

(No Model.)

4 Sheets—Sheet 1.

J. P. BERETTA. COIN ACTUATED VENDING MACHINE.

No. 527,930.

Patented Oct. 23, 1894.

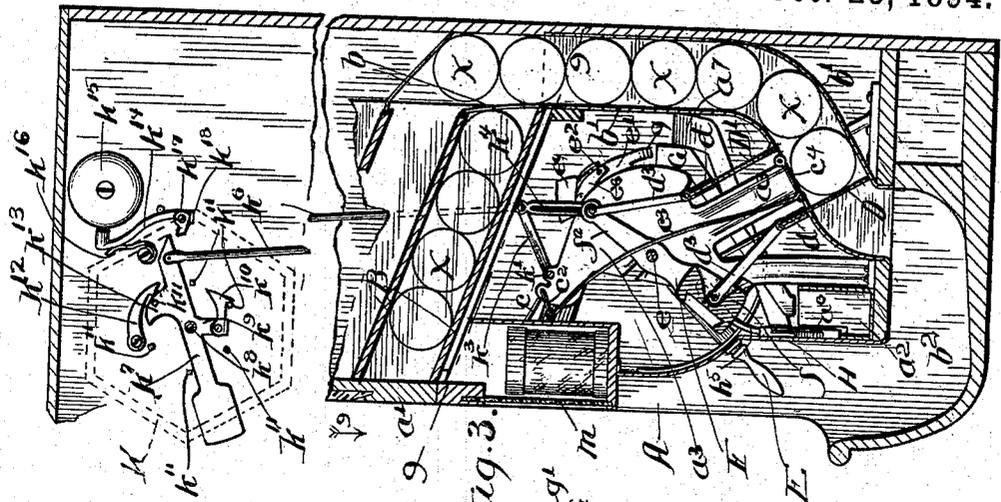


Fig. 3.

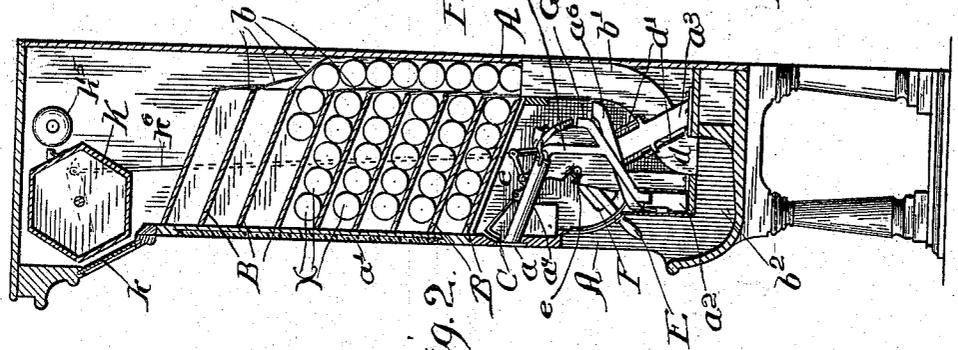


Fig. 2.

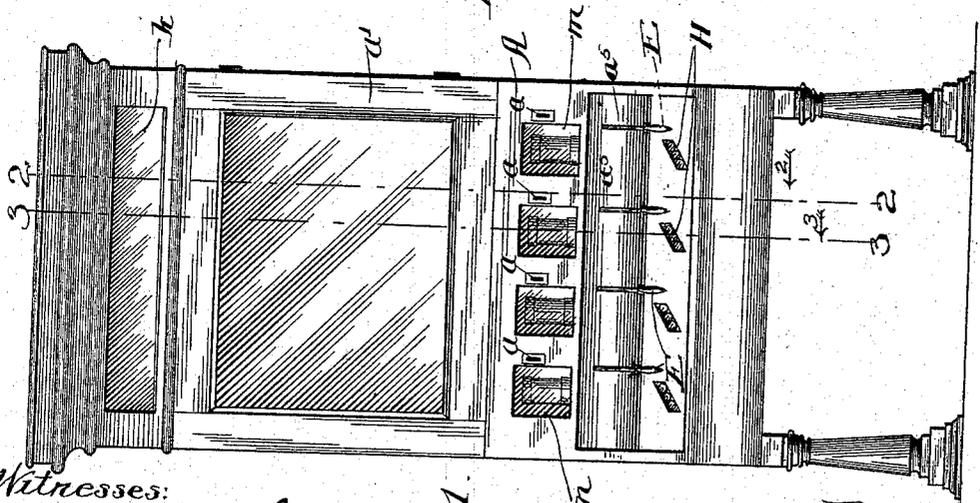


Fig. 1.

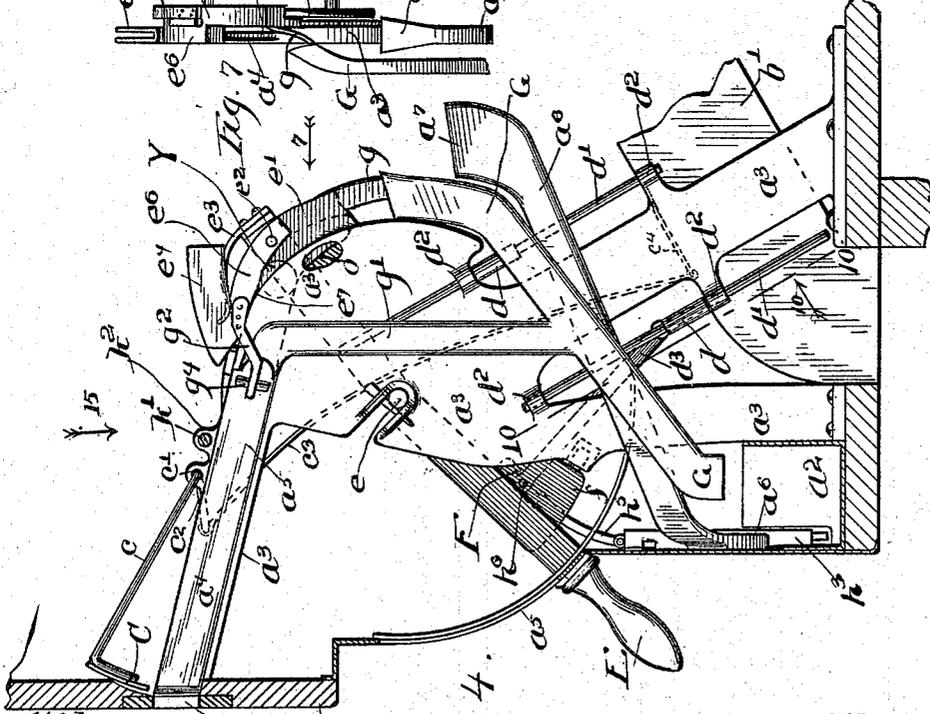
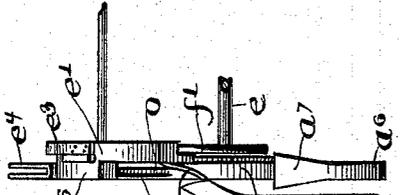
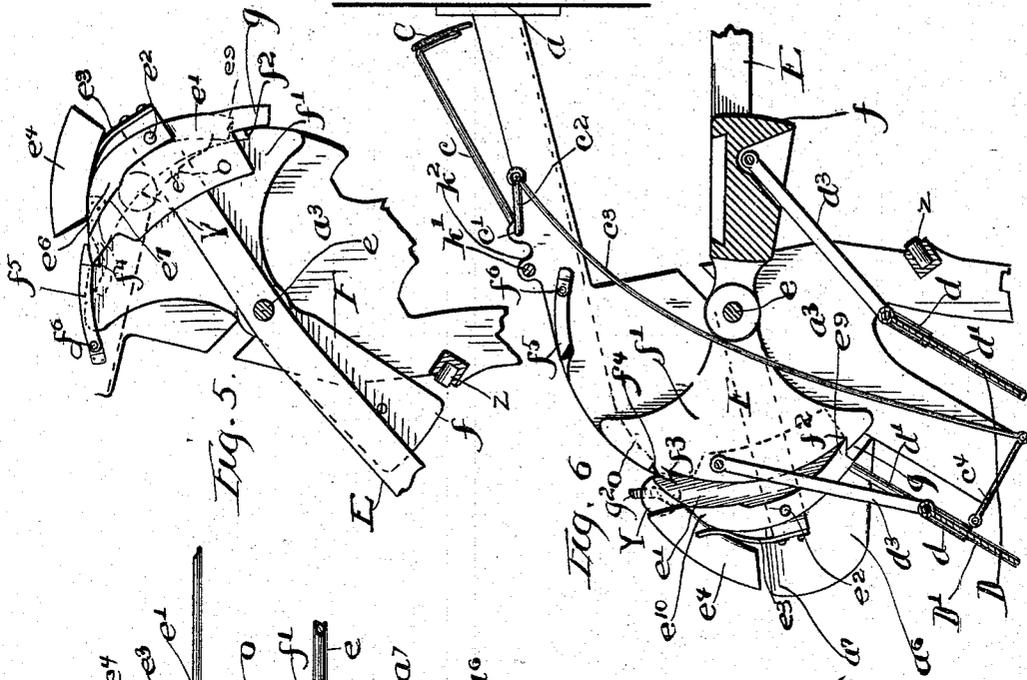
Witnesses:
Charles O. Sherway
J. H. Ebbesen

Inventor:
Joseph P. Beretta,
 by *M. S. Mueser* Attorney

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Witnesses:
 Charles Sherwin
 A. J. Hansen

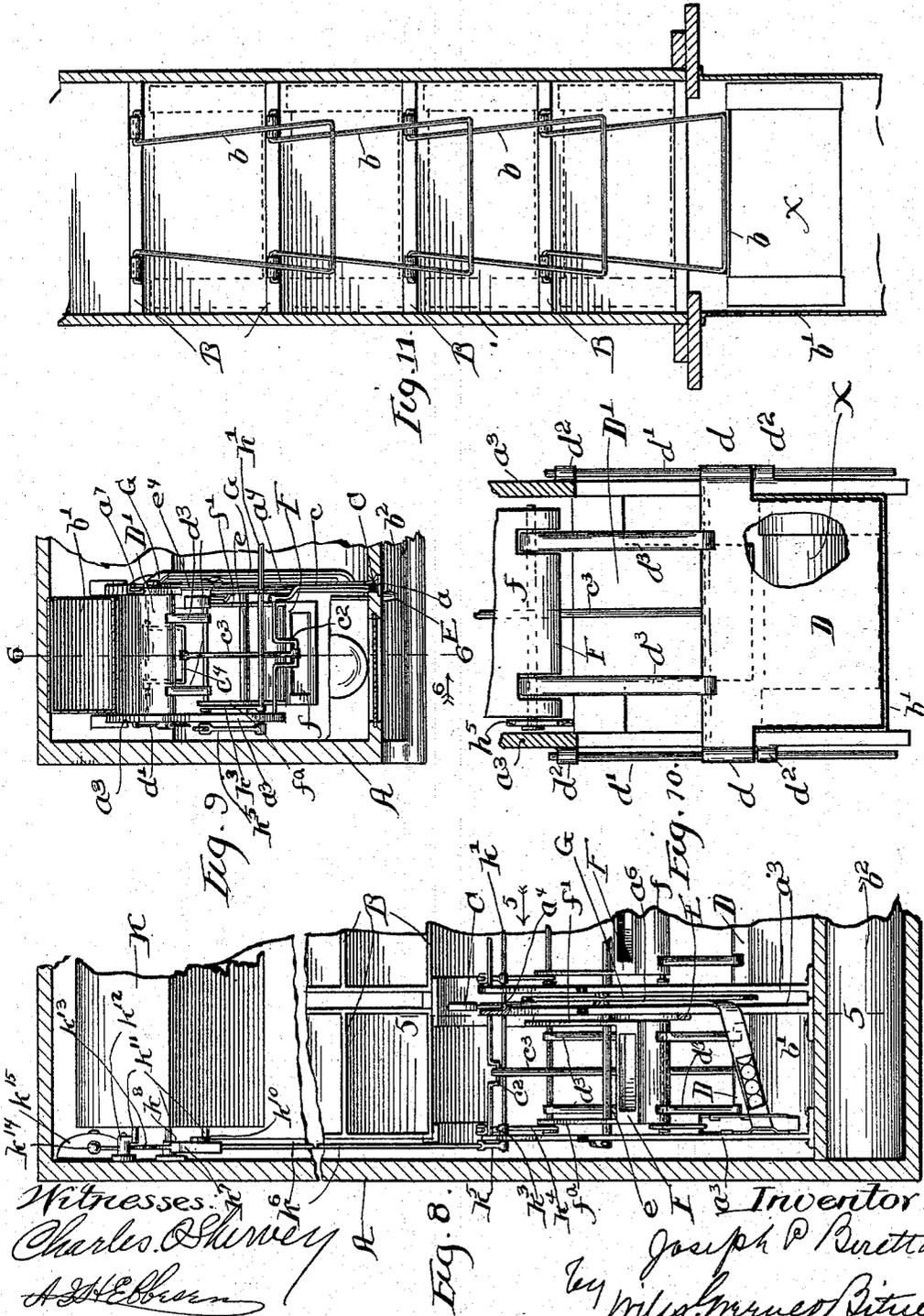
Fig. 4.

Inventor:
 Joseph P. Beretta,
 by Miles & Moore, Boston
 Attys.

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Witnesses:
 Charles Sherway
 A. H. Elburn

Inventor:
 Joseph P. Beretta
 by Miles Amner Pitner
 atty

UNITED STATES PATENT OFFICE.

JOSEPH P. BERETTA, OF CHICAGO, ILLINOIS.

COIN-ACTUATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,930, dated October 23, 1894.

Application filed April 25, 1894. Serial No. 508,927. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. BERETTA, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Actuated Vending-Machines, of which the following is a specification.

My invention relates to a certain new and improved device for the delivery of articles of merchandise to the public upon the placing of a proper coin in an opening adapted to the reception thereof, and the operation of a suitable handle, conveniently located and extending outside of the casing of the machine.

The invention consists in certain improvements pointed out in the claims appended hereto and embodied in the preferred construction described below.

Said construction consists in its preferred form, first, of a suitable casing containing a coin-receiving opening and a money box to retain the coins until taken up by the collector; second, of a storage receptacle adapted to contain a supply of the goods to be sold, and provided with auxiliary devices adapted to present the separate packages of said goods, one after another, at the delivery opening; third, an automatic gate controlled by the packages of merchandise and adapted to close the coin-receiving opening when the supply is exhausted; fourth, suitably operated delivering devices adapted to discharge said packages one at a time from the delivery opening; fifth, an operating handle provided with coin actuated connecting devices put in operation by the passage of a suitable coin through the same and adapted to operate the delivering devices; sixth, means for disposing of coins of less size than those desired; seventh, means for displaying coins of the proper size to aid in the prevention of fraud by means of counterfeit coins; eighth, means for changing and attracting attention to advertisements by the movement of the operating handle.

The drawings by means of which said preferred construction is illustrated consist of sixteen figures, of which—

Figure 1 is a front elevation of the entire apparatus. Fig. 2 is a vertical transverse section in line 2—2, of Fig. 1 and looking in

the direction of the arrow 2. Fig. 3 is a similar section in line 3—3, of Fig. 1, looking in the direction of the arrow 3, and having certain unimportant and duplicate parts cut away to enable the other parts to be shown on a larger scale. Fig. 4 is an enlargement of a portion of Fig. 2. Fig. 5 is a detail sectional view, the plane of the section being indicated by the line 5—5, in Fig. 8, and looking in the direction of the arrow 5, in the same figure. Fig. 6 is also a detail section in line 6—6, of Fig. 9, and looking in an opposite direction from that of the previous sections as indicated by arrow 6, in the same figure. Fig. 7 is a broken view of certain parts seen in looking at the section shown in Fig. 4 from the arrow 7, of said figure. Fig. 8 is a front elevation of a portion of the machine with the front cover removed. Fig. 9 is an inclined transverse section cut in line 9—9, of Fig. 3; and looking downward as indicated by the arrow 9. Fig. 10 is an inclined section in line 10—10 of Fig. 4 looking in the direction of the arrow 10. Fig. 11 is a rear elevation of certain internal portions of the machine just forward of the rear cover or back thereof. Fig. 12 is an enlarged front elevation of certain devices for displaying the coins to view. Fig. 13 is a similar view showing certain parts in a different position. Fig. 14 is a section of Fig. 12 in line 14—14, looking in the direction of the arrow 14. Fig. 15 is a view looking down upon the parts shown in Fig. 4, as indicated by the arrow 15, and Fig. 16 is a similar view showing the parts in a different position.

The case is lettered A, (see Figs. 1 and 2) and is here shown as large enough to contain a number of duplicate machines for the delivery of as many varieties of merchandise. Said casing contains a series of slots, *a*, one for each machine of just sufficient size to receive the proper coin. A locked and hinged door, *a'*, with mirror in front furnishes access to the main portion of the interior and a locked and sliding drawer extending through the entire width of the casing as shown in section at *a''*, in Fig. 2, is properly located to receive the coins after the same have passed through the operating devices of the different machines.

Within the interior of the casing and just back of the door, *a'*, is a series of shelves,

B, inclined downward and backward and provided at their rear ends with gates, *b*, hinged upon horizontal axes and resting under the influence of gravity each upon the one next below. Behind the shelves, B, sufficient room is left for the passage of the packages of merchandise and at the lowest shelf a trough, *b'*, commences leading to a tray, *b²*, from which the goods can be reached from the outside of the machine.

In filling the machine, the door, *a'*, is opened, the trough, *b'*, is first filled, then the space behind the shelves, B, and afterward the shelves themselves. As these packages, X, are discharged through the gate, D, those from the top shelf roll backward into the vertical passage behind the same, the packages in the other shelves being kept in place by the gates, *b*, which are held shut by the packages, X, which rest against them. The shelves will thus be emptied from the top downward until all the packages are discharged through the gate, D.

A hinged arm, *c⁴*, is located immediately above the lowest package of merchandise in the spout, *b'*, and is arranged to be held upward by the packages in the position seen in Fig. 3, as long as any of the packages remain to be sold. This arm is pivoted at its free end to a curved rod, *c³*, which extends upward and is pivoted to one arm, *c²*, (see Fig. 6) of a bent lever which is pivoted at *c'*, and whose other arm, *c*, carries a shut-off gate, C, adapted, when closed, to prevent the insertion of coins in the slot, *a*. As long as the arm, *c⁴*, is held upward by a package of merchandise, these parts will remain in the positions shown in Figs. 3 and 6. When, however, the last package is discharged all of said parts drop downward under the influence of gravity and the shut-off gate, C, drops in front of the slot, *a*.

The mechanism for delivering the packages, X, one at a time, through the spout, *b'*, consists of a pair of sliding gates D, D'. (See Fig. 3.) These gates are operated by means of links, *d³*, *d³*, pivoted at one end to the gates and at the other end to the opposite sides of the pivoted frame, F, by means of which the two gates are alternately opened and closed cutting out one package of merchandise every time the gate, D, is opened and allowing the next package to advance to said gate every time the gate, D', is opened. Each of these gates is carried by sliding rods, *d'*, (see Figs. 4 and 10,) to which they are connected by means of ears, *d*. The sliding rods are guided in eyes, *d²*, formed upon a bracket, *a³*, secured to the casing.

The bracket, *a³*, extends upward and to the front of the casing where it carries a suitable chute, leading from the slot, *a*, and inclined downward and backward, so that the coins may roll back to the operating devices beyond. An operating handle, E, is pivoted upon a shaft, *e*, and extends out through a slot, *a⁵*, in the front of the casing, the portion

outside of the casing being adapted to be grasped by the hand. The handle extends inward beyond the pivot (see Fig. 5) and carries at its inner end a block, *e'*, pivoted to the handle at *e²*, the handle passing through a slot in the block. A spring, *e³*, is also secured to the inner end of the handle pressing upon the end of the block. Said block carries upon its back a short curved trough, *e⁴*, adapted when in the proper position to act as a continuation of the trough, *a⁴*. The pivoted block, *e'*, has upon one side, namely that shown in Fig. 5, a lug, *e⁶*, having a cam-shaped shoulder, *e⁷*, extending laterally over the inner end of the trough, *a⁴*, as will be seen in Fig. 4, and the bottom of said trough is high enough to stop the proper coin at Y in said figure, resting against said cam-shoulder, *e⁷*, at its starting point. (See Fig. 4.) This shoulder is so shaped with respect to the bottom of said trough at *o* (see Fig. 4) that as the outer end of the handle, E, is lifted, the coin, Y, rolls along the trough and presses upward against the shoulder, *e⁷*, raising and holding the upper end of the pivoted block, *e'*, until the position shown in Fig. 6 is reached, when said shoulder, *e⁷*, has passed completely over the coin and the latter rolls through the trough, *e⁴*, into a tube, *a⁶*, (see Fig. 4) having a flaring mouth, *a⁷*, adapted to receive it. Upon the opposite side of the pivoted block, *e'*, which is shown in Fig. 6, is a second lug extending upon both sides of the pivot to form oppositely pointed pawls, or detents, *e⁹*, *e¹⁰*, and upon the pivot, *e*, which will be seen in Fig. 8 to be a rod of some considerable length, is also pivoted an oscillating frame, F, which, as before stated, is connected to the delivery gates by means of the links, *d³*, and which has upon the side of the pivot, which bears upon the outside gate, D, a weighted portion, *f*. Upon the opposite side of the pivot it has at its respective ends a sector-shaped plate, *f'*, (see Fig. 6) and arm, *f²*. (See Fig. 3.) The convex edge of the plate, *f'*, contains two notches, *f²*, *f³*, adapted to be alternately engaged by the pawls, *e⁹*, *e¹⁰*, and also a third notch, *f⁴*, adapted to be engaged by a gravity pawl, *f⁵*, pivoted at *f⁶*, to the bracket, *a³*.

Both the handle and the oscillating frame are shown in their normal position in Figs. 3 and 4, that is the outer portion of the handle is shown as far down as it will go and the swinging frame has reached its limit of movement under the gravity of the weighted portion, *f*. If the proper coin is placed in the slot, *a*, when the handle is in the position shown in Fig. 4 it will stop at Y. If now the handle be raised slightly as shown in Fig. 5, the coin tilts the pivoted block, *e'*, until the pawl, *e⁹*, enters the notch, *f²*, and, at the same time, the opposite end of the block lifts the pawl, *f⁵*, from the notch, *f⁴*, thus releasing the oscillating frame from the bracket, *a³*, and engaging it with the operating handle. If now the handle be still further raised, the

coin rolling along the shoulder, e^7 , will hold the pawl, e^9 , in place until the limit of the desired motion is reached when the coin rolls onward, the spring, e^8 , releases the pawl, e^9 , and the oscillating frame returns to its normal position because of the weight, f , where it is checked by the rubber bumper, z . (See Fig. 6.) As soon as the handle is released it drops down of its own weight. The raising of the handle thus opens the gate, D , to release the lowest package of merchandise and shuts the gate, D' , to cut off the next, and the return of the oscillating frame closes the gate, D , and opens the gate, D' , to allow the next package to take the place of the one which has just been discharged.

The mechanism above described is complete and sufficient so far as the actuation of the delivery mechanism by the proper coin is concerned. It is, however, desirable that certain auxiliary devices be added to prevent the manipulation of the machine by means of a coin of smaller size than that desired, the insertion of larger coins being prevented by the size of the slot. When the handle is in its most usual position, which is that seen in Fig. 4, there is sufficient space between the shoulder, e^7 , and the bottom of the trough, a^4 , to allow a coin of smaller size to roll beneath said shoulder and a thin plate, g , attached to the pivoted plate, e' , turns said coin to one side into a tube, G , through which it has an unobstructed passage to the money drawer, a^2 . This plate, g , is fastened to the pivoted block, e' , and moves with the latter so as to not be in the way of the lug, e^6 , when the latter is brought downward by the raising of the outside handle. As the shoulder, e^7 , tends to approach the bottom of the trough, a^4 , when the handle is raised, I provide another by-pass to take care of the small coins when the handle is not in the position seen in Fig. 4. To do this I make a portion a^5 , of the trough, a^4 , adjacent to the slot, a , independent of the remainder of the trough and give it a slight lateral tension, so that if unresisted it will swing to one side into register with a tube, g' , (see Fig. 4) leading to the tube, G , the entrance to said tube being sufficient to admit smaller coins, but not those intended to operate the machine. To force this portion, a^5 , of the trough, a^4 , into line with the remainder of said trough when the handle is in the position seen in Fig. 4, I provide an arm, g^2 , best seen in Figs. 4, 15, and 16, said arm having a cam-surface, g^3 , and the portion, a^5 , of the trough being provided with a lug, g^4 , adapted to slide under said cam-surface until the two portions of the trough, a^4 , are brought into line. This occurs every time the handle is raised and as soon as it is lowered, the portion, a^5 , of the trough, a^4 , being released springs to one side into register with the by-pass, g' .

As it is sometimes found that machines of this class are defrauded by means of metal disks of the same size and shape as the de-

sired coins I have provided a check upon this sort of manipulation by adding to my machine means for exposing to view a few of the coins last inserted which have actuated the merchandise delivering apparatus. To do this I have carried the trough, a^6 , to the front of the casing, as seen in Fig. 4, and inserted in it a glass window, H . Seen in Fig. 1, and shown in the enlarged views in Figs. 12 and 13. At the end of this glass window are two gates, h, h' , carried by a sliding plate, h^2 , guided in a bracket, h^3 , secured to the casing. The plate is moved back and forth by means of a link, h^5 , pivoted at one end to the plate, h^2 , and engaging at the other end with a pin, h^6 , by means of a slot, h^7 , to allow of a certain amount of lost motion because of the greater range of movement of the oscillating frame, F , which carries the pin, h^6 . The two gates, h, h' , in Fig. 12, are arranged so that the former closes the tube, a^6 , when the sliding plate, h^2 , is down, as seen in Fig. 12, and the other closes said trough, at a distance beyond sufficient to admit a single coin, when said plate is raised. As the plate is moved with the frame, F , and as the latter operates the delivery mechanism it will be seen that one of the coins in the tube, a^6 , will be passed through the gates, h, h' , every time a package of merchandise is passed through the gates, D, D' , so that if a certain number of coins be placed in the tube, a^6 , to start with the same number will always be in sight through the window, H , and the coins in view will be those last inserted in the slot. Thus an attendant by passing the machines can see at once whether any fraud has been attempted and such fraud will also be evident to the public, which facts it is thought will act as a check upon persons otherwise inclined to operate these machines by means of disks of metal made of the proper size and shape.

In the upper portion of the case, A , is journaled a drum, K , upon the surface of which is displayed a series of advertisements and a window, k , is provided in the casing adapted to furnish a view of one of these advertisements as the same is brought in front of the window by the rotation of the drum. Just above the troughs, a^4 , a rod extends from side to side of the entire machine, said rod being seen in side elevation at k' , in Fig. 8 and in cross-section at k' in Fig. 4. It is journaled in ears, k^2 , upon the brackets, a^3 , and has a series of arms, k^3 , (see Fig. 3) carrying at their ends a series of slotted links, k^4 , pivoted to said arms and engaging by means of the slots one of the cross-rods of the oscillating frames, F . At one end of the machine the rod, k' , carries an arm or crank, k^5 , (see Figs. 8 and 9) connected by means of a link, k^6 , with a lever, k^7 , pivoted at one end to the link and weighted at the other end. Said lever is fulcrumed upon the spindle, k^8 , of the drum, K , and has a side arm, k^9 , which carries a gravity pawl, k^{10} , adapted to engage with pins, k^{11} , extending from the end of the drum to move

said drum in the proper direction to bring the advertisement into view before the window, k . A second gravity pawl k^{12} , is pivoted to the casing and adapted to engage with the same
 5 pins to prevent rotation of the drum and a cam-shoulder, k^{13} , is provided upon the lever, k^7 , in the proper position to raise the pawl, k^{12} , from the pins, k^{11} , when the lever is tilted for the purpose of moving the drum. There
 10 is pivoted to the casing a hammer, k^{14} , and a bell, k^{15} , is secured to said casing in position to be struck by the hammer which is thrown against said bell by means of a spring, k^{16} .
 15 A pawl, k^{17} , is pivoted to the hammer arm and extends out into the path of the free end of the lever, k^7 . Said pawl engages with the hammer arm when it is forced downward by means of a stop, k^{18} , but can be moved freely in the opposite direction. Whenever one of
 20 the oscillating frames, F , is tilted by the insertion of a proper coin and the raising of the operating handle, said frame draws down the link, k^4 , to which it is attached, turning the cross-rod, k' , upon its axis and lowering
 25 all of the other links k^4 , which, however, do not disturb the other oscillating frames F by reason of the slots in the links, k^4 . As said cross-rod is turned, the lever, k^7 , at the top of the casing is tilted ringing the bell and
 30 turning the roller sufficiently to change the advertisement in view, the attention of the operator being called by the bell to the new advertisement as soon as it comes in sight.

In the front of the casing and at one side of
 35 each slot I place a glass window, m , and behind said window in a glass jar I display a sample of the goods to be procured by the insertion of the proper coin in the adjacent slot.

In the above description I have endeavored
 40 to explain specifically the exact construction and arrangement of the different portions of my invention to enable the same to be thoroughly and easily understood by persons skilled in the art. I do not, however, intend
 45 to thereby limit myself to the exact details, but will proceed to point out in the following claims the different features and combinations thereof, which I consider essential to the embodiment of said invention.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a suitable casing containing the necessary auxiliary devices, of mechanism for delivering a definite quantity of
 55 merchandise from the interior of the casing, a coin chute, an operating handle adapted to be grasped by the hand and a coin-operated pawl adapted to engage the delivering mechanism and pivoted to the handle above the
 60 coin chute in position to be raised by said coin and thereby engaged with the delivering mechanism; substantially as described.

2. In a coin actuated vending machine, the
 65 combination with a suitable casing containing a receptacle for merchandise and suitable delivering mechanism, of a pivoted operating

handle extending within the casing, a block pivoted upon said handle and bearing a pawl adapted when in the proper position to en-
 70 gage and operate the delivering mechanism, a coin chute having a bottom eccentric with relation to the handle pivot and a lug upon the block extending over the chute and having a cam-surface oppositely arranged to the
 75 eccentric bottom of said chute, containing a shoulder adapted to engage the proper coin between it and the eccentric bottom of the chute and thereby throw the pawl upon the
 80 pivoted block into engagement with the delivering mechanism, and a surface adjacent to said shoulder adapted to roll along the top of the coin and retain said pawl in engagement until the action of the delivering mechanism is completed; substantially as
 85 described.

3. In a device of the class described the combination with the casing having suitable coin-actuated delivering devices and an operating handle, of a coin chute and a by-pass,
 90 said coin chute having a movable portion provided with a spring adapted to put it into register with the by-pass and means connected with the operating handle for forcing
 95 said movable portion into register with the remainder of the chute when said operating handle is in proper position for the insertion of a coin in the machine; substantially as described.

4. The combination in a coin actuated vending
 100 machine with a suitable casing containing a receptacle for merchandise, a coin chute, an operating handle and coin actuated delivering mechanism adapted to be engaged with said handle by the passage of the proper
 105 coin, of a by-pass for smaller coins, and a switch adapted to divert said smaller coins into said by-pass, said switch being connected with the operating handle, whereby it may be removed from its working position by the
 110 movement of the handle; substantially as described.

5. In a coin-actuated vending machine, the combination with a suitable casing containing a merchandise receptacle and coin-act-
 115 uated mechanism for delivering said merchandise, of a movable advertising surface, a bell adjacent thereto, a hammer adapted to strike the same, connecting devices between said delivery mechanism and the ad-
 120 vertising surface adapted to move said advertising surface and connecting devices between said delivering mechanism and said hammer adapted to operate the latter as each
 125 package of merchandise is discharged from the casing; substantially as described.

In witness whereof I have hereunto set my hand, at Chicago, Illinois, this 21st day of April, 1894.

JOSEPH P. BERETTA.

Witnesses:

CHARLES O. SHERVEY,
 A. I. H. EBBESEN.