

E. F. SPAULDING.
 COIN CONTROLLED VENDING MACHINE.
 APPLICATION FILED FEB. 19, 1909.

939,563.

Patented Nov. 9, 1909.
 6 SHEETS—SHEET 1.

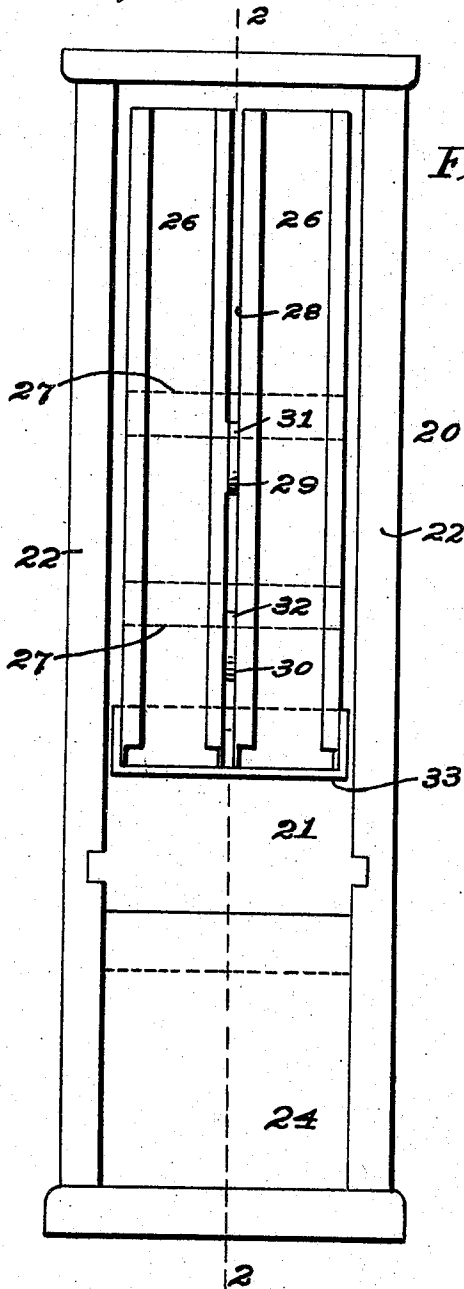


Fig. 1.

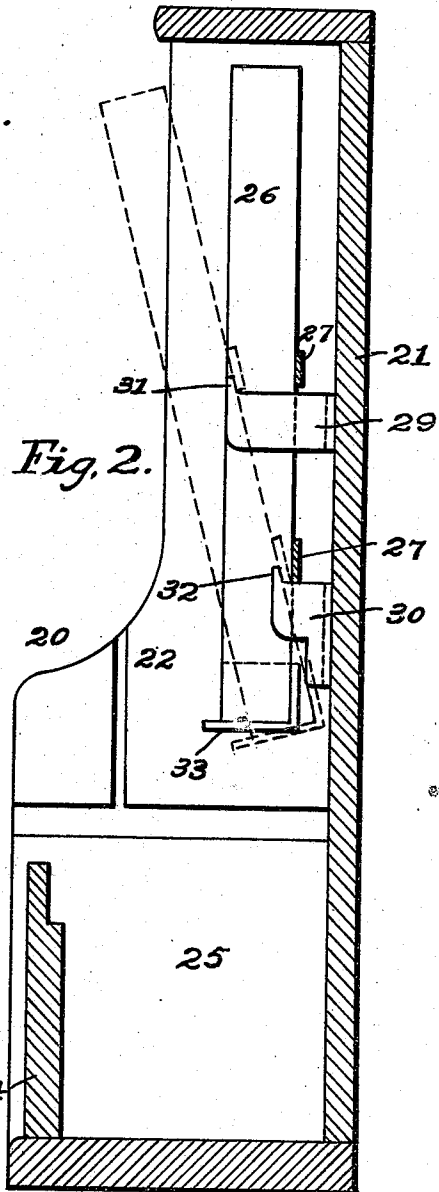


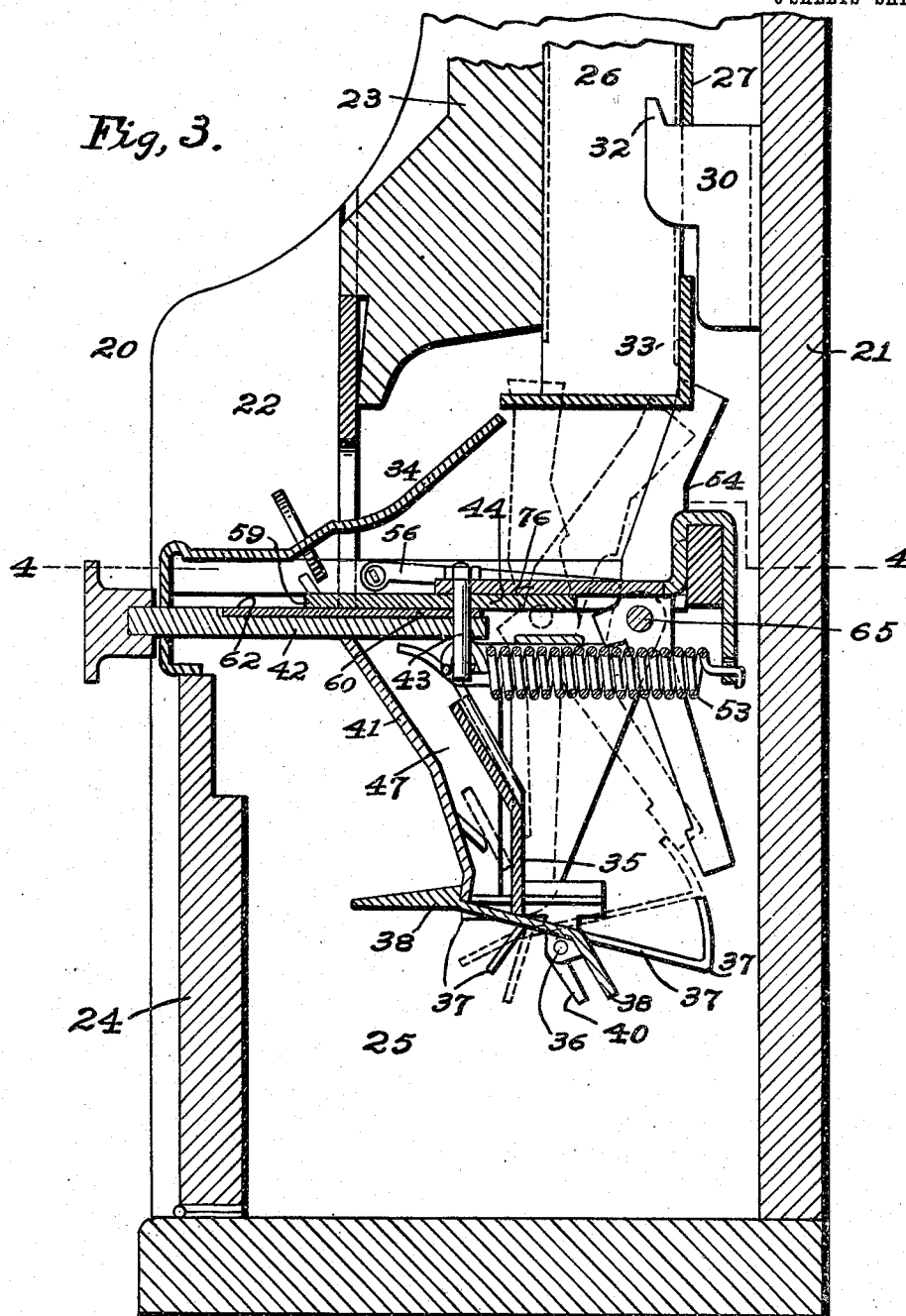
Fig. 2.

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Fig. 3.



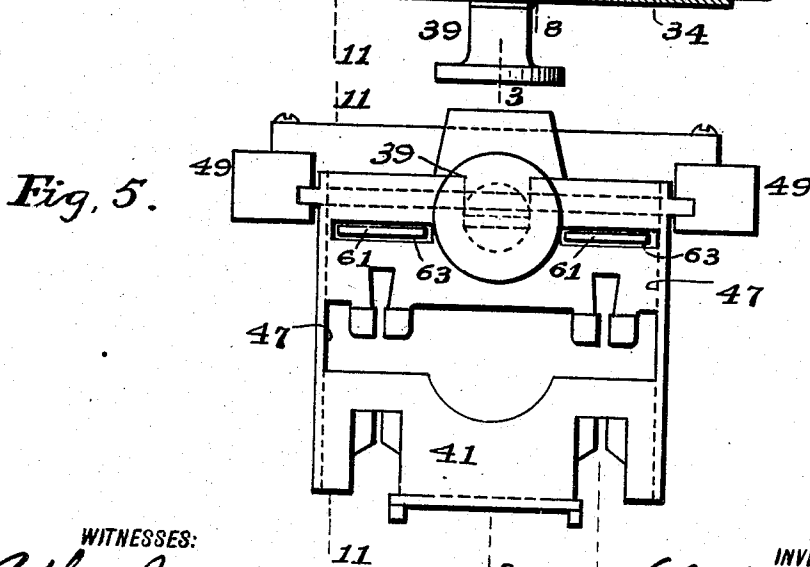
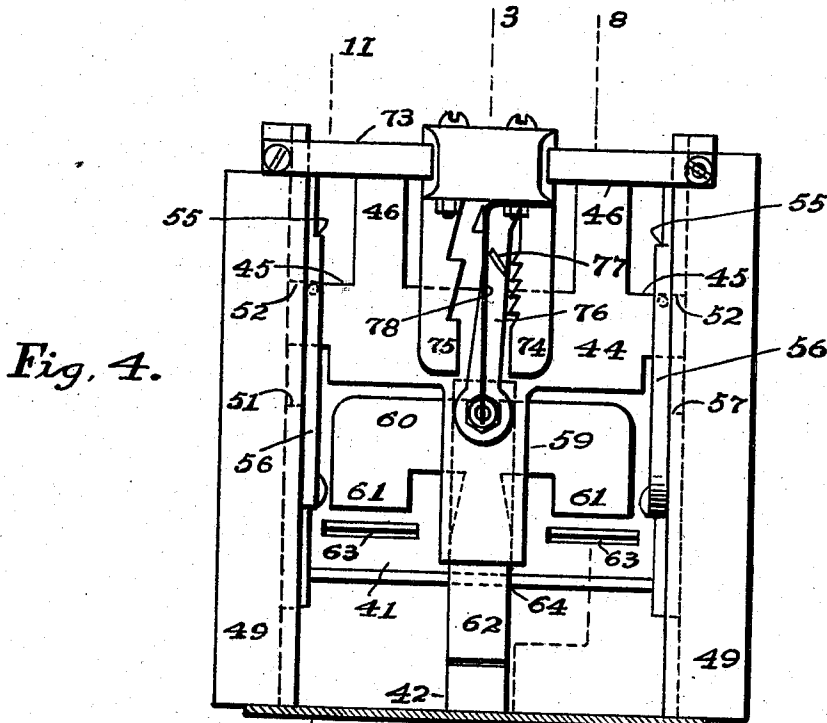
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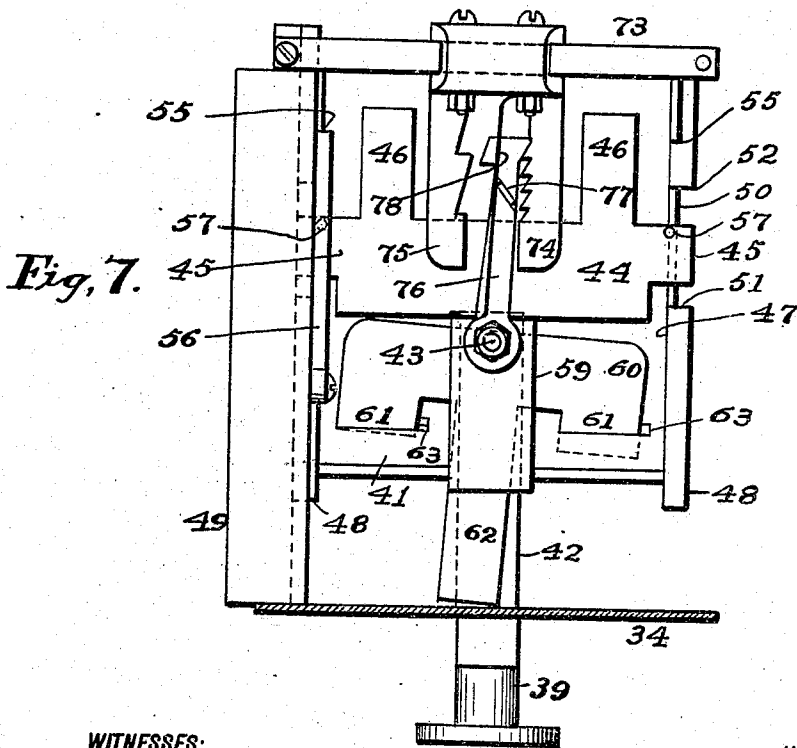
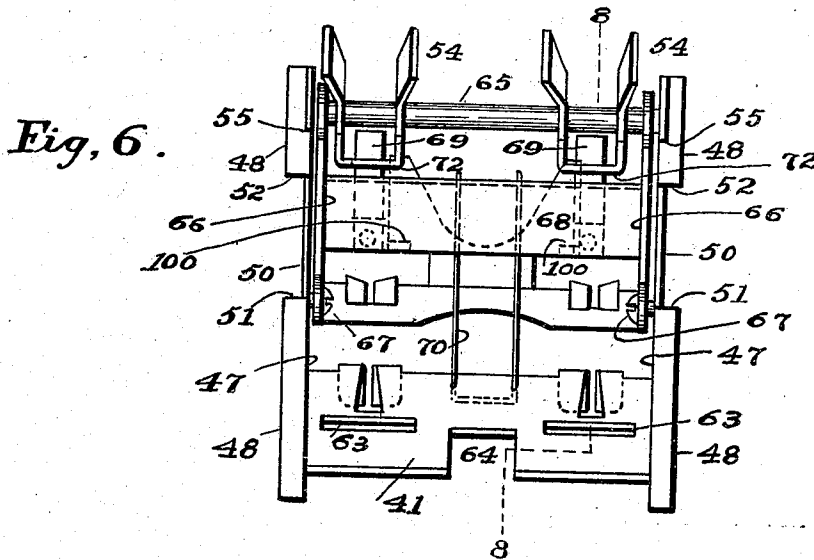
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6 SHEETS—SHEET 5.

Fig. 8.

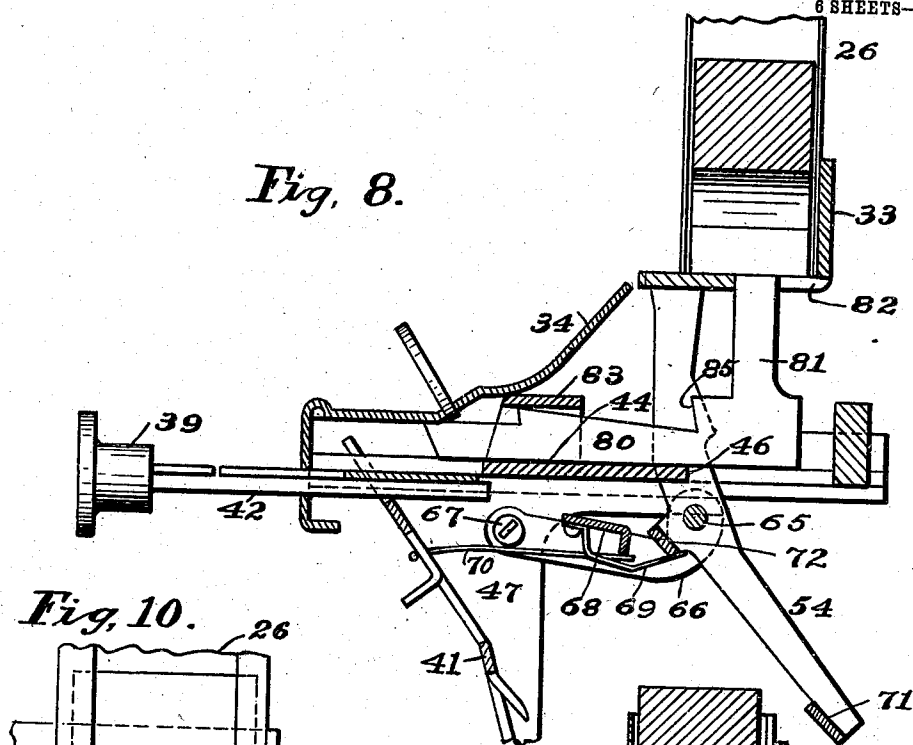


Fig. 10.

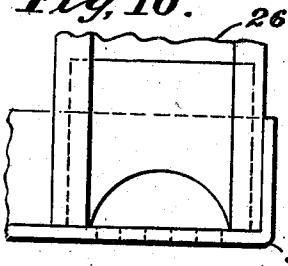
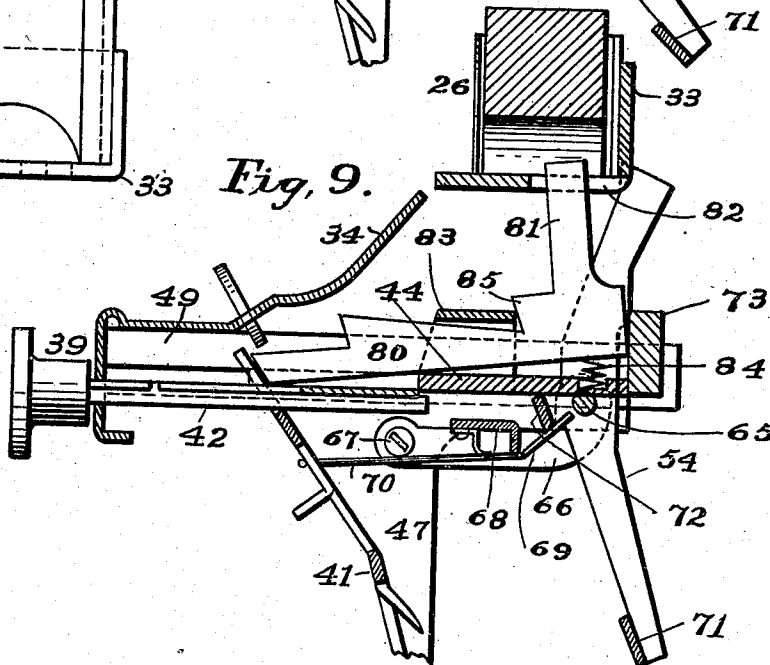


Fig. 9.



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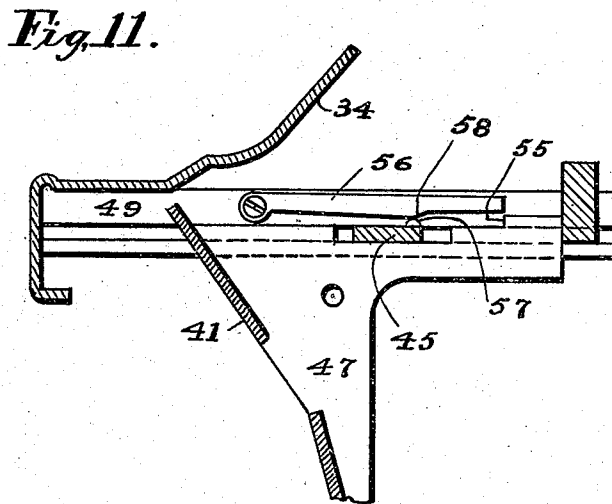
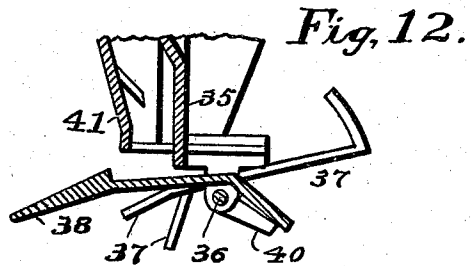
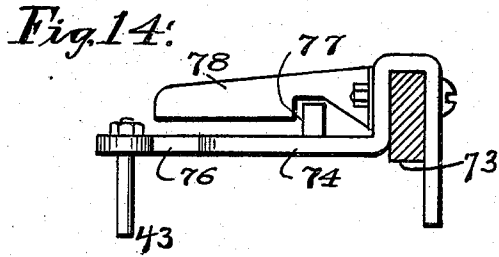
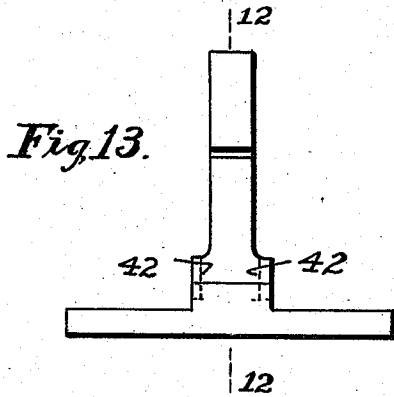
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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED VENDING-MACHINE.

939,563.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 19, 1909. Serial No. 478,839.

To all whom it may concern:

Be it known that I, ELIJAH F. SPAULDING, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

The invention relates to improvements in coin-controlled-vending machines, and consists in the novel features, arrangements and combinations of parts hereinafter described, and particularly pointed out in the claims.

The invention made the subject of this application comprises certain improvements on the vending machine described and claimed in my application for Letters Patent No. 441,723 filed July 3, 1908, and which machine comprises a coin slot plate, a vertical tray for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods ejector carried by said slide, a coin chute extending downwardly from said slide, and a tiltable coin receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold said end arrested during the movement of said slide and handle to carry the upper end of said ejector against the piece of goods to be sold for the purpose of dislodging the same.

My present invention comprises all of the above-mentioned features, together with additional features for rendering the operation of the machine more convenient and efficient, to ease the movement of certain parts of the machine and to prevent the loss to a purchaser, which in some machines takes place, if the machine is operated so quickly after the coin has entered the coin slot that the coin has not had an opportunity to reach the mechanism to be actuated by it.

The present invention also involves means for effectually closing the coin slot when the operating handle is away from its initial position and also means for closing said slot when the tray of goods to be sold becomes empty.

The present invention also comprises means for preventing the operation of the machine by a thin strip of paper, steel or the like introduced through the coin slot for

the purpose of thereby tilting the coin receiver.

The invention also comprises other features of construction and operation pertaining to the operative mechanism and to the means for supporting the vertical trays, and will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a front view of the cabinet and vertical trays of my machine, the coin slot plate, operative mechanism, and front door for covering said trays being omitted; Fig. 2 is a vertical longitudinal section of the same on the dotted line 2—2 of Fig. 1, the trays being shown in their tilted position by dotted lines while still supported upon the brackets which hold them when in their operative position; Fig. 3 is an enlarged vertical transverse section through the lower portion of the machine on the dotted line 3—3 of Fig. 4, the operated position of the goods ejector and tiltable coin receiver being indicated by dotted lines; Fig. 4 is a horizontal section through the machine, the cabinet being omitted, on the dotted line 4—4 of Fig. 3, the goods ejectors being for clearness of illustration omitted from Fig. 4; Fig. 5 is a front view of that part of the mechanism illustrated in Fig. 4; Fig. 6 is a top view of a part of the operative mechanism of the machine, the handle and slide connected therewith being omitted so as to disclose the mechanism located below said handle and slide; Fig. 7 is a top view, partly in section, of a portion of the operative mechanism, this view corresponding substantially with Fig. 4, but illustrating in its operated position that feature of the machine which prevents the outward pull of the handle when a paper strip or the like has been introduced through one of the coin slots for the purpose of tilting the coin receiver to its operative position; Fig. 8 is a detached vertical section through a portion of the machine on the dotted line 8—8 of Fig. 4 and illustrates the operated position of the goods ejector and the position the shutter bar takes while excluding a coin from the coin slot during the period that the operating handle is away from its initial position; Fig. 9 is a view substantially corresponding with Fig. 8 but illustrating the operating handle at its inner or initial po-

sition, the goods ejector in its initial position, and the coin slot closing shutter or bar mechanism in the operated position it takes to close the coin slot when the last
 5 piece of goods has been ejected from the vertical tray; Fig. 10 is a detached front view of the lower end of one of the vertical trays and illustrates the weight therein in its lower position with its concaved or recessed bottom creating a space permitting
 10 the coin slot closing devices to take the position in which they are shown in Fig. 9; Fig. 11 is a detached sectional view through a portion of the machine on the dotted line
 15 11-11 of Fig. 4; Fig. 12 is a sectional view through a portion of the machine comprising the lower end of the coin chute and a latch for preventing the operation of the machine until the same has been tilted to
 20 the position shown in Fig. 12 by the weight of a coin in the coin receiver, said latch being shown in Fig. 3 in its locking position; Fig. 13 is a detached top view of the latch
 25 shown in section in Fig. 12; and Fig. 14 is a detached side elevation of the means for compelling a full throw of the operating handle, with the rigid bar holding the ratchet portion of the same in section.

In the drawings 20 designates the cabinet as a whole, said cabinet comprising a back
 30 21, sides 22, an upper removable front 23 (Fig. 3) of usual construction, and a lower front section or door 24 behind which is formed the chamber 25 to contain the operative mechanism of the machine and also receive the coins fed to the same. Behind the
 35 removable front 23 is mounted a frame of vertical trays 26 composed of individual trays of customary form to hold the pieces of confections to be sold and, in the present
 40 instance, connected at their backs by means of transverse bars 27. I only illustrate two individual trays 26 in the drawings, but any number of trays may be employed, as usual. The trays 26 are separated from each other
 45 by a space 28 (Fig. 1) and supported within the cabinet upon bracket arms 29, 30 which are secured to the back 21 of the cabinet and project forwardly through the
 50 space 28 below the transverse bars 27 so that the latter by resting on said brackets may cooperate with said brackets in supporting said trays. The brackets 29, 30 are disposed one above the other, the lower
 55 bracket being near to the lower end of the frame of trays and the upper bracket being about at the middle of the height of said frame. Both the brackets 29, 30 are formed with upwardly extending forward projections
 60 31, 32, respectively, which preferably incline downwardly and rearwardly and which permit the tilting of the trays 26 forwardly at their upper portion and maintain an engagement with the transverse bars 27,
 65 as shown in Fig. 2, whereby the frame of

trays becomes so positioned, without entire removal from the cabinet, that they may be conveniently replenished with the goods to be sold. The lower bracket 30 is shorter
 70 than the upper bracket 29, and hence on moving or tilting the frame of trays to the position shown by dotted lines in Fig. 2, the lower bracket operates substantially as a
 75 pivotal point to allow the upper portion of the frame of trays to be swung forwardly on the bracket 29 until the upper transverse bar 27 becomes arrested by the projection 31
 of said upper bracket.

I regard the means for supporting the frame of trays and permitting them to be
 80 moved to the tilted position indicated by dotted lines in Fig. 2 to be of particular efficiency and utility, since they dispense with more complex and uncertain devices at presence in use for supporting and per-
 85 mitting the tilting of said trays.

The lower end of the frame of trays 26 has secured to it an angle plate 33 which forms the bottom and back for the lower
 90 ends of the individual trays. The lower member of the angle iron plate 33 extends forwardly of the vertical plane of the front edges of the trays, and both members of said plate 23 are slotted, as indicated in Figs. 8,
 95 9 and 10, to permit the movement through said plate of the upper ends of the goods ejectors and the upper end of the arm constituting a portion of the coin slot closing devices, said slots not, however, extending
 100 through the front edge of the lower member of said angle plate 33.

Forwardly of the lower ends of the trays 26 is provided a discharge chute and coin slot plate 34 which constitutes a portion of
 105 a removable frame carrying all of the operative mechanism of the machine with the exception of a plate 35 which extends transversely across the machine and carries a rod
 110 36 upon which are pivotally mounted the coin receivers 37 and latch 38, said stationary rod 36, coin receivers 37, and latch 38 not being movable from the operating handle 39 but remaining in a fixed location. There is one receiver 37 for each tray and
 115 only one latch 38, and while said latch is new in the present application, said receiver is illustrated in my aforesaid application filed July 3, 1908 with the one exception that the receivers 37 in the present applica-
 120 tion each carry a finger 40 which, when the receiver is tilted upwardly at its rear end, as shown by dotted lines in Fig. 3 and solid lines in Fig. 12, will move against the rear downwardly extending end of the latch 38 and force the forward end of said latch
 125 downwardly free of the coin chute plate 41 or from its locking position shown in Fig. 3 to its unlocked position shown in Fig. 12, thereby freeing the plate 41 and parts connected with it, one of which is the handle
 130

39, to be pulled outwardly for the purpose of ejecting a piece of the goods to be sold. The coin receiver 37 is tilted into its operated position, shown in Fig. 12, by the weight of a coin entering the front end of the coin receiver 37 when the latter is in its initial position, shown by full lines in Fig. 3, and hence the latch 38 will remain in its locking position, shown in Fig. 3, to restrain all movement of the handle 39 until the coin has entered and tilted the receiver to carry the arm 40 against said latch for freeing the same from the coin chute plate 41, after which the handle 39 may be pulled outwardly at will. The latch 38 is intended to be tilted to its unlocking position by any one of the coin-receivers 37, and hence said latch at its rear end is of elongated form, as shown in Fig. 13, so that said end, which is heavier than the front end and deflected downwardly as shown in Figs. 3 and 12, may extend from a central point on the rod 36 to both receivers. The forward end of the latch 38 is formed with a shoulder to engage the lower edge of the coin-plate 41 (Fig. 3), and in rear of said shoulder the body of said latch is formed with ears 42 (Fig. 13) to pass on the rod 36.

The slide connected with the handle of my aforesaid pending application forms in effect a rigid structure, and one novel feature of my present invention is that aside from other special features the slide is formed of two parts having a lost motion connection whereby when the handle is pulled outwardly one portion of the slide immediately moves therewith for a short distance and then takes up the other portion of the slide so that both portions of the slide then move outwardly with the handle. The handle 39 has an inwardly extending handle rod 42 which projects through a hole in the front vertical portion of the coin slot plate 34 and extends inwardly a suitable distance, and to the inner end of said rod 43 is connected by means of a vertical pin 43 a plate 44 shown in section in Fig. 3 and in top elevation in Figs. 4 and 7. The plate 44 is a transversely disposed flat plate having guiding arms 45 at its sides and rearwardly projecting arms 46 at its rear end. The arms 45 rest on the recessed edges of the other member of the slide, which other member is formed of the downwardly inclined coin chute plate 41 and the side plates 47 which are integral with said plate 41 and support the same. The side plates 47 are formed with horizontal flanges 48 at their upper edges to guide in grooves of the supporting bars 49, and said flanges 48 for a definite distance are cut away to form the recesses for the outer ends of the arms 45 of the slide plate 44. The recesses, which I number 50, are longer than the arms 45 are wide, as shown in Fig. 7, and hence said arms may have an independ-

ent movement within said recesses without affecting the sliding member composed of the plate 41 and its sides 47. The flanges 48 at the ends of the recess 50 form shoulders against which the arms 45 may press, and for convenience of description I number said shoulders 51, 52. The arms 45 and recesses 50 afford the lost motion action between the slide plate 44 and the slidable plate 41, and when the handle 39 and its rod 42 are pulled outwardly, the plate 41 will not be set in motion until the arms 45 on the plate 44 reach and press against the shoulders 51 and thereby compel the forward sliding movement of the plate 41 with the plate 44 and handle 39. The lower end of the pin 43 is connected with a spring 53 which acts to resist the outward movement of the handle 39 and to return the operated parts to their inner position after each outward pull of said handle. The purpose of providing the lost motion connection between the plate 44 and plate 41 constituting the slide carrying the goods ejectors, numbered 54, will be explained hereinafter.

In addition to providing the lost motion connection between the plates 44, 41 of the slide, I provide means for preventing the plate 41 from being moved except by the movement of the plate 44, and these means comprise shoulders 55 on the upper rear edges of the sides 47 of the plate 41 and dogs 56 pivotally secured to the stationary side bars 49. The dogs 56 (Fig. 11) are so secured that when the plate 41 is at its inner or rear position the rear ends of the dogs will fall behind the shoulders 55 and lock said plate in position. It is necessary, however, that the plate 41 move forwardly with the handle 39 after the plate 44 has moved forwardly a limited distance, and to effect the release of the dogs 56 from the shoulders 55 so that the plate 44 may engage and move said plate 41 forwardly, I provide the arms 45 with upwardly extending studs 57 to ride under inclined surfaces 58 provided on the dogs, as more clearly represented in Fig. 11, which illustrates the arms 45 as having moved forwardly to a sufficient extent to effect through the studs 57 and surfaces 58 the elevation of the dogs 56 from the shoulders 55. The dogs 56 thus positively lock the plate 41 against forward movement except when released by the movement of the plate 44.

The slide plate 44 has a forwardly projecting arm 59 which is directly over the handle rod 42 and between said arm 49 and said rod is pivotally secured on the pin 43 a horizontally tiltable plate 60 having forwardly projecting arms 61 and a central forwardly projecting arm 62, the latter being disposed directly on the upper surface of the rod 42, which is recessed to receive said arm 62, and said arms 61 being adapted

in the correct operation of the machine to pass freely through slots 63 formed in the coin slide plate 41 at opposite sides of the hole or recess 64 through which the handle rod and arm 62 slide during the use of the machine. The inner end of the arm 62 has tapered side edges, as shown by dotted lines in Fig. 4, while the outer portions of said arm have parallel edges which enable the edges of the hole or recess 64 to normally maintain the plate 60 in its initial position shown in Fig. 4 with its arms 61 directly in line with the slots 63. Should a strip of paper or steel be inserted downwardly through one of the coin slots and the handle 39 then pulled outwardly, presuming that the strip reached and tilted the coin receiver, one arm 61 would strike said strip and be prevented from passing through its slot 63, and this would have the effect of tilting the plate 60 horizontally to about the position shown in Fig. 7, with the result that the arm 62 would be turned from over the handle rod 42 and instead of passing through the front hole in the plate 34 would stand off from line with the same and strike said plate, thereby arresting the handle 39 and preventing the operation of the machine. After the arm 62 of the plate 60 has passed a definite distance through the hole 64 in the plate 41, its tapered inner edges will permit the swiveling of the plate 60 on the pin 43 by any pressure exerted against one or the other of the arms 61. If the plate 60 should become tilted or swiveled laterally in the manner indicated in Fig. 7, said plate will be restored to its initial position shown in Fig. 4 upon the return inward movement of the handle rod 42, since during such movement the parallel edges of the arm 62 will move against the edges of the hole or recess 64 and operate to restore the plate 60 to its initial position. The arm 62, therefore, affords a stop to prevent the outward movement of the handle and slide whenever any strip is inserted through the coin slot and extends over one or the other of the slots 63 in the plate 41.

The goods ejectors 54 are carried by the side plates 47 of the coin chute plate 41 as in the construction described in my aforesaid pending application. In the present instance, however, I mount said ejectors on a horizontal rod 65 supported in the rear ends of the arms 66 which are mounted on pivots 67 carried by the sides 47 of the coin chute plate 41, as shown more clearly in Figs. 6, 8 and 9. The arms 66 are connected by a transverse bar 68 to which is connected a spring 69 for each ejector 54 and against which the spring 70 held by the coin chute plate 41 is flexed, the purpose of the spring 70 being to yieldingly press the ejectors to their upper position and permit said ejectors and arms 66 carrying the same to yield

downwardly during the return movement of the ejectors below the stack of confections to their rear position. Each ejector is composed of two arms about centrally pivotally mounted on the rod 65 and connected at their lower ends by a cross-bar 71. The upper ends of the arms of the ejectors flare outwardly to a slight extent, as shown in Fig. 6. Adjacent to the springs 69 for each ejector the side arms of the latter are connected by a cross-bar 72 against which the aforesaid spring is flexed and which imparts steadiness to the ejector and yieldingly locks it in its operated position, shown in Fig. 8, when the handle 39 is in its front position, and will also yieldingly lock the ejector in its rearwardly tilted position, as shown in Fig. 9, when the handle 39 is moved inwardly and the ejector has been turned on its pivot rod 65 to its initial position. The ejectors 54 correspond in many respects with the goods ejectors shown and described in my aforesaid application, and the special improvements presented herein in connection with said ejectors is the method of yieldingly mounting the same, each ejector being mounted on the pivot rod 65 held in the rear ends of a pair of connected spring-supported arms 66.

The upwardly extending portions of the goods ejectors 54 receive between them the arms 46 of the plate 44, and said arms by being between the members of the ejectors serve to center the latter upon their supporting rod 65 and maintain them in correct position on said rod. The arms 46 are of such length that they never pass wholly from between the members of the ejectors, and hence although the plate 44 may have a sliding movement under the action of the handle 39, the arms 46 will continue to perform their duty of preventing any lateral displacement of the ejectors 54 on the rod 65.

The initial inoperated position of the ejectors 54 is shown by full lines in Figs. 3 and 9, and the operated position of the ejectors 54 is illustrated in Fig. 8. In Fig. 3 I indicate by dotted lines the operated position of an ejector and intermediate the ejector indicated by solid lines and the operated position of the ejector indicated by dotted lines I indicate by further dotted lines the position of an ejector carried forwardly below the stack of confections without acting to eject a piece of the same, the said intermediate position showing the lower end of the ejector as having passed forwardly over a coin receiver 37 instead of having become arrested by a receiver and held while the upper end of the ejector was carried forwardly by the pull on the handle 39. While all of the ejectors may be on one rod 65 only that ejector will operate to dislodge a piece of the confections which has its lower end arrested by a coin re-

ceiver 37, the other ejector or ejectors being permitted to turn rearwardly to a limited extent at their upper ends by their pressure against the goods to be sold.

5 I also provide means for compelling the complete outward movement of the handle 39 when it is started outwardly and the complete inward movement of said handle when it starts inwardly, and these means are more
10 fully illustrated in Figs. 4, 7 and 14 and comprise the stationary ratchet plates 74, 75 connected with the rear bar 73, a pawl 76 secured upon the upper end of the pivot pin 43 and having on its upper side a small
15 diagonal plate 77 and a spring 78 which is rigidly fastened at its rear end and left free at its front end and which spring extends forwardly over the pawl 76 in position to engage either one edge or the other of the
20 blade 77 for the purpose of deflecting the pawl 76 into engagement with the ratchet plate 74 during the outward movement of the handle 39 and against the ratchet plate 75 during the inward movement of said handle. In the position of the spring 78, blade 77, and pawl 76 shown in Figs. 4 and 7, the
25 spring 78 is pressing the pawl against the ratchet plate 74, and should the handle 39 be pulled outwardly, said pawl would ride against the teeth of the ratchet 74 and by its engagement with said teeth prevent the return inward movement of said handle. When the handle 39 reaches its full outward
30 position the diagonal blade 77 on the pawl 76 passes outwardly beyond the front end of the spring 78, and when this happens the spring 78 will assume a normal straight line position, and thereupon when the handle 39 is to return rearwardly the front end of the
35 spring 78 will stand in the path of the diagonal plate 77 and, as said blade moves slightly inwardly, the end of the spring acting against the rear inclined side of the plate will press the pawl 76 over against the ratchet plate 75 with the result that the
40 plate 74 will not prevent the inward movement of the pawl and that the pawl will slide against the teeth of the plate 75, which teeth will, however, prevent any outward movement of the handle 39 until the latter
45 has passed to its full inward position, at which time, the plate 77 will pass into line with a recessed portion of the spring 78, as shown in Fig. 14, and permit said spring to again take its straight line position with the spring extending over the plate 77. Upon the next outward movement of the handle 39 the front face of the diagonal plate 77 will be carried against a rear end shoulder 79 of
50 the spring 78 and deflect said spring to the position in which it is shown in Fig. 7 so as to enable said spring to move the pawl 76 over against the ratchet plate 74 and insure the full forward or outward movement of
55 the handle 39. During the outward move-

ment of the handle 39 the plate 77 passes outwardly on one side of the spring 78, as shown in Fig. 7, and upon the return or inward movement of the handle 39 said plate passes inwardly on the opposite side of said
70 spring.

The means for closing the coin slot when the handle 39 is away from its initial position and also for closing said slot when the vertical tray 26 requires to be replenished,
75 are more clearly illustrated in Figs. 8 and 9, and comprise for each tray and its corresponding coin slot a bar 80 set on edge and having at its rear end a vertical arm 81 adapted to move in a slot 82 formed in the
80 bottom of the tray 26. The bars 80 rest freely on the slide plate 44 in line with the arms 46 of said plate and are housed in loops 83 carried by said plate, said loops being formed of metal and closely encompassing
85 the bars 80 at their sides so as to maintain them in upright position but being of such height as to permit said bars to be tilted. Below the rear end of each bar 80 is a spring 84 (Fig. 9) which acts to elevate the arm 81
90 of the bar so that its upper end will project into the lower end of the tray 26 when the latter is empty. The arm 81 and bar 80 are kept in their lower position against the stress of the spring 84 by the weight of the stack of
95 confections in the tray 26 during the customary operation of the machine. During the outward movement of the handle 39 and parts connected with it, the shutter bar 80 will be carried forwardly, as shown in Fig. 100
8, and its forward end will pass below the coin-slot for the purpose of excluding coins from said slot. During the inward motion of the handle 39 the shutter bar 80 will be carried inwardly by the rear edge of the loop
105 83 striking and moving against the shoulder 85 formed on said bar, and on said bar 80 reaching its rear position, assuming that the weight of goods in the tray 26 is acting against the upper end of the arm 81, the forward end of the bar will be just in the rear of the coin slot and leave the latter open for the reception of coins. If, however, the outward pull of the handle 39 should have caused the ejection of the last piece of goods
115 in the tray 29, the shutter bar 80 then not having any pressure on the upper end of its arm 81, will be tilted upwardly at its rear end by the spring 84, as shown in Fig. 9, and thereupon the forward end of the bar 80 will
120 turn downwardly against the upper portion of the coin chute plate 41, but remain sufficiently near to the coin-slot to prevent the admission of coins through the same, and at such time said plate 41 will constitute a stop
125 for the bar 80 and cooperate therewith to lock the handle 39 against outward movement.

The operation of the machine will in large measure be understood from the foregoing
130

description, and hence but slight further explanation is necessary. A proper coin fed through the coin slot in the plate 34 will descend the coin chute plate 41 and enter the forward end of the coin receiver 37 and become arrested thereby. The weight of the coin will turn the front end of the coin receiver downwardly and its rear end upwardly, as shown by dotted lines in Fig. 3 and full lines in Fig. 12, in the path of the lower end of the goods ejector 54. The movement of the receiver 37 under the weight of the coin will also cause the finger 40 of the receiver to turn upwardly against the rear bar of the latch plate 38 and cause the front end of said plate to turn downwardly from the coin chute plate 41, thereby releasing the mechanism to be drawn forwardly by the handle 39. The outward or forward movement of the handle 39 first draws outwardly the slide plate 44, and then upon the dogs 56 being released, the coin chute plate 41 will move outwardly with said plate 44 and carry with it the goods ejectors 54. The ejector in line with the operated coin receiver 37 will have its lower end arrested thereby, and hence upon the forward movement of the handle 39 the upper end of said ejector will turn forwardly against the lower piece of goods in the tray 26 and eject the same upon the plate 34, down which it will descend within reach of the purchaser. When the handle 39 is released the spring 53 will return it and the parts connected with the plate 44 and plate 41 inwardly to their initial position, the arms 45 on the plate 44 first leaving the shoulders 51 at the front ends of the recesses 50 and then engaging the shoulders 52 at the rear ends of said recesses to compel the rearward movement of the plate 41. The means shown in Figs. 4, 7 and 14 for compelling a full outward and full inward movement of the handle 39 and the means for protecting the coin slot against the admission of coins at an improper time have been sufficiently described hereinbefore. The horizontal pivotally mounted plate 60 is employed solely to prevent the machine from being defeated with the use of a strip of paper or the like inserted downwardly through a coin slot, and the slide composed of the parts 44, 41 is, in the present instance, made in two parts having a lost motion between them solely for the purpose of enabling the use of the plate 60, the provision for lost motion between said two parts of the slide enabling said plate 61 to act as a stop, when it is compelled to act at all, before the rear plate 44 elevates the dogs 56 to release the plate 41. The latch 38 is provided in the interest of the purchaser, and it prevents the outward pull of the handle 39 before a coin introduced to the machine has reached and operated the coin receiver 37.

The mounting of the goods ejectors 54 on the rod 65 carried by the arms 66 extending rearwardly from the sides of the coin chute plate 41 and having an upward spring tension, is of advantage in that when an ejector has dislodged a piece of the confections, the weight of the descending column may not have to be borne by the ejector, but will press the ejector downwardly against the stress of the spring 70 and thus the ejector may return to its initial position, on the inward movement of the handle 39, with the minimum amount of friction or wear on the machine. The spring 69 steadies the ejector and tends to hold it with some degree of firmness in such position as it may have from time to time during the operation of the machine. When the ejector 54 is in its initial position shown in Fig. 9 and the handle 39 starts outwardly, the spring 69 after the lower end of the ejector reaches the then elevated rear end of the receiver 37 has, during a portion of the forward movement of the handle, a tension against the ejector causing its lower end to press against the rear end of said receiver, with the result that the lower end of the ejector and the rear end of the receiver are not liable to lose their operative engagement with each other due to any jarring or other action of the machine.

The entire machine has been constructed with the view of securing great efficiency and ease of operation in the various parts thereof, and at the same time protect customers against the loss of coins and the machine against unlawful use.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating the slide, a pivoted goods-ejector carried by said slide, a coin-chute, a tiltable coin-receiver to receive the coin from said chute and become thereby tilted in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods sold, and a latch for locking the slide and handle in their inoperated position and operable from said receiver when it tilts under the weight of a coin to free said slide and handle; substantially as set forth.

2. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating the slide, a pivoted goods-ejector carried by said slide, a coin-chute, a tiltable coin-receiver to receive the coin from said chute and become thereby tilted in the path of the lower end of said ejector to hold the same arrested during the

movement of said handle and slide to carry the upper end of said ejector against the piece of goods sold, and a latch for locking the slide and handle in their inoperated position and operable from said receiver when it tilts under the weight of a coin to free said slide and handle, said latch being pivotally mounted and having a shoulder at one end to engage a part connected with said slide and a rear overbalancing portion to be engaged by the receiver, when the latter is tilted, to move said latch from its locking position; substantially as set forth.

3. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating the slide, a pivoted goods-ejector carried by said slide, a coin-chute, a tiltable coin-receiver to receive the coin from said chute and become thereby tilted in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods sold, and a downwardly yieldable frame connected with and forming a part of said slide and supporting said ejector, whereby the latter is enabled to yield downwardly under the weight of goods in said tray after it has ejected the lower piece from the tray and is to return to its initial position; substantially as set forth.

4. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating the slide, a pivoted goods-ejector carried by said slide, a coin-chute, a tiltable coin-receiver to receive the coin from said chute and become thereby tilted in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods sold, and a downwardly yieldable frame connected with and forming a part of said slide and supporting said ejector and comprising two side arms pivotally connected with said slide, a rod connecting said arms on which said ejector is mounted and a spring having an upward tension against said frame; substantially as set forth.

5. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating the slide, a pivoted goods-ejector carried by said slide, a coin-chute, a tiltable coin-receiver to receive the coin from said chute and become thereby tilted in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods sold, and a downwardly yield-

able frame connected with and forming a part of said slide and supporting said ejector and comprising two side arms pivotally connected with said slide, a rod connecting said arms on which said ejector is mounted, a transverse bar connecting said arms, a spring having an upward tension against said frame and a spring connected with said bar and flexed against the ejector for steadying the same and in one position of the ejector pressing the lower end of the same against the tilted coin-receiver; substantially as set forth.

6. In a coin-controlled vending machine having a coin-slot plate and trays for the goods to be sold, a slide below said plate, a handle for operating said slide, pivotally mounted goods-ejectors, one for each tray, carried by said slide, a coin-chute from each coin-slot, tiltable coin-receivers, one for each goods-ejector to receive the coins from said chutes and become thereby tilted in the path of the lower ends of said ejectors to hold the same arrested during the operation of said handle and slide to carry the upper ends of said ejectors against the pieces of goods sold, and a latch for locking the slide and handle in their inoperated position and operable from any of said receivers which may be tilted by a coin to free said slide and handle; substantially as set forth.

7. In a coin-controlled vending machine having a coin-slot plate and trays for the goods to be sold, a slide below said plate, a handle for operating said slide, pivotally mounted goods-ejectors, one for each tray, carried by said slide, a coin-chute from each coin-slot, tiltable coin-receivers, one for each goods-ejector to receive the coins from said chutes and become thereby tilted in the path of the lower ends of said ejectors to hold the same arrested during the operation of said handle and slide to carry the upper ends of said ejectors against the pieces of goods sold, and a downwardly yieldable frame connected with and forming a part of said slide and supporting all of said ejectors; substantially as set forth.

8. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating said slide, a coin-chute, a tiltable coin-receiver and a goods-ejector operable from said handle to eject a piece of the goods after a coin has entered said receiver, combined with a tiltable bar mounted on said slide for closing the coin-slot while the handle is in movement and having an arm extending to said tray to be held depressed by the goods therein, means for tilting said bar upwardly at its rear end when the goods in the tray cease to act on said arm and a stop for then cooperating with said bar to prevent the operation of

said handle, said bar at the same time being located to exclude coins from the coin-slot; substantially as set forth.

9. In a coin-controlled vending machine
5 having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating said slide, a coin-chute, a tiltable coin-receiver and a goods-ejector operable from said handle to eject a piece
10 of the goods after a coin has entered said receiver, combined with means for compelling a full movement of said handle comprising a pair of parallel stationary ratchet plates 74, 75 having oppositely disposed
15 teeth, a pawl 76 pivoted to said slide and having its engaging end between said plates, and means for compelling said pawl to ride against one of said plates during the outward movement of said handle and against
20 the other plate during the inward movement of said handle; substantially as set forth.

10. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a
25 handle for operating said slide, a coin-chute, a tiltable coin-receiver and a goods-ejector operable from said handle to eject a piece of the goods after a coin has entered said receiver, combined with means for compelling
30 a full movement of said handle comprising a pair of parallel stationary ratchet plates 74, 75 having oppositely disposed teeth, a pawl 76 pivoted to said slide and having its engaging end between said plates,
35 a diagonally disposed plate 77 rigid on said pawl and a spring 78 disposed over said pawl and in line therewith and free at one end and recessed at the lower edge of its other end to admit said plate 77, whereby
40 on the outward movement of said handle one face of said plate 77 will act against and flex said spring to turn the pawl in one direction and on the inward movement of
45 said handle the other face of said plate 77 will act against and flex said spring to turn said pawl in the opposite direction; substantially as set forth.

11. In a coin-controlled vending machine having a coin-slot plate and a tray for the
50 goods to be sold, a slide below said plate, a handle for operating said slide, a coin-chute, a tiltable coin-receiver and a goods-ejector operable from said handle to eject a piece of the goods after a coin has entered said receiver, said slide comprising a rear slide-
55 plate (44) connected with said handle and a front slide portion to be engaged by said rear plate during the outward movement of said handle and comprising a downwardly extending plate (41) having a slot 63 in line
60 with the coin-slot, combined with a pivoted plate (60) connected with said handle and having a forwardly projecting arm 62 in line with said handle and a forwardly projecting
65 arm 61 at one side thereof and in line with

said slot 63, and means for locking said plate 41 until the plate 44 and said handle have moved outwardly to a predetermined extent; substantially as set forth.

12. In a coin-controlled vending machine
70 having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a handle for operating said slide, a coin-chute, a tiltable coin-receiver and a goods-ejector operable from said handle to eject a piece of
75 the goods after a coin has entered said receiver, said slide comprising a rear slide-plate (44) connected with said handle and a front slide portion to be engaged by said rear plate during the outward movement of
80 said handle and comprising a downwardly extending plate (41) having slots 63, combined with a pivoted plate 60 connected with said handle and having a forwardly projecting arm 62 in line with said handle and forwardly
85 projecting arms 61 at the sides thereof and in line with said slots, and means for locking said plate 41 until the plate 44 and said handle have moved outwardly to a predetermined extent; substantially as set
90 forth.

13. In a coin-controlled vending machine having a coin-slot plate and a tray for the goods to be sold, a slide below said plate, a
95 handle for operating said slide, a coin-chute, a tiltable coin-receiver and a goods-ejector operable from said handle to eject a piece of the goods after a coin has entered said receiver, said slide comprising a rear slide plate (44) connected with said handle and a
100 front slide portion comprising a front plate 41 and sides 47 which are recessed to receive side arms of said plate 44 with freedom for lost motion, and said front plate having a slot 63 in line with the coin-slot, combined
105 with pivoted dogs 56 for holding said front slide portion normally stationary, means on said rear plate 44 for freeing said dogs after said rear plate has moved forwardly a definite distance and both slide portions are to
110 move together, and a pivoted plate 60 connected with said handle and having a forwardly projecting stop-arm 62 and a forwardly projecting arm 61 in line with said slot 63, said stop arm being idle except when
115 the plate 60 is turned on its pivot by its arm 62 moving against an obstruction extending across the slot 63; substantially as set forth.

14. In a coin-controlled vending machine having a coin-slot plate and a tray for the
120 goods to be sold, a slide below said plate, a handle for operating the slide, a pivoted goods-ejector carried by said slide, a coin-chute, a tiltable coin-receiver to receive the coin from said chute and become thereby
125 tilted in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods sold, and a rearwardly ex- 130

tending arm 46 carried by said slide for preventing the said ejector from shifting laterally, said ejector being formed of two vertical arms connected together at their lower
5 ends and said arm 46 being disposed between said vertical arms; substantially as set forth.
Signed at New York city, in the county

of New York and State of New York, this
17th day of February A. D. 1909.

ELIJAH F. SPAULDING.

Witnesses:

ARTHUR MARION,
CHAS. C. GILL.