W. R. WILLIAMS.

VENDING MACHINE.

APPLICATION FILED APR. 4, 1910.

979,625.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

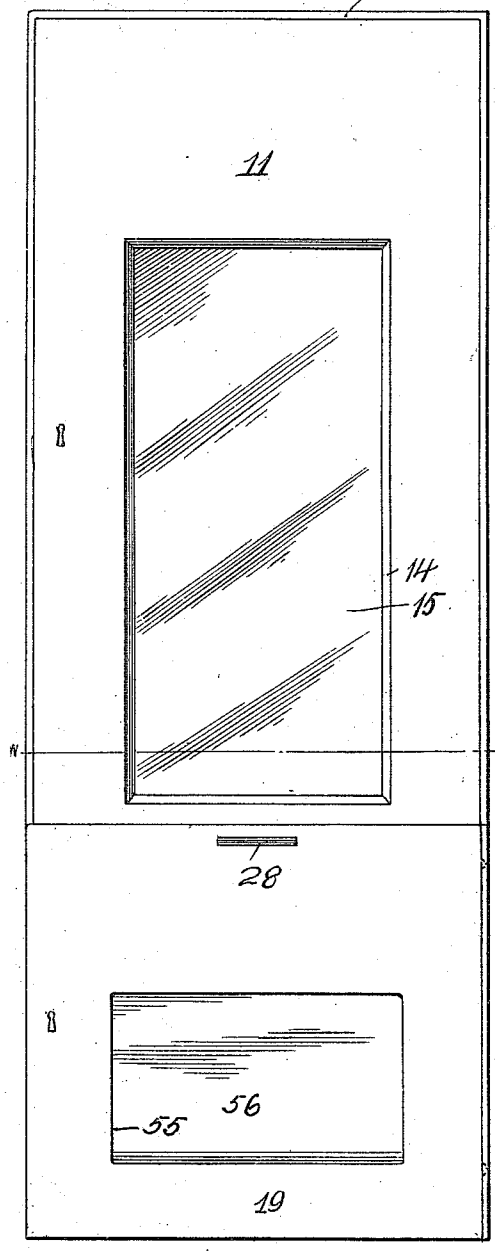
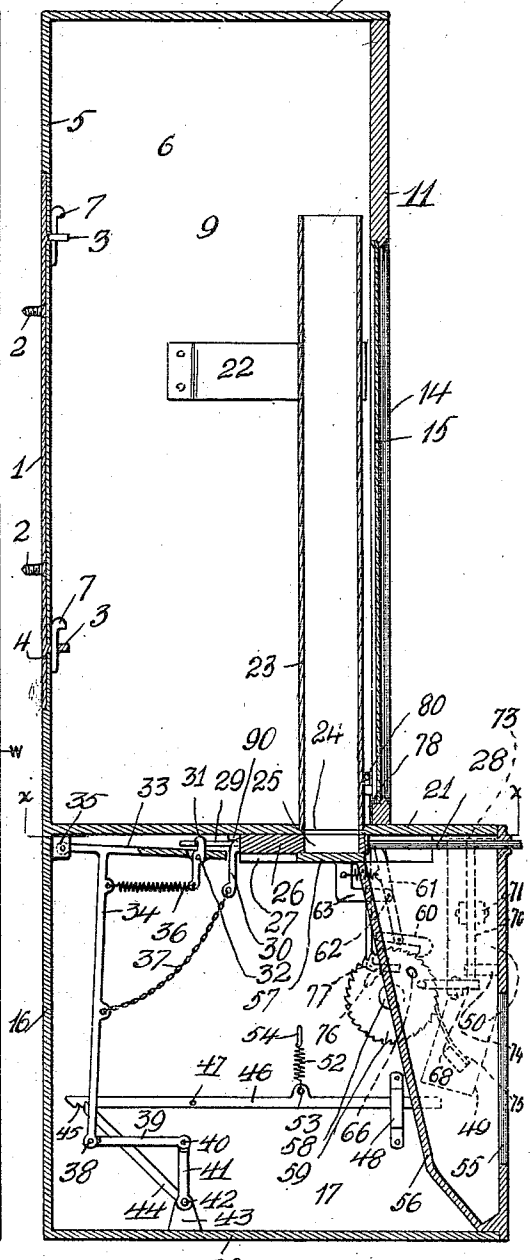


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

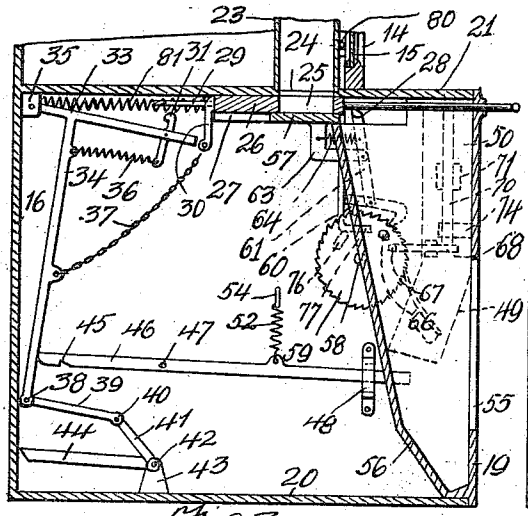

Fig. 3.

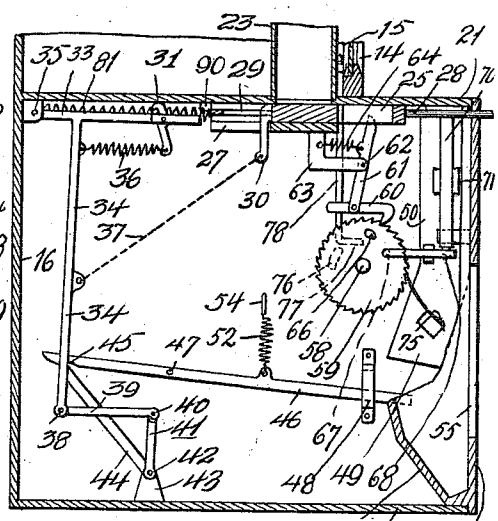

Fig. 4.

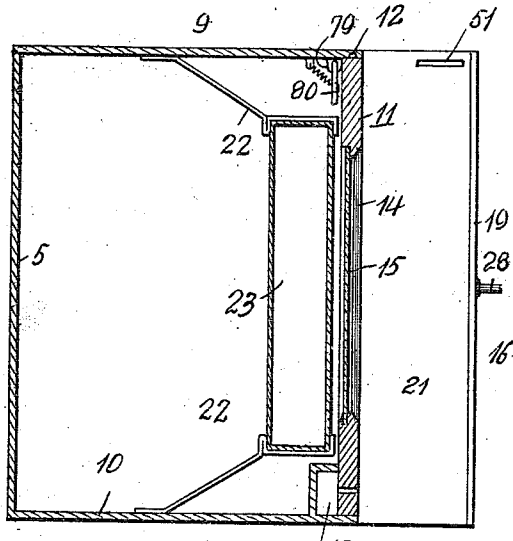

Fig. 5.

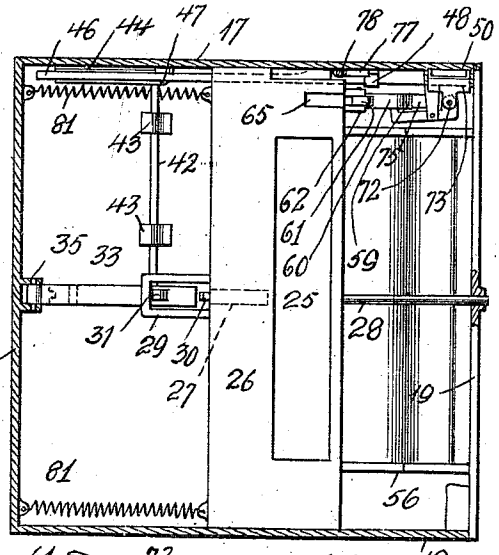

Fig. 6.

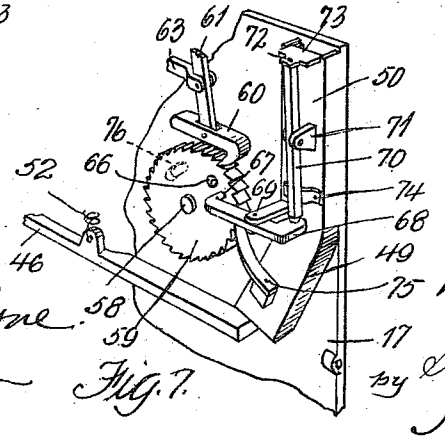

Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM R. WILLIAMS, OF PUNXSUTAWNEY, PENNSYLVANIA.

VENDING-MACHINE.

979,625. Specification of Letters Patent. Patented Dec. 27, 1910.

Application filed April 4, 1910. Serial No. 553,354.

To all whom it may concern:

Be it known that I, WILLIAM R. WILLIAMS, a citizen of the United States of America, residing at Punxsutawney, in the county of Jefferson and State of Pennsylvania, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to vending machines, and the objects of my invention are to provide a machine for dispensing small packages or articles, and to provide a novel vending mechanism that will be positive in its action and free from injury by ordinary use.

Other objects of my invention are to provide a machine of the above type wherein a novel coin controlling mechanism is employed, and to accomplish the above results by a machine that is simple in construction, durable and efficient for dispensing small articles in stores, hotels, railway stations and public places.

I attain the above objects by a machine having, *inter alia*, a delivery slide and a coin chute, and in connection with the delivery slide novel means are employed for locking the same whereby it cannot be actuated without a coin being deposited in the chute, and in connection with the chute means are employed for closing the same and preventing coins from being deposited in the chute when the contents of the machine are exhausted.

The invention will be hereinafter more fully considered and then claimed, and reference will now be had to the drawings forming part of this specification, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof can be varied or changed, as to the size, shape and manner of assemblage without departing from the spirit and scope of the invention.

In the drawings:—Figure 1 is a front elevation of the machine, Fig. 2 is a vertical cross sectional view of the machine, Fig. 3 is a similar view of a portion of the machine showing the mechanism partially actuated and in the first position it assumes prior to delivering matter from the machine, Fig. 4 is a similar view showing the mechanism further actuated to deliver matter from the machine, Fig. 5 is a horizontal sectional view taken on the line W—W of Fig. 1, Fig. 6 is a similar view taken on the line X—X of Fig. 2, and Fig. 7 is a perspective view of a portion of the mechanism of the vending machine.

In the accompanying drawings the reference numeral 1 denotes a rectangular plate adapted to be secured to a wall or similar support 2. The front side of the plate is provided with apertured lugs 3 adapted to extend through openings 4 provided therefor in the rear wall 5 of a cabinet 6. Pins 7 are adapted to extend through the apertured lugs 3 and retain the rear wall of the cabinet in engagement with the plate 1. The cabinet 6 comprises a top plate 8, side walls 9 and 10 and a detachable door 11, the door 11 having one of the vertical edges thereof provided with pins 12 adapted to engage in the wall 9, while the opposite edge of the door is adapted to be held in engagement with the wall 10 by a conventional form of lock 13, carried by the inner side of the wall 10. The door 11 is provided with an opening 14 closed by a transparent plate or mirror 15.

The lower end of the cabinet 6 is formed integral with a rectangular structure or box comprising a rear wall 16, side walls 17 and 18, a detachable front wall 19, a bottom plate 20 and a top plate 21, said top plate forming a partition between the cabinet and the box, while the vertical walls 16, 17 and 18 aline with the walls 5, 9 and 10 of the cabinet, with the walls 17 and 18 projecting beyond the walls 9 and 10 to support the front edges of the top plate 21.

The inner sides of the walls 9 and 10 of the cabinet 6 are provided with oppositely disposed clamping arms 22 holding the side edges of a casing 23 adapted to contain the articles or matter to be vended by the machine. The lower end of the casing 23 is supported by the top plate 21 and communicates with an oblong opening 24 formed in said top plate. This opening 24 is adapted to communicate with an oblong slot 25 formed in a delivery slide 26 having the ends thereof supported by rails 27, carried by the inner sides of the walls 17 and 18. The front side of the delivery slide 26 is connected to a plunger 28 extending through the detachable front wall 19 of the box, and the rear edge of the delivery slide intermediate the ends thereof is provided with a yoke 29 and a depending arm 30.

Normally engaging the yoke 29 is a

toothed pawl 31 pivotally supported, as at 32 in an opening provided therefor in one end of the head 33 of a lever 34, the opposite end of said head being pivotally mounted between apertured lugs 35 carried by the rear wall 16 of the box directly beneath the top plate 21. The pawl 31 is connected by a retractile spring 36 to the lever 34, and this lever intermediate the ends thereof is connected by a chain or cable 37 to the depending arm 30 of the delivery slide 26. The lower end of the lever 34 is pivotally connected, as at 38 to a link 39 and this link is pivotally connected, as at 40 to the crank 41 of a shaft 42, journaled in bearings 43 carried by the bottom plate 20 of the box. The shaft extends in proximity to the side wall 17 and is provided with another crank 44. This crank is adapted to engage the toothed end 45 of an arm 46 pivotally mounted, as at 47 upon the inner side of the wall 17. The opposite end of the arm 46 extends through a strap 48 and protrudes under the lower angular end 49 of a coin chute 50, the upper end of this chute being in communication with a coin slot 51 formed in the top plate 21 adjacent to the side wall 17 and the detachable front wall 19. The arm 46 is normally held in an elevated position by a retractile spring 52 connected to a lug 53 of the arm 46 and a staple 54 mounted in the side wall 17.

The detachable front wall 19 is provided with a hand opening 55 and an inwardly projecting pocket 56 of less width than the detachable front wall 19, said pocket having the rear wall thereof engaging the forward edge of a closure strip 57, carried by the rails 27 and closing the lower end of the slot 25 when said slot is in communication with the opening 24 of the top plate 21; the pocket 56 receiving matter from the slot 25 when the delivery slide 26 is pulled outwardly and said slot placed in communication with said pocket.

The side wall 17 is provided with an inwardly projecting pin 58 and revolubly mounted upon said pin is a ratchet wheel 59. Engaging this ratchet wheel is a pivoted gravity pawl 60, carried by an arm 61 pivotally mounted, as at 62 in a hanger 63, carried by the closure strip 57. The arm 61 is connected by a retractile spring 64 to the hanger 63, and the upper end of the arm extends into a slot 65 provided therefor at one end of the delivery slide 26. The outer side of the ratchet wheel 59 is provided with a beveled recess 66 adapted to receive the toothed end 67 of a horizontal lever 68 pivotally connected to a bracket 69, carried by the coin chute 50. The opposite end of the lever is loosely connected to a beam 70 fulcrumed in bearings 71, carried by the coin chute 50, the upper end of said beam being pivotally connected, as at 72 to a slide 73 adapted to close the upper end of the chute 50. A spring 74 is secured to the chute 50 to bear against the beam 70 and close the slide 73 when the toothed end 67 of the lever 68 recedes into the beveled recess 66. The chute 50 is provided with a resilient dog 75 adapted to engage the ratchet wheel 59 and prevent a rearward rotation of said wheel. The inner side of the ratchet wheel 59 is provided with a segment-shaped recess 76 and adapted to engage in said recess and shift the ratchet wheel 59 is the lower angular end 77 of a rod 78 extending upwardly through the top plate 21 and through a bearing 79, carried by the inner side of the wall 9, said rod having the upper end thereof provided with a handle 80.

To restore the delivery slide to its normal position, the rear edge thereof is connected by retractile springs 81 to the rear wall 16 of the box.

Operation:—The mechanism in its normal position is best shown in Fig. 2 of the drawings, it being assumed that the casing 23 contains packages or articles to be dispensed by the machine. When a coin is deposited in the slot 51 and passes downwardly through the chute 50, it impinges the end of the arm 46 and is held in suspension, but when contacting with the arm 46, this arm is moved sufficiently to release the crank 44 of the shaft 42 and by gravity this crank shaft is moved, together with the lever 34, said lever moving the pivoted pawl 31 out of engagement with the yoke 29. The mechanism in this position is best shown in Fig. 3 of the drawings. When the plunger 28 is pulled outwardly, the package or article retained within the slot 25 by the strip 57 is carried forwardly and deposited in the pocket 56. This forward movement of the delivery slide 26 moves the arm 61 and the ratchet wheel 59 is partially rotated. The teeth upon the ratchet wheel 59 correspond in number to the packages or articles contained within the casing 23, and when the packages or articles have been exhausted, the toothed end 67 of the lever 68 is adapted to recede into the beveled recess 66 of the ratchet wheel, and through the medium of the fulcrum beam 70 and the slide 73 closes the upper end of the chute 50 whereby coins cannot be deposited in the chute 50 until the casing 23 has been refilled. This is accomplished by removing the detachable door 11, and when it is desired to obtain the coins deposited in the machine, the front wall 19 of the box is removed. After the casing 23 has been refilled the upper end of the rod 78 is swung in a horizontal plane, whereby the lower end 77 thereof will engage in the recess 76 of the ratchet wheel 59 and shift said ratchet wheel sufficiently to carry the beveled recess 66 past the toothed end 67 of the lever 68, the beveled

portion of said recess forcing the toothed end 67 outwardly and thereby moving the slide 73 to open the upper end of the chute 50. When the delivery slide 26 is moved forwardly, the chain or cable 37 immediately restores the lever 34 to its normal position, whereby the crank 44 of the shaft 42 will engage the arm 46 and move said arm to release a coin from the chute 50. When the lever 34 is restored to its normal position the pivoted pawl 31 is immediately placed in the path of the yoke 29, and when the plunger 28 is released and the yoke 29 impinges the pivoted pawl 31, said pawl recedes until the yoke has assumed its normal position, when the spring 36 restores said pawl whereby it will grip the yoke and prevent the plunger 28 from being pulled outwardly until a coin has been deposited in the chute 50.

The vending machine can be constructed of wood or metal, it being preferable to make the operating mechanism of metal to withstand the numerous operations of the machine.

As a precaution against the delivery slide 26 moving too far inwardly when released, the top plate 21 is provided with a depending lug 90.

Having now described my invention what I claim as new, is:—

1. In a vending machine, a cabinet, a box at the lower end of said cabinet, a casing located within said cabinet and adapted to contain matter, said box having a pocket arranged therein, a normally locked delivery slide arranged within said box and adapted to transfer matter from said casing to said pocket, said slide provided with an opening, rails within said box for said slide, a plunger connecting with said delivery slide for shifting said slide when released, a yoke at the rear end of the slide and having a depending arm, means extending through said yoke for locking the slide from movement, means connected to said locking means for shifting it to release the slide, connections between the arms of the yoke and the shifting means for the locking means for restoring said shiftable means to normal position when the slide is moved forward, and a resilient element connected with the slide for moving it rearwardly.

2. A vending machine comprising a cabinet, a box at the lower end of the cabinet, a normally locked delivery slide arranged within said box and provided with an opening adapted to communicate with said casing, a plunger connected with said slide for manually shifting it when the slide is released, a resilient element connected to the slide for automatically returning it to normal position, a yoke projecting rearwardly from the slide, a pivoted spring-controlled element adapted to normally engage the yoke for maintaining the slide locked, means for shifting said pivoted element to release the slide, and a connection between the slide and said means operated on a forward movement of the slide for positioning the said element in the path of the yoke to engage the latter when the slide moves inwardly.

3. A vending machine comprising a normally locked apertured delivery slide adapted to communicate with a reservoir and when moved outwardly deliver an article from a machine, a plunger connected to the forward end of the slide for shifting the slide outwardly when the latter is released, a resilient element connected to the rear end of the slide for automatically returning the same to normal position, a yoke projecting rearwardly from the slide, a spring-controlled pivoted member normally extending through said yoke for maintaining the slide locked, means for shifting said element to release the slide, and a connection between the slide and said means operated on a forward movement of the slide for positioning the said member in the path of the yoke to engage the latter when the slide moves rearwardly whereby said member as the yoke passes over it will extend through the yoke and lock the slide.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM R. WILLIAMS.

Witnesses:

U. D. Wolf,

N. D. Corey.