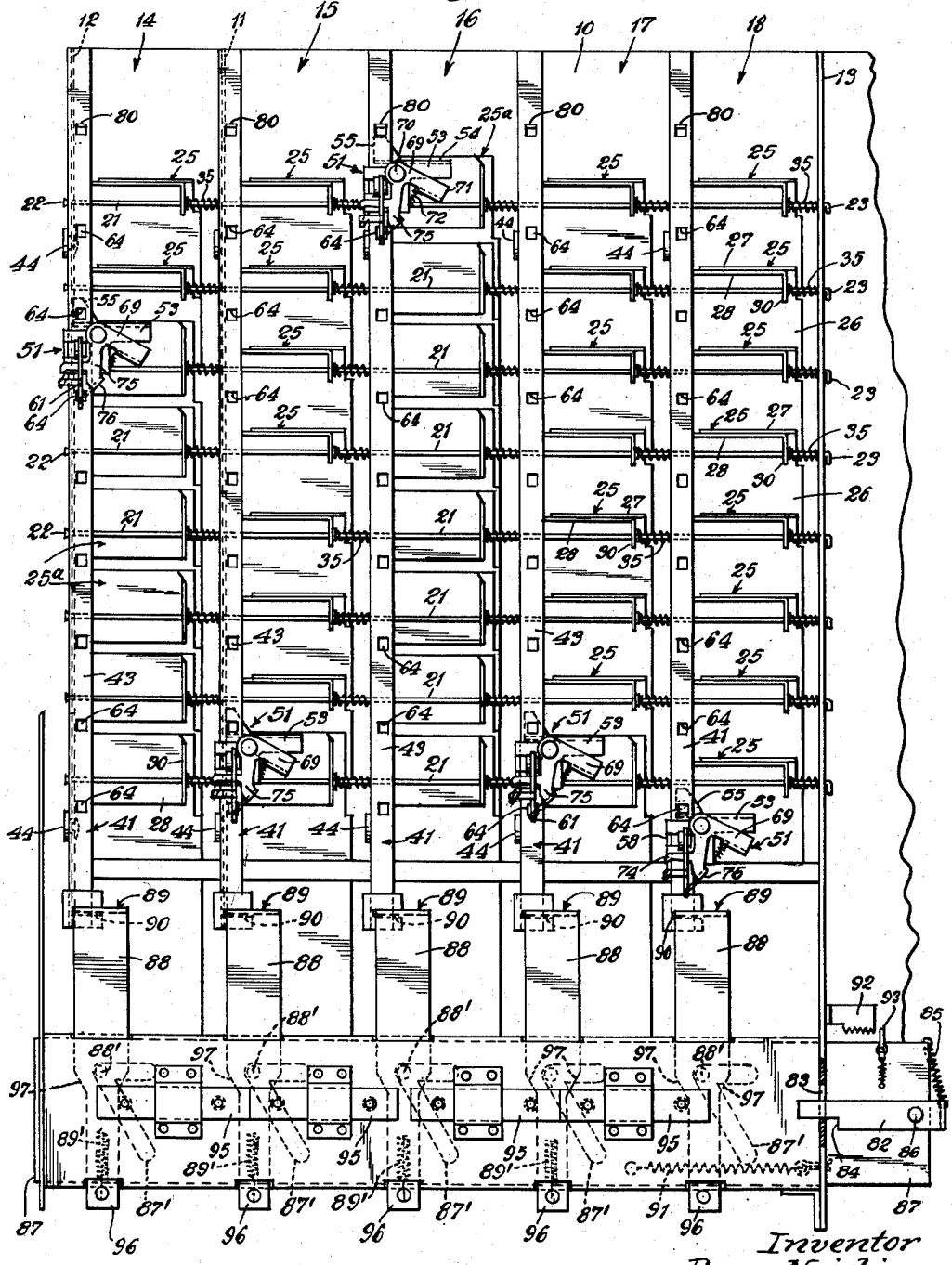
Dec. 30, 1952 D. NEIDIG 2,623,804

DISPENSING MACHINE

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Fig. 1



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DISPENSING MACHINE

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Fig. 2

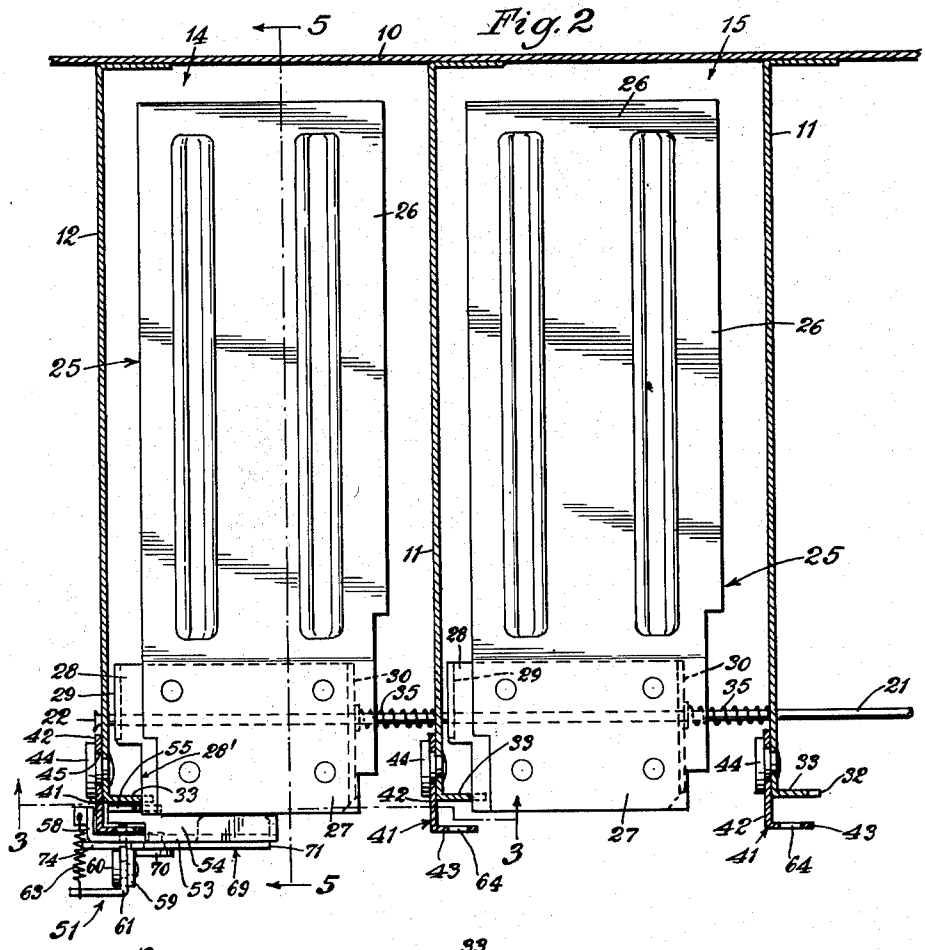


Fig. 3

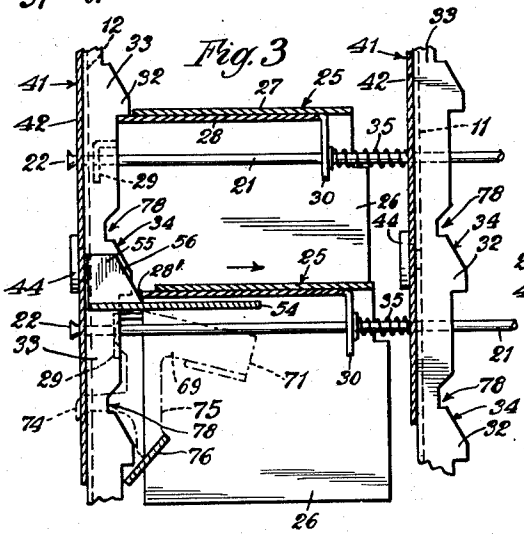
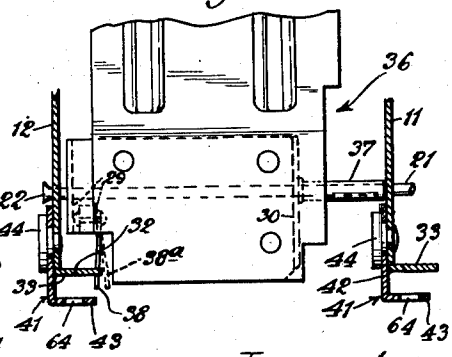


Fig. 4



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DISPENSING MACHINE

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Fig. 5

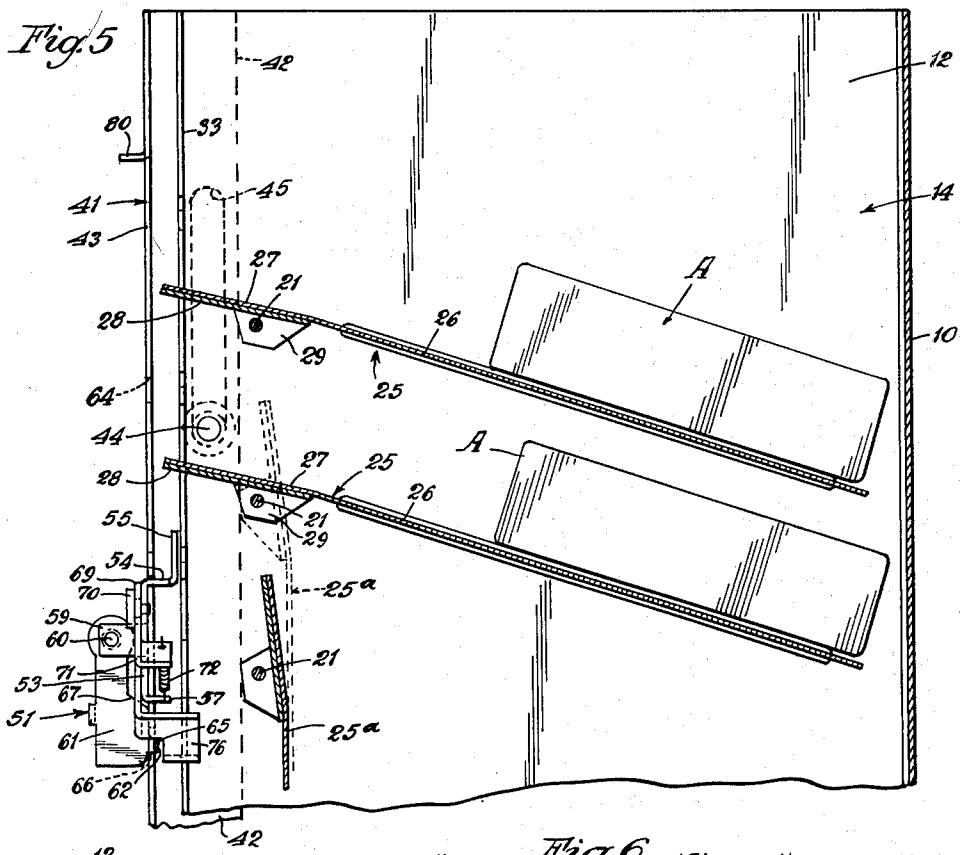
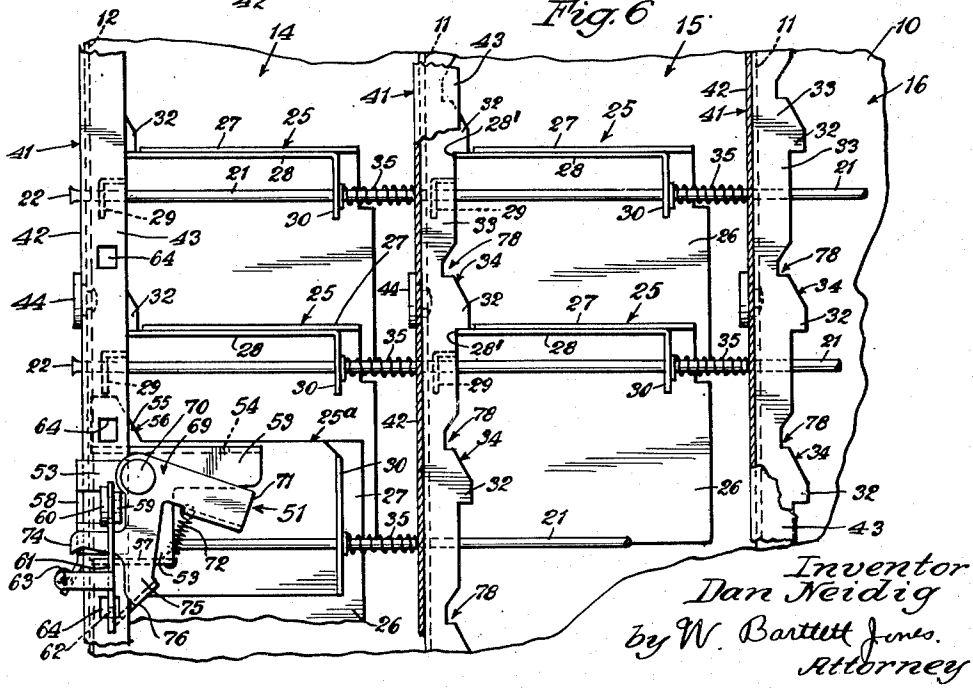


Fig. 6



Patented Dec. 30, 1952 2,623,804

UNITED STATES PATENT OFFICE

2,623,804

DISPENSING MACHINE

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Application May 2, 1950, Serial No. 159,511

6 Claims. (Cl. 312—94)

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The present invention relates to dispensing machines, and in particular, to those suitable for operation after insertion of one or more coins as the purchase price for an article to be dispensed. In particular, the present invention relates to that part of such a machine which may be called the holding magazine or the dispensing structure and mechanism thereof.

It is conventional to provide dispensing machines with one or more vertical magazines, each having a vertical plurality of compartments. The compartments are arranged to release and discharge the contents, from one compartment at a time, the contents being hereinafter referred to as a single article of merchandise, such as a package of cigarettes, or a candy bar. The compartments commonly discharge from one end of a vertical magazine to the other in succession, and when the vertical magazine is empty further manipulation to effect a discharging operation is mechanically prevented.

When one or more magazines are either partly or completely empty, an overseer or service man having suitable access to the machine, replenishes the empty compartments with new stock, and resets each magazine for dispensing operation. Where such dispensing machines are to be serviced, it is important that the service man perform his task with expedition and hence with a minimum of mechanical manipulations, all to reduce the cost of servicing. Many machines when placed against a wall must be moved away from the wall because their structure requires repair from the rear panel. This repair usually involves adjustment or replacement of parts. The present invention provides a machine which can be readily and quickly serviced from the front.

The mechanical structure of dispensing machines requires numerous parts, and multiple duplication in one magazine vertically, and in any plurality of magazines horizontally, Conventionally, each compartment has a certain structure independent of other compartments. Where there are many compartments in one vertical magazine, and numerous such magazines in a horizontal bank, these mechanical parts add up to a great number and account for much of the cost of original manufacture and assembly, and they create additional expense to service and repair. The present invention simplifies the structure to overcome many of these disadvantages by minimizing the number of individual parts and by providing some functioning portions integral with the main body, and other parts in common to several compartments.

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It is the general object of the invention to provide a dispensing machine of simplified structure for numerous advantages in manufacturing, operating and servicing.

It is a particular object of the invention to provide a dispensing machine with operating parts and compartment openings at the front of the machine for convenience in repair and servicing.

It is also a particular object of the invention to provide in a vertical magazine a dumping article-support for an article to be dispensed, which support is operated by movement of at least a part of it from a position in which it is to be held by the body portion to a position released from such holding.

It is also a particular object of the invention to provide dumping article-supports which both pivot and slide on a horizontal axis.

It is a further object of the invention to provide a horizontal plurality of like vertical magazines all with a common horizontal axle structure for each horizontal line of compartments.

Various other and ancillary objects and advantages of the invention will become apparent from the following description and explanation of the invention in connection with the preferred and illustrative embodiment thereof shown in the accompanying drawings, in which:

Fig. 1 represents a front view of the interior of a small-sized dispensing machine having five vertical magazines each with compartments for eight articles.

Fig. 2 is an enlarged view taken on a horizontal cross-section showing two magazines and an article-support of each in plan view in their article-holding position, and showing associated walls and vertical members in cross-section.

Fig. 3 is a vertical cross-section of an end magazine taken on the line 3—3 of Fig. 2, with a release device illustrated as to its alinement by dotted lines, the same being actually located forward of the plane of the drawing.

Fig. 4 represents a modified construction of an article-support, the view being substantially the same as in Fig. 2.

Fig. 5 is a fragmentary vertical cross-section of a magazine taken substantially on the plane of line 5—5 of Fig. 2, illustrating the manner in which articles are held on their supports, and the position of the supports after discharge of the article, and also some detail of the release device in a side view.

Fig. 6 is a front view of the two magazines illustrated in the cross-sectional plan view of Fig.

2, showing in particular the structure of the traveling release device and its relation to other parts.

It is to be understood that the invention is not limited to or by the forms shown in the drawings, which are largely for the purpose of illustration by reference to the presently preferred embodiments.

Fig. 1 shows a part of a front portion of a dispensing machine from which face it is refilled with merchandise and at which face are made available practically all of the moving parts. As shown, there is a plurality of vertical magazines, each duplicating the other in essential parts. As many magazines as may be desired are horizontally alined. Each vertical magazine may be as long as desired, merely by repeating the number of units or compartments therein.

The machine shown is limited in size in the drawings to four vertical magazines, and the vertical magazines are limited to a small number of compartments, only for the purpose of facilitating the illustration and explanation. The body portion of the machine includes a back wall 10 to which are secured four spaced vertical partitions 11 between parallel end walls 12 and 13, all arranged to form four vertical magazine sections of equal width, designated 14, 15, 16, 17 and 18. Briefly described, each vertical magazine has a number of article-supports vertically alined, one for each compartment. Description of any one compartment describes them all.

Each compartment has an article-support pivoting on a horizontal axis in order to dump an article stationed thereon upon release of the support from its article-holding position. The support has at least a part of itself, or even the entire support, movable with respect to the body portion, which latter is provided appropriately with a detent structure to hold the support against dumping. Means is provided to move said part, or otherwise the entire support itself, away from the said detent structure thereby to permit the pivotal movement on the horizontal axis, with resulting dumping of the article supported. The article suport is normally biased to move into the position it assumes after dispensing, and the detent normally holds the support from biased movement into said position. Thereby, after having dispensed an article, each supoprt is normally located out of the path which is traveled by the next article to be dispensed from the magazine in a machine having release of articles progressing upwardly in a magazine.

The means to release each support for dispensing movement may vary widely, and in its structure and its operation, it is related to the type of dispensing control for which the machine is designed. Commonly such machines are designed for insertion of one or more coins to condition the machine for a single release, effected electrically or mechanically by operating some selective control, where there must be a choice when numerous vertical magazines are involved. As illustrated, the releasing means is a device which in the present machine climbs upwardly step by step along the length of each magazine, thereby in its motion to move the article support from its holding detent. For picturesqueness in description, this particular form of release is herein called a "monkey."

When two magazines side by side are identical, it is preferred that they be of equal height and horizontally alined for co-axial mountings for the article supports. This allows the particular advantage of providing a common axle, in the form of a rod or thin shaft common to all the identical compartments which are in horizontal alinement. Thus, in a large machine with many identical magazines, a plurality of vertically spaced horizontal axles provides the pivotal axes for all of the swinging supports. Such a structure greatly reduces the number of parts, the cost of original production, and the cost of repair.

Various forms of monkeys are used in machines of the type illustrated. A common form is a guided monkey movable in one direction from end to end of a vertical magazine by a one-way sliding relation between the monkey and the machine body, and by a second one-way sliding relation between the monkey and a vertically reciprocable operating bar. Thus, movement of the operating bar in a half cycle of reciprocation, properly limited, moves the monkey a distance equal to the height of a compartment, and movement of the operating bar in the other half of its cycle is permitted while the monkey is held stationary by the one-way connection with the machine body or casing. By this means, step-by-step movement of the monkey is effected by repeated reciprocations of the operating bar, and each movement of the monkey effects a dispensing release of a loaded support.

In the preferred and illustrative embodiment shown in the drawing, there is a vertical series of axle-rods 21 across the front face of the machine, passing through all the partition walls 11 and the end walls 12 and 13, and fixed by heads 22 at wall 12 and hooks 23 at wall 13. The axles 21 are equally spaced when there are identically sized compartments throughout the machine. At each compartment on its axle portion 21 there is pivoted an article-support in the form of a platform 25 (Fig. 5) having a flat article-holding main portion 26 inclined downwardly in the article-holding position toward rear wall 10, thereby forming a shallow pocket for article A indicated thereon. The support is inclined to prevent forward sliding of article A during mischievous shaking of the machine, as sometimes occurs in the hope of dislodging an article for free delivery. A front portion 27 of the support 25 lies above its axle 21, on which it bears through a channel-form piece secured beneath it, which piece has flat face 28 in contact with support section 27, and also has bearing ears 29 and 30. Said flat face has a functioning edge designated 28' upon which acts a cam carried by the monkey to move the support horizontally as will be described. The support proper may be of light weight metal, and the channel part 28 is specially provided to permit the bearing ears and the edge 28' to be of harder metal.

To hold the support 25 in the position shown in Fig. 5, the forward portion 27 is held in the position shown by the face 28 resting under a fixed detent. The normal weight of the rear supporting section 26 acts by gravity to bias the support 25 to move into the position shown in dotted lines designated 25a at the lower part of Fig. 5. Each compartment has such a detent, and there is, therefore, a vertical plurality of such detents, each indicated by numeral 32 (Fig. 6) under which lie the forward support sections 27. The detents 32 are formed by cutting into a right angular flange 33 integral with the adjacent partition wall on the left side of the magazine as shown in Figs. 1, 2 and 6, being either a wall 11 or end wall 12. In forming the detents 32 a cam edge or face 34 is also provided above the holding edge of the detent.

To release the support, the part thereof which is indicated under and held by detent 32 is movable with respect to the body portion of the machine, this being locally the adjacent partition wall, or its flange 33, or a detent 32 thereof, in order to escape the holding action of the detent.

One way to provide for such releasing movement is to slide the whole support 25 on its axle 21. As illustrated, the support 25 is narrower than the magazine width to permit such sliding to the point of release. Spring means in the form of a coiled compression spring 35 about the axle 21 presses between the bearing ear 30 of the support and the adjacent right hand magazine wall 11 or 13.

Another way to effect a releasing movement from the detent is shown in Fig. 4 wherein a support 36 is fixed on its pivotal axis 21 against such sliding movement by a sleeve 37. The part which is movable with respect to the machine body is a resilient horizontally movable leaf spring 38 mounted on the bearing ear 29, and movable by pressure into the dotted line position 38a to effect release from detent 32. It is noted that the detents 32 have a functioning cam edge or face 34 inclined upwardly to the left in Figs. 3 and 6. This cam edge also functions on the edge 28' of the support to move the support to the right when resetting the machine by moving the support from its dropped position 25a back to its article-holding position.

The releasing means effective for disengaging each support or part thereof from its detent 32 may be of any desired character. The preferred releasing means or monkey is now described. There is a vertical reciprocable operating bar for each vertical magazine, upwardly of which the monkey climbs. The bar illustrated is a right angle bar 41 having a flange 42 mounted to slide facewise along the forward portion of one of the walls 11 or 12, and another flange 43 spaced forward of and parallel to the wall flange 33 which has the detents 34. The flange 42 of the operating bar 41 is slidably mounted on the adjacent wall by one or more headed pins 44 fixed in a wall 11 or 12 or 13, and by a corresponding elongated slot 45 about such pin, of ample length to permit the desired extent of reciprocation, best seen in Fig. 4. The monkey is slidably mounted on bar 41 and has a one-way sliding engagement therewith. The monkey also has a one-way sliding engagement with the body portion of the machine, particularly with a flange 33 having the detents 32. These sliding engagements are effected preferably by two pawl and ratchet means, with the two ratchet elements on the bar 41 and on the flange 33, and with the two pawls on the monkey. The pawls are preferably arranged for independent operation in the act of dispensing but related for simultaneous disengaging movements of the pawls from their ratchets by a single control to facilitate lowering the monkey and resetting the machine on reloading.

The detailed structure of the monkey forms no part of the present invention, but its essential parts are described in order to explain the dispensing action of the machine.

The monkey is designated generally by the numeral 51, Fig. 6. As shown, it is carried solely by a vertical reciprocating bar 41 on which it is vertically slidable in both directions, as above mentioned. In one direction it is freely movable on the bar 41 upwardly relative to the bar. The upward movement of the monkey along the magazine is permitted by operation of the reciprocating bar 41, with the monkey at this time stationary with respect to the operating bar 41.

Common means is provided on the monkey to disengage both pawls from their normal relations to their ratchets, thereby to permit free sliding of the monkey relative to the two ratchets.

The monkey is of very simple structure, in the present instance consisting of a face or body portion with two pawls pivoted to the face portion, and a spring for each pawl. The face portion of the monkey is designated by the numeral 53. It is a metal plate deformed to provide an angular slot into which fits the angular recirprocating bar 41 with a resulting sliding mounting of the monkey 51 on the bar 41. The face portion has deformed parts which bear slidingly over both faces of the flanges 42 and 43 of the reciprocating bar 41 as best seen in Fig. 2.

Looking at the monkey as illustrated in Fig. 6, one sees a vertical face portion of which each uncovered visible area is designated by numeral 53. At the top of the face 53 there is a rearward integral flange 54 with a portion of it cut away to receive the edge of front flange 43 of the bar 41, and with an end portion of the flange 54 positioned to engage on the inner face of flange 42 of the bar 41. Said flange 54 is also extended upwardly at its rear to form a vertical lug 55 as a dog to make suitable contact for releasing the article-supports one at a time. The dog 55 has a cam face 56 which in riding upwardly engages each edge 28' of an article-support 25 (see Fig. 2), thereby to urge the support 25 laterally on its axle against the spring 35, thereby to release an article.

Monkey face 53 is extended on the lower side by a rearward flange 57 also recessed to receive the edge of flange 43 slidingly and bear against the rear face of the flange 42 of bar 41. The left end of the monkey face 53 has a rearward vertical flange 58 positioned to lie slidingly against the outer face of reciprocating flange 42. The three flanges 54, 57 and 58, together with the monkey face 53 form an L-shaped slot through the monkey 51 of suitable size to receive the right angular reciprocating bar 41 for the desired sliding relationship.

The pawl and ratchet structures may be variously arranged between the pertinent parts. The following is a description of the arrangement shown in the drawings. A lug 59 is struck forwardly at right angles from the monkey face 53 as a support for a horizontal pivot-rivet 60 for a depending pawl 61 having an engaging tooth 62 positioned to ride on the front face of the reciprocating flange 43. The pawl 61 is biased towards said flange by spring 63. The flange 43 constitutes the ratchet for the pawl 61 by the provision of a vertical series of holes 64 spaced apart the same distance as the axles 21, which distance defines the vertical height of each compartment. The tooth 62 has a cam edge or face 65 permitting vertical movement of the monkey upwardly of the bar 41 by the edge of a hole 64 camming the pawl 61 away from its ratchet. The tooth 62 also has an engaging edge or face 66 which prevents the monkey moving downwardly of the bar 41 when the tooth 62 is in a ratchet hole 64. Additionally, the pawl 61 has a cam face 67 on its rear vertical edge, such that a downwardly moving cam (later described) will cam the pawl forward and move tooth 62 into non-engaging relationship with its ratchet holes 64.

Monkey face 53 has a manual crank member 69 pivoted to it by pin 70. The crank member as a pawl structure functions automatically in the dispensing action of the machine, but it is additionally constructed and arranged to facilitate manual control for disengaging both pawls from their ratchets. The crank member 69 has a manual control arm 71 normally biased by spring 72 into an acute angular relationship with the top flange 54 of the monkey, as shown generally in full lines in Fig. 6. Merely squeezing the control arm 71 and the flange 54 together effects the desired disengaging operations, directly with respect to the crank member as a part of one pawl, and indirectly by reason of a finger 74 carried by the other arm 75 of the crank member. It is said finger 74 which moves vertically downwardly upon the inner cam face 67 of the pawl 61, as mentioned above to disengage both pawls at once.

The downwardly directed arm 75 of the manual crank member 69 functions as a pawl by reason of an integral wide tooth indicated at 76, the same being biased to move to the left in Figs. 3 and 6 by action of tension spring 72. Tooth 76 is a piece of sheet metal bent backward at right angles from the portion thereof which provides the arm 75. The tooth 76 lies approximately at a 45° angle to the vertical so that as the monkey moves upwardly the tooth is cammed to move against the force of spring 72 by contact with the edge of flange 33 having the detents 32, in the particular embodiment illustrated. However, this camming movement by said detents is merely incidental and not functional. It is incidental to the provision of a ratchet structure along the same edge of flange 33 which contains the detents 32. The ratchet function is performed, not by the detents 32, but by recesses 78 located just above the detents 32. The ratchet is such that the monkey 51 may ride upwardly alongside the flange 33, but not downwardly of it unless the pawl tooth 76 is withdrawn from the ratchet. By pinching the crank arm 71 toward flange 54 at the top of the monkey, the monkey 51 is liberated from both of its pawl and ratchet connections.

At the top of each reciprocating bar 41 is a stop 80, indicated in Figs. 1 and 5, in the form of a lug struck from the flange 43. The stop 80 is so positioned that after the topmost support of a magazine has discharged its article, and when the reciprocating bar 41 has last returned to its uppermost normal posiiton, the monkey is held stationary relative to the machine by the pawl-tooth 76 engaged in the uppermost notch 78 of its ratchet on flange 33. Normally the bar 41 could be depressed if the monkey were in a similar but lower position, but the location of stop 80 prevents any effective downward movement of the bar 41.

In Fig. 1 there are shown five operating bars 41 and their monkeys 51. Each bar 41 is connected to means for permitting selection of but one of them at a time when the machine is coin-operated. At the lower right corner of Fig. 1 there is a pivoted bar 82 arranged so that it may move horizontally and pass through an opening 83 in side wall 13, except for a notch 84 formed in the bar to prevent such entry when tension spring 85 functions to urge the bar 82 into the position illustrated. By suitable coin-control the bar 82 may be raised to permit movement of the bar to the left through said hole 83. The bar 82 is pivoted at 86 on a horizontal slide 87 which carries the bar 82 to the left at each dispensing operation. The slide is so moved by manual depression of one of five push bars 88, each of which presents a horizontal flat platform 89 to the public for selection of one of them on a single coin-permit to operate the machine. The platforms 89 engage the bottom ends of the reciprocating bars 41 by insertion of the platform member 89 into a lateral slot 90 in each bar 41. The operator's downward push on a platform 89 operates the reciprocating bar 41 when and if the selected push bar 88 is liberated for downward movement, as by the insertion of a coin. A suitable linkage connects a selected effective push bar 88 with the slide 87. Each bar 88 has a pin 88' riding in a slot 87' shaped like a figure 7. The horizontal section of the slot rides along the pins 88' of unselected bars, and the angular section of the slot connects the slide 87 and the selected bar 88. A tension spring 91 connecting the casing wall 13 with the slide 87 serves to bias the slide toward the right and into the normal position illustrated in Fig. 1. Tension springs 89' normally urge each bar 88 upwardly thus to move each reciprocating bar 41 upwardly through its second half cycle to carry the monkey with it and effect the release of an article. In order to prevent incompleted cycles, conventional means is employed to compel completion of a dispensing cycle and avoid backing up in a started cycle. Such means is preferably associated with a part which reciprocates irrespective of what magazine is selected, for example the slide 87. A suitable device is a fixed ratchet 92 with a pawl 93 carried by the slide 87, which pawl reverses its relation to the ratchet at the end of each half cycle.

Conventional means is employed to permit but one at a time of the push bars 88 to be effectively connected to the slide 87. The detailed mechanism is not set forth since this forms no part of the present invention. But it involves several horizontal freely sliding bars 95 placed endwise, one for the space between each pair of bars 88, and located at lower and narrower portions thereof designated 96. Each narrow portion is connected by camming shoulders 97 to the wider parts 98. As indicated, each bar 95 has rollers 101 near its ends in positions such that one roller of one bar lets the nearest shoulder 97 pass, while the roller at the other end of the bar blocks the shoulder of the adjacent operating bar 88. As illustrated, the middle bar 88 is free to be depressed, and the others are blocked. In the normal position shown in Fig. 1, any bar 88 may be pushed down, moving one or two cams, or none if the same bar 88 was the last one operated. One bar 88 down effectively blocks every other one.

In Fig. 1 the magazine 18 is shown set for loading it with articles to be dispensed, and for effecting the first delivery from the lowermost compartment. The compartments all open at the front panel of the machine and into these openings the articles are easily inserted. The monkey 51 for said magazine 18 is in its lowermost position where it is held against downward movement by the tooth 76 entered in a ratchet notch 78. At the same time the other pawl has its tooth 62 lying on the face of flange 53 of bar 41, permitting downward movement of bar 41 when push bar 88 is depressed. This brings a ratchet hole 64 in flange 43 down to receive the tooth 62 for pushing the monkey up with bar 41. Then when the reciprocating bar 41 moves up again, by the force of spring 91,

the tooth 62 of the pawl 62 is positively engaged by said ratchet hole 64 in the face flange 63 of the reciprocating bar, and consequently the monkey moves upwardly. This upward movement carries the camming dog 55 on the monkey past the shelf edge 28', forcing the article-support to slide to the right in Fig. 1 out from under its detent 32. So released, the support drops and the article thereon is dumped. Then the condition of the magazine 18 will be as indicated by magazine 17.

Further operations will bring the monkey to the top of the magazine and to the position illustrated by magazine 16. Here the monkey 51 lies under the stop 80 which prevents the operating bar 41 being moved downwardly. This compels selection of any other push bar 88 not similarly obstructed by an empty magazine. It is to be noted that in magazine 16 all the supports 25 have delivered their articles and lie in hanging position as illustrated by dotted lines at 25a in Fig. 5. To reset the magazine 16, the monkey is pinched by squeezing the parts 71 and 54 together to permit lowering it to the bottom position as illustrated in magazine 18. Then each support 25 may be individually returned to its detent by turning it on its axle. However, the arrangement is such that any support beneath another may be turned to its supporting position and way beyond it thereby to lift one or more supports which are above it back into the normal position of each or to an over-reach of the same to carry the setting action to still higher supports.

Thus, an empty magazine may be reset by one motion to lower the monkey, and one or more additional motions to return the supports, depending upon the exact construction and the number of compartments vertically.

Fig. 1 shows magazine 14 partly unloaded. It may be reloaded from this condition in the same manner as an empty magazine, by lowering the monkey and returning the empty supports to normal supporting position.

From the foregoing description and explanation it will be understood that the present invention provides a dispensing machine of simplified structure, having a minimum of moving parts to lower the cost of manufacture, assembly, service and repair. Various modifications of the structure are contemplated wthout departing from the spirit and scope of the invention as expressed in the appended claims.

I claim:

1. A dispensing machine suitable for vending by coin-operation, comprising a body portion providing at least one vertical magazine, a vertical wall rearwardly of the magazine, a spaced plurality of article-supports each pivoted on a horizontal axis fixed with respect to the body portion at the operating front of the machine and all spaced apart for dividing said magazine vertically into compartments for articles of merchandise, each article support being normally inclined downwardly toward said vertical wall and terminating closely adjacent said wall, whereby to provide an angular pocket for retaining an article by said support and by said wall, each article-support being normally biased to turn on its axis from its article-holding position into a position such as to dump an article downwardly and backwardly in the machine for dispensing delivery, said support being formed to provide front openings into the compartment above it when the support is in article-holding position, said support having at least a part thereof movable with respect to the body portion and normally biased for engagement by a detent to hold the support in its article-holding position and movable from the detent to permit dumping movement of the support, a fixed detent on the body portion in position to engage said movable part of each support, and means located at the front of the magazine to engage and move the movable part of each support to render its detent ineffective and thereby effect dumping movement of the support, the front location of said last mentioned means and the said front openings into the compartments, permitting reloading the magazine from the front face thereof.

2. A dispensing machine suitable for vending by coin-operation, comprising a body portion providing at least one vertical magazine, a vertical wall rearwardly of the magazine, a spaced plurality of article-supports each pivoted on an axis fixed with respect to the body portion at the operating front of the machine and all spaced apart for dividing said magazine vertically into compartments for articles of merchandise, each article support being normally inclined downwardly toward said vertical wall and terminating closely adjacent said wall, whereby to provide an angular pocket for retaining an article by said support and by said wall, each article-support being normally biased to turn on its axis from its article-holding position into a position such as to dump an article downwardly and backwardly in the machine for dispensing delivery, said support being formed to provide front openings into the compartment above it when the support is in article-holding position, said support being also movable horizontally on its axis and in such movement being normally biased for engagement by a detent to hold the support in its article-holding position and being movable from the detent to permit dumping movement of the support, a fixed detent on the body portion in position to engage said support, and means located at the front of the magazine to engage and move each support horizontally on its axis to render its detent ineffective and thereby effect dumping movement of the support, the front location of said last mentioned means and the said front openings into the compartments, permitting reloading the magazine from the front face thereof.

3. A dispensing machine suitable for vending by coin-operation, comprising a body portion providing at least one vertical magazine, a vertical wall rearwardly of the magazine, a spaced plurality of horizontal axles mounted in said body portion at the operating front of the machine for dividing said magazine vertically into compartments for articles of merchandise, an article-support carried by each axle in pivotal relation and normally biased to turn on its axle from an article-holding position into a position such as to dump an article downwardly and backwardly in the machine for dispensing delivery, each article support being normally inclined downwardly toward said vertical wall and terminating closely adjacent said wall, whereby to provide an angular pocket for retaining an article by said support and by said wall, said support being formed to provide front openings into the compartment above it when the support is in article-holding position, said support having at least a part thereof movable with respect to the body

portion and normally biased for engagement thereof by a detent to hold the support in its article-holding position and movable from the detent to permit dumping movement of the support, a fixed detent on the body portion in position to engage said movable part of each support, and means located at the front of the magazine to engage and move the movable part of each support to render its detent ineffective and thereby effect dumping movement of the support, the front location of said last mentioned means and the said front openings into the compartments, permitting reloading the magazine from the front face thereof.

4. A dispensing machine suitable for vending by coin-operation, comprising a body portion providing a horizontal bank of vertical magazines, a vertical wall at the rear of said magazines, a spaced plurality of horizontal axles mounted forwardly in said body portion and extending across the bank for dividing each magazine into compartments for articles of merchandise, a vertical plurality of plates substantially flat on the upper face mounted in each magazine, each plate having spaced alined perpendicular ears near its front end extending downwardly therefrom and journaled about an axle to permit vertical swinging of the plate about the axle, said plate being normally biased to turn on said axle out of article-holding position, said plate in article-holding position being formed to provide front openings into each compartment and being normally inclined downwardly toward said vertical wall and terminating closely adjacent said wall whereby to provide an angular pocket for retaining an article by said plate and by said wall, said plate having at least a part thereof movable with respect to the body portion and normally biased for engagement thereby by a detent to hold the plate in its said article-holding position and movable from the detent to permit dumping movement of the plate, a detent fixed with respect to the body portion in position to engage said movable part of said plate for holding the plate in article-holding position, and upwardly movable releasing means located at the front of each magazine sequentially to engage and move the movable part of each plate to render its detent ineffective and thereby effect dumping movement of a plate, the front location of the last menioned means and the said front openings into the compartments permitting reloading the magazine from the front face thereof into the pockets formed by said rearward wall and said plates.

5. A dispensing machine suitable for vending by coin-operation, comprising a body portion providing a horizontal bank of vertical magazines, a vertical wall at the rear of said magazines, a spaced plurality of horizontal axles mounted forwardly in said body portion and extending across the bank for dividing each magazine into compartments for articles of merchandise, a vertical plurality of plates substantially flat on the upper face mounted in each magazine, each plate having spaced alined perpendicular ears near its front end extending downwardly therefrom and journaled about an axle to permit vertical swinging of the plate about the axle, said plate being normally biased to turn on said axle out of article-holding position, said plate in article-holding position being formed to provide front openings into each compartment and being normally inclined downwardly toward said vertical wall and terminating closely adjacent said wall whereby to provide an angular pocket for retaining an article by said plate and by said wall, said plate being also movable horizontally on its axis and in such movement being normally biased for engagement by a detent to hold the plate in its said article-holding position and movable from the detent to permit dumping movement of the plate, a detent fixed with respect to the body portion in position to engage said movable part of said plate for holding the plate in article-holding position, and upwardly movable releasing means located at the front of each magazine to engage and move the movable part of each plate to render its detent ineffective and thereby effect dumping movement of the plate, the front location of the last mentioned means and the said front openings into the compartments permitting reloading the magazine from the front face thereof into the pockets formed by said rearward wall and said plates.

6. A dispensing machine suitable for vending by coin-operation, comprising a body portion providing at least one vertical magazine, a vertical wall at the rear of said magazine, a spaced plurality of horizontal axles mounted in said body portion and extending across the magazine into compartments for articles of merchandise, a vertical plurality of plates substantially flat on the upper face mounted in each magazine, each plate being pivotally mounted on an axis in common with said axle to permit vertical swinging of the plate about its axle, said plate being normally biased to turn on said axle out of article-holding position, said plate in article-holding position being formed to provide front openings into each compartment and being normally inclined downwardly toward said vertical wall and terminating closely adjacent said wall whereby to provide an angular pocket for retaining an article by said plate and by said wall, said plate having at least a part thereof movble with respect to the body portion and normally biased for engagement thereby by a detent to hold the plate in its said article-holding position and movable from the detent to permit dumping movement of the plate, a detent fixed with respect to the body portion in position to engage said movable part of said plate for holding the plate in article-holding position, and upwardly movable releasing means located at the front of the magazine to engage and move the movable part of each plate to render its detent ineffective and thereby effect dumping movement of the plate, the front location of the last mentioned means and the said front openings into the compartments permitting reloading the magazine from the front face thereof into the pockets formed by said rearward wall and said plates.

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