rear of the machine when one or more of the carriages 117 so moves, is prevented by a lug 121 made fast to each of the sides 8, in position to bear against the back of the rear partition 47 adjacent the bottom thereof.

Each carriage 117 is provided with a detent 122 pivotally mounted adjacent the after end thereof and adapted to come into contact with the rear partition 47 of the magazine unit 53 when the plate 91 and carriage 118 are slid toward the rear of the machine, unless the detent 122 is pressed out of engaging position (as indicated upon Fig. 2) by the weight of packages 51 resting thereupon, it being understood that that portion 123 of the detent 122, which extends through the carriage 117 to the under side thereof, is heavier than the upper portion, so that the detent is urged to engaging position by the force of gravity.

In order to insure completion of the movement of the plate 91 and carriage 117 in either direction before reversal thereof, we have provided a ratchet 126 upon the after end of each plate 91, and a swinging pawl 127 associated with each ratchet 126. Each pawl 127 is pivotally supported upon a lug 128 extending upward from the partition 57. Each ratchet 126 is of such length that its associated pawl 127 becomes completely disengaged therefrom when the plate 91 has been moved to either its forward or after extreme of movement, but is at such an elevation in respect to the pivotal mounting of the pawl 127, that should reversal of movement be attempted before the plate has been moved to its extreme forward or after position, the pawl 127 will engage within one of the notches of the ratchet and effectively prevent such reversal.

It is obvious therefore, that the ratchet and pawl 126 and 127 respectively, are double-acting, and prevent movement of the plate 91 in either direction, before completion of its movement in the opposite direction.

Means are also provided for returning to the operator of the machine, a predetermined number of coins, the value of which represents the difference between the value of the package 51 and the total value of the coins inserted into the hole 94. A plurality of coin magazines 131 are supported upon a preferably centrally located bracket 132 extending upwards from the partition 57. In the present machine there are four of these magazines 131, inasmuch as the greatest amount of change which would be returned to the purchaser under any fluctuation of the value of a package 51 between ten and fifteen cents, would be four cents, it being understood that each of the magazines 131, is in the nature of a tube of inside diameter substantially corresponding to the diameter of a one-cent piece. The lower ends of all the magazines 131, are closed by a common plate 133; and a slot 134 is formed in the after side of each magazine 131, each slot extending throughout slightly more than one-half the circumference of the associated tube. A plurality of fingers 136 are rigid with and extend upwards from the rod 79, to position their upper ends within slots 137 in the plate 133. Each of the arms 78 is positioned directly behind one of the carriages 117, so that when any of the carriages 117 is moved to the rear of the machine, all the arms 78 will be pushed toward the rear, effecting rotary movement of the rod 79, and move the fingers 136 toward the front of the machine. The extent of this movement is such that upon completion thereof, the fingers 136 have moved completely out of register with the magazines 131, permitting any coins therein, to drop against the plate 133. Hence, upon the return stroke of the fingers 136, the lowermost coin in each of the magazines 131 will be engaged by the associated finger 136 and pushed through the slot 134 to fall into a coin chute 138. This chute 138 is provided with a flaring mouth 139, so that coins from all the magazines 131, fall into the single chute 138 and are carried thereby into a pocket 141 disposed preferably centrally of the lower front wall 31, and accessible through an aperture 142 therein, this pocket 141 being separated from the secondary coin receptacle by suitable partitions 143.

Whereas the packages 51 within each of the several magazines 46, are visible through the windows 52, making it possible for the prospective purchaser to ascertain which of the plates 91 to select in order to secure the desired variety of commodity, we have deemed it advisable to also provide labels 151 upon the upper front wall 6. Each label 151, which may be arranged behind glass 152 if so desired, carries wording identifying the commodity within the associated magazine 46.

Inasmuch as the present embodiment of the invention is designed to dispense packages of cigarettes, we have added a smaller magazine 156 designed to receive a plurality of boxes of matches of conventional size and shape. Associated with this magazine 156, is a vending mechanism and a coin-releasable locking means therefor, preferably identical with that associated with each of the magazines 46, with the exception that they are proportionally smaller; and the sliding plate for activating the vending means, is provided with a coin-receiving hole shaped to receive a single one-cent piece, inasmuch as this is the

price ordinarily charged for a box of matches. Hence, a single detent is employed. Furthermore, there is no arm 78 in register with the carriage associated with the magazine 156; with the result that when this carriage moves toward the rear of the machine, the rod 79 is not rocked, and there is no discharge of coins from the coin receptacles 131.

Operation

After a purchaser has decided which of the operating means is to be activated in order to enable him to secure the selected brand of cigarettes or the selected kind of article, if the machine is loaded with another commodity, he may secure a package 51 thereof, by placing the proper coins within the coin-receiving hole 94 of the plate 91, in alignment with the window 52 and label 151, whereby the selected commodity has been identified. After the coins have been so positioned, the associated knob 92 should be forced toward the rear of the machine. This will result in moving the plate 91 and carriage 117 associated therewith, also toward the rear of the machine, because of the fact that the coins within the hole 94, will prevent engagement of the points 104 of the associated detents 101, from entering the hole 94. If improper coins are employed, operation of the machine is prevented and undersized coins will be taken into the machine without delivering any of the commodity to be vended, as described hereinabove. Upon completion of the stroke of the carriage 117 toward the rear of the machine, the entire number of packages 51 within the associated magazine 46, will drop a distance coinciding with the thickness of one package, positioning the lowermost package 51 within the recess 118. However, the number of packages to enter the recess 118, is limited by the plate 119 which is held in horizontal position or substantially so, by its engagement with the flange 99.

When the plate 91 reaches its after extreme of movement, the coins will fall through the hole 112 and slide down the associated chute 86 and lodge within the primary coin receptacle 67, in which position they will be visible through the window 113. Removal of the coins from the outside of the machine, is prevented however, by the presence of the glass strip 66.

The knob 92 should then be returned to initial position, which will result in moving the carriage 117 toward the front of the machine. As this movement continues, the plate 119 will hinge downwards until its forward edge is sufficiently below the front edge of the carriage, to permit the package 51 to slide from the recess 118 through the opening 22, and out upon the cover plate 28 where it may be picked up by the operator.

Furthermore, as the return stroke is completed, the fingers 136 will push a one-cent piece from each of the coin receptacles 131 which have previously been loaded with such coins, and the coins thus removed from their receptacles, will fall through the chute 138 into the pocket 141, whence they may be removed by the operator, through the opening 142. It is obvious that if the price to be charged for one of the packages 51, is fourteen cents, only one of the coin receptacles 131 will be loaded with one-cent pieces; whereas if the price to be charged is thirteen cents, two of the receptacles will be loaded, and so on.

Upon subsequent operation of the machine, the same course of procedure is followed. However, as any one of the plates 91 moves towards the rear of the machine, it encounters the associated arm 93, causing the extension 76 to be moved toward the rear of the machine to pull the rod 71 rearwards. This will displace the plate 68 and permit any coins which have accumulated in the primary receptacle 67, to fall into the secondary receptacle 72. However, the pin 74 will become disengaged from the notch 82 before the plate 91 reaches its after extreme of movement; with the result that the spring 73 will return the rod 71 and plate 68 to normal position before subsequent coins arrive within the primary receptacle 67.

The partitions 84 confine the coins sliding over the surface of the sloping wall 62, so that they appear in the window 113 immediately under the knob 92 which has been activated.

Servicing of the vending machine, i.e., refilling the magazines 131 and 46 with coins, and packages to be vended, respectively, and the removal of accumulated coins from the coin receptacle 72, may be effected by removing the cover 11, which, as stated hereinabove, is provided with the conventional lock, preventing its removal by other than authorized persons. After the top 11 has been removed, the upper ends of the magazines 131 and 46, are accessible, and a fresh supply of coins and packages may be dropped thereinto. In order to remove accumulated coins, the links 37 should be pulled upwards; and this may readily be effected inasmuch as the upper ends of the links, are disposed closely adjacent the top of the housing, so as to be accessible when the cover 11 is removed. By pulling the links 37 upwards, the dogs 32 may be drawn from the slots 33 in the bottom flange of the lower front wall 31, permitting this lower front wall to be removed by first pulling the bottom thereof forwards, and then unhooking the flange 41 from the depending flange 42 of the cover plate 28, thus rendering the interior of the receptacle 72 accessible.

It is to be understood that the details of the invention as herein disclosed, are subject to alteration within the spirit or scope of the appended claims.

We claim:

1. In a vending machine, a housing, a magazine therein receptive of a plurality of articles to be vended, a movable carriage normally closing the lower end of said magazine and having a recess therein adapted to receive a predetermined number of said articles, means for conducting articles from said recess to a position accessible from the exterior of the housing, means for moving said carriage to bring its recess optionally into or out of register with said magazine, means holding said conductive means inoperative while the recess is in register with the magazine, and a detent carried by said carriage and urged into position to lock the carriage with its recess out of register with the magazine, said detent being held in inoperative position by the lowermost article within the magazine resting thereon.

2. In a vending machine, a magazine having a back wall, a guide structure, a carriage having a flat plate, means to move the plate of the carriage to a position in the magazine to support a stack of articles therein, the said flat plate having a pivotally mounted detent, said detent being positioned underneath the stack and retained with its operative portion in a horizontal

position in contact with the plate, said plate being slidable rearwardly outside of the back wall of the magazine when the detent is in contact with the upper side of the plate but the said detent engaging the back wall of the magazine when there are no articles in the magazine.

3. In a vending machine having a magazine with a back wall, a carriage having a flat plate, a horizontal guide for guiding the movement of the plate, said plate being shiftable to a position in the magazine to support a stack of articles or to a position rearwardly of the back wall of the magazine, a detent pivoted in the plate and having a portion above the plate, said portion being adapted to extend vertically above the plate or to lie in contact with the plate when so held by the stack of articles on the plate, the detent being guided by the stack of articles underneath the back wall when the plate is thrust rearwardly of the magazine, means to tilt the detent when there are no articles in the stack to engage the inside of the back wall of the magazine and to prevent the rearward movement of the said plate.

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