No. 831,082. PATENTED SEPT. 18, 1906.

W. H. LARAWAY.

VENDING MACHINE.

APPLICATION FILED AUG. 28, 1905.

2 SHEETS—SHEET 1.

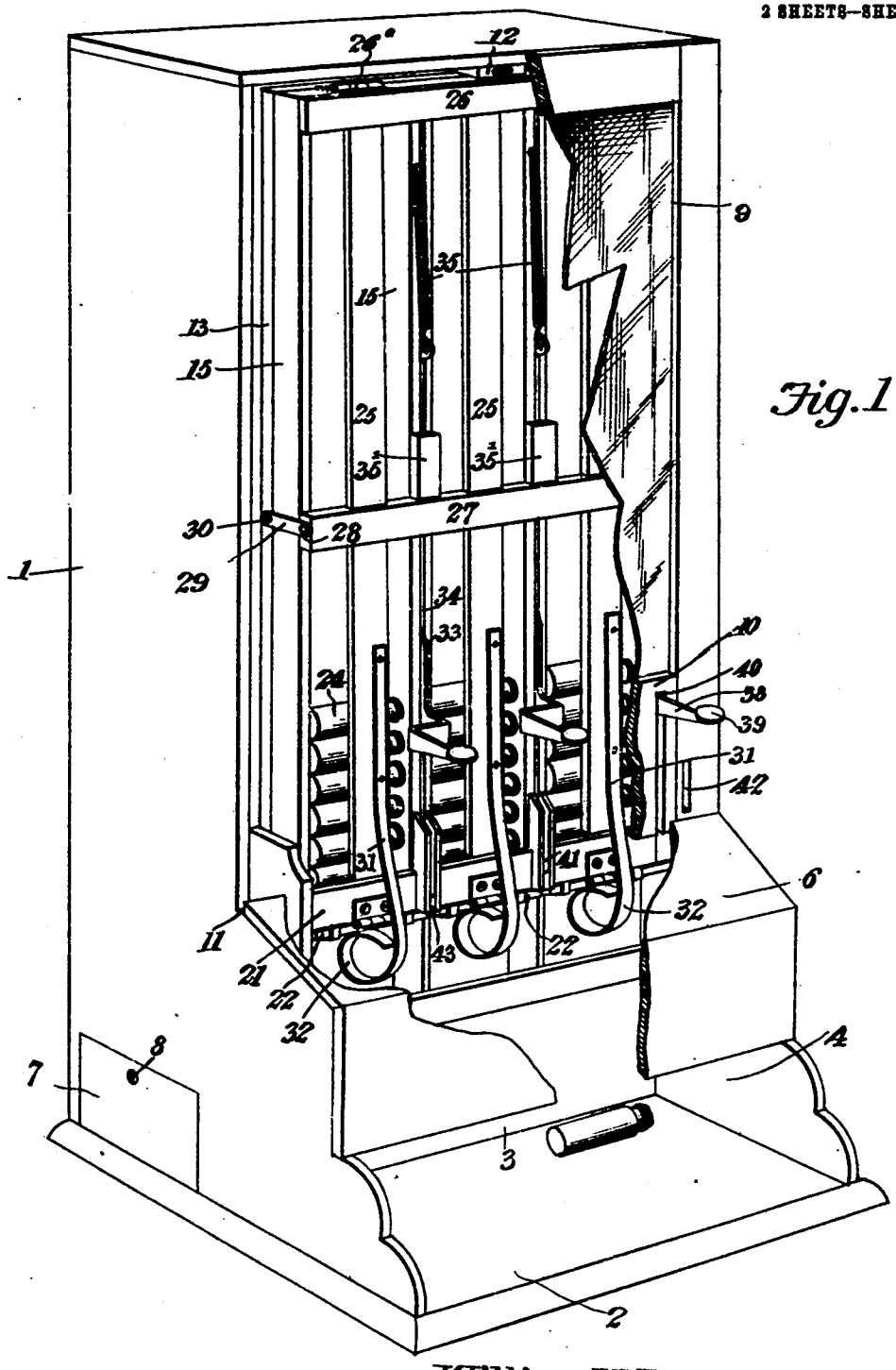


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

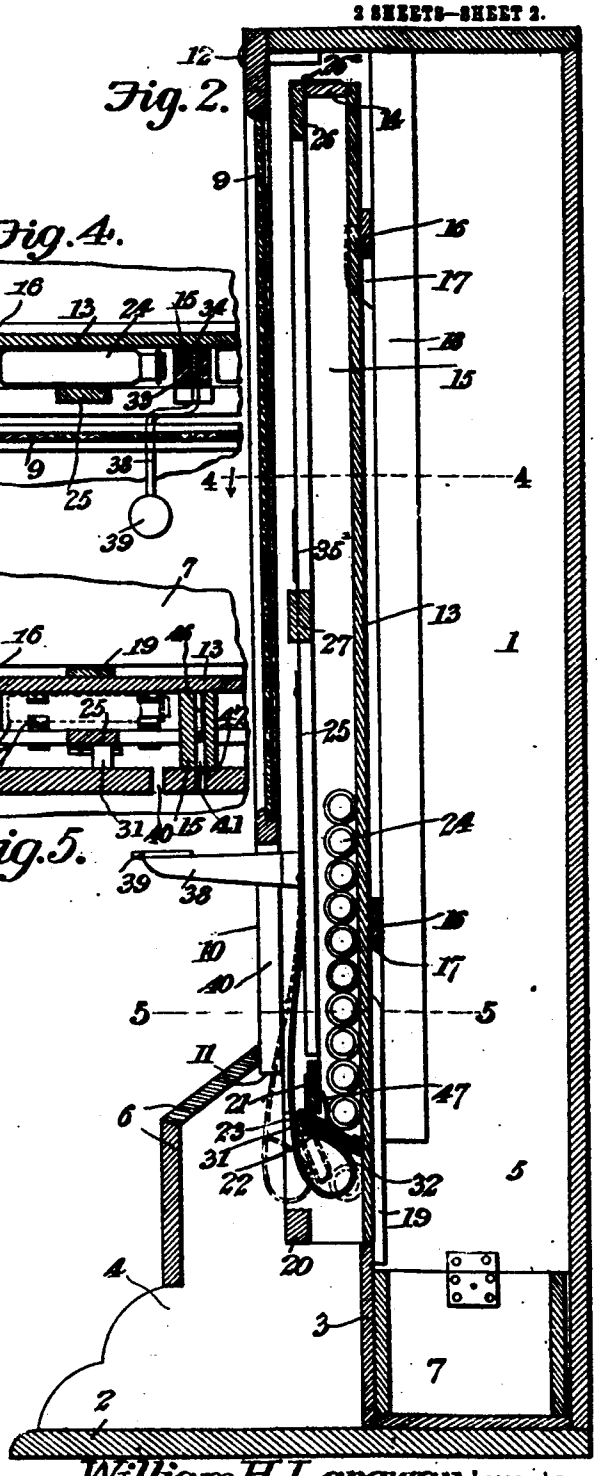


Fig. 4.

Fig. 3.

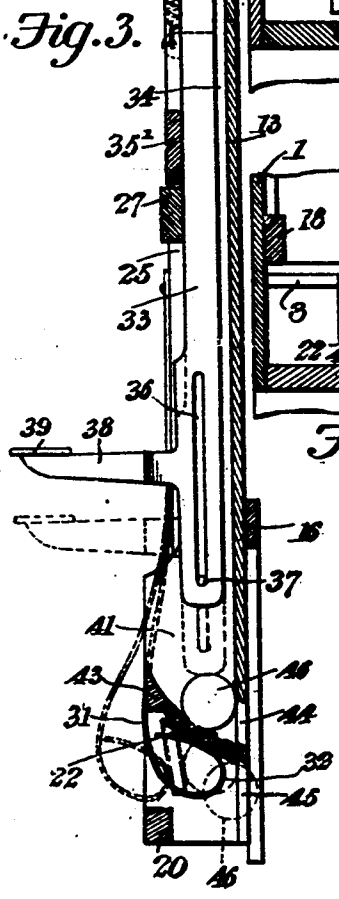


Fig. 5.

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VENDING-MACHINE.

No. 831,082. Specification of Letters Patent. Patented Sept. 18, 1906.

Application filed August 28, 1905. Serial No. 276,107.

To all whom it may concern:

Be it known that I, WILLIAM H. LARAWAY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Vending-Machine, of which the following is a specification.

This invention relates to coin-controlled vending-machines, and has for its object to materially simplify the mechanism of such machines and particularly adapt the same for successively discharging small bottles or vials containing any preferred commodity—for instance, cologne, toilet-water, and the like.

A further object of the invention is to enable convenient access to the compartments of the vending-machine for filling the same with the bottles or packages and at the same time to have the compartments closed against unauthorized access thereto.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a vending-machine embodying the features of the present invention, the front of the case being broken away to show the interior mechanism thereof. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a detail longitudinal sectional view showing the coin-controlled actuating mechanism. Fig. 4 is a detail sectional view on the line 4 4 of Fig. 2. Fig. 5 is a similar view on the line 5 5 of Fig. 2.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

For the housing of the operating parts of the present device there is a suitable upright case 1, preferably of rectangular form, having a laterally-enlarged base portion 2 projecting in front of the upper portion of the case to form a stable support therefor. Within the base portion there is a transverse partition 3, dividing the base into front and rear compartments 4 and 5, the upper portion of the compartment 4 being closed by the walls 6, while its lower portion is open to give access thereto for removing the bottles or other packages when discharged from the upper portion of the case into the compartment 4. In rear of the partition 3 there is a money box or drawer 7, which is removably through an opening in one of the sides of the case and is provided with a suitable key-controlled lock 8. The upper portion of the front of the case is closed by a removable glass front 9, the lower end bar 10 of the frame of which fits in a notch or seat 11, formed in the top edge of each of the projected base portions of the sides of the case, while the upper end bar of the glass frame is provided with a suitable key-controlled lock 12, whereby unauthorized removal of the glass frame is prevented.

The vending apparatus is contained within the upper portion of the case and is carried by means of a frame made up of a back 13, an upper end bar 14 secured thereto, and a longitudinal series of partitions 15, secured to the front side of the back and producing a series of upright compartments for containing the articles to be vended. Upper and lower cross-bars 16 are secured to the rear face of the back 13 and project beyond the same, so as to abut the sides of the case, as shown in Fig. 4 of the drawings, to prevent edgewise looseness of the frame. The projected ends of the cross-bars 16 rest in upper and lower seats or brackets 17, secured to the front edges of upright bars 18, suitably fastened to the sides of the case. At the lower edge of the back 13 are cleats 19, which project below the lower edge of the back and lie against the rear side of the partition 3, so as to prevent forward displacement of the frame. The lower cross-bar 20 connects the lower ends of the sides of the frame and is spaced in front of the back.

At a suitable distance below the bottom of each upright compartment of the frame there is a cross bar or plate 21, which is spaced from the back of the compartment, and a bottom member 22 is hinged, as at 23, to the lower edge of the bar 21 and is normally held with its free edge against the back of the compartment, so as to support a stack 24 of packages—such, for instance, as small bottles.

For the purpose of holding the stacks of bottles or other packages in the respective compartments or chutes there is a guard made up of spaced slats or bars 25, extending longitudinally across the fronts of the compartments and connected at their upper ends by a cross-bar 26, which is connected to the top 14 of the frame by one or more hinges 26^a, there being an intermediate cross-bar 27 connecting the slats about midway of their lengths. The cross-bar 27 is projected at each end beyond the slats and provided upon each of its extremities with a headed pin or projection 28, with which removably engages a hook or catch 29, pivoted to the adjacent edge of the frame, as at 30. Normally this guard is held in its closed position by the catches 29, so as to prevent the stacks of bottles from falling out through the open fronts of the compartments, and it is of course possible to open the guard upon its hinges 26^a to refill the compartments. A leaf-spring 31 has one end portion secured to the front of the lower end of each guard-slat 25, with its free end portion projected downwardly below the adjacent cross-bar 21 and then bent rearwardly to form a coil 32, bearing against the under side of the hinged bottom member 22, so as to yieldably hold the latter pressed against the back of the frame, as best shown in Figs. 2 and 3 of the drawings, whereby each stack of bottles or packages is supported within its compartment. It will of course be understood that the spring is capable of yielding under pressure upon the member 22, so as to swing the latter downwardly and outwardly to open the bottom of the compartment or chute whenever it is desired to permit the discharge of one of the bottles.

The coin-controlled mechanism for discharging the bottles consists of an upright slide 33, one for each of the chutes or compartments, working in a groove or guideway 34 in the front edge of one of the partitions 15. This slide is yieldably hung by means of a helical spring 35, which is connected at its upper end to the adjacent partition 15 and has its lower end suitably connected to the top of the slide. A guard-plate 35′ is secured across the upper portion of the guideway 34, so as to hold the slide therein, and the lower portion of the slide is provided with a longitudinal slot 36, receiving a guide-pin 37, extending transversely through the guideway. For convenience in depressing the slide there is a substantially horizontal lateral offset bar 38, carried by the lower portion of the slide and provided upon its outer end with a finger-piece 39. This bar works through a vertical slot 40 in the lower end bar 10 of the removable front of the case, said slot being in the nature of a bifurcation intersecting the bottom of the frame to permit upward removal thereof from the case without interference on the part of the several bars 38. The lower end portion of the guideway 34 is laterally enlarged, as at 41, to form a coin-chute having the outer edges of its walls in engagement with the lower portion of the glass-covered frame 9, the latter being provided with a slot 42, registering with the open front of the coin-chute 41 for the introduction of a coin thereto. The lower front portion of the coin-chute 41 is provided with a coin-deflector 43, which is inclined downwardly and rearwardly from the front of the chute, so as to deflect or direct a coin to the back of the chute, the bottom of the chute being open throughout its rear for the discharge of the coin and the back of the frame being provided at its lower end with the upper and lower slots 44 and 45. The bottom of the coin-chute 41 is normally closed by the member 22, so that when a coin (designated 46 in Fig. 3 of the drawings) is dropped into the chute it is supported by the member 22 and the back of the chute, the opening 44 being shorter in length than the diameter of a predetermined coin—say, for instance, a nickel—wherefore the coin cannot be discharged outwardly through the opening 44. However, the opening 44 is longer than the diameter of a cent in order that a cent may roll out through the opening 44, thereby to prevent actuation of the device by a coin of smaller denomination than that which is designed to operate the coin-controlled mechanism.

To actuate the device, a coin is dropped into one of the coin-slots in the front of the case and rolls down to the position indicated at 46 in Fig. 3 of the drawings, whereupon the corresponding finger-piece 39 is depressed until the lower end of the slide 33 comes into contact with the top of the coin 46, the latter then forming a push connection between the slide and the element 22, so that further depression of the finger-piece swings the element 22 downwardly and outwardly, as indicated in dotted lines, thereby permitting of the lowermost bottle or package dropping into the compartment 4, where it may be obtained through the open front of the compartment. The depression of the element 22 of course permits of the depression of the coin until the latter registers with the slot 45, whereupon it passes rearwardly through said slot into the money box or drawer 7, after which the element 22 will be returned to its normal position by the spring 31 when the slide 33 is retracted by the spring 35. The downward movement of the slide or plunger 33 is limited by the upper end of the slot 36 coming into engagement with the pin 37, thereby to prevent the slide from being pushed down too far and interfering with the closing of the bottom member 22, which is common to the coin-chute and the adjacent article-containing chute.

To permit only one package at a time dropping out of the compartment or chute, the upper side of the element 22 is provided with a pair of fingers 47, which are set at a suitable angle to the member 22, so as to pass in between the lowermost article and the next above article when the member 22 is depressed, whereby said fingers support all but the lowermost article during manipulation of the coin-controlled mechanism, and thus only one article at a time is delivered by a single operation of the coin-controlled means. When the finger-piece 39 is released, the spring 35 of course elevates the slide 33 into its original position, while the element 22 is automatically returned to its normal position by the spring 31 immediately upon the escape of the coin from the member 22 rearwardly through the slot 45, whereby the fingers 47 are wiped upwardly past the lowermost of the stack of bottles in order that the lowermost bottle may rest directly upon the member 22 in position to be discharged upon the next successive operation of the coin-controlled mechanism.

From the foregoing description it will be understood that the apparatus of the present invention is exceedingly simple and at the same time effective for the purpose designed. The article-containing frame is mounted within the case in such a manner as to permit removal thereof for repairs in the article-delivering and coin-controlled mechanisms, and the article-containing compartments or chutes may be readily refilled without removing the frame from the case.

Having fully described the invention, what is claimed is—

1. In a vending-machine, the combination of an article-containing chute, a coin-chute, a movable bottom common to the chutes, a plunger working in the coin-chute and provided with a slot, and a limiting projection received in the slot to limit the movement of the plunger with respect to the diameter of a predetermined coin.

2. In a vending-machine the combination with a casing having an article-containing chute, a coin-chute having a discarding-opening; of a cross-bar adjacent the lower ends of the chute, a normally inclined bottom hinged to the cross-bar and extending downward toward, and adapted to deflect improper coins into the discarding-opening, a spring-support for holding the bottom normally in closed position, fingers rigidly connected to and extending from the hinged bottom and constituting supports for all of the articles within the chute except the lowest one when the bottom is swung open, and a plunger longitudinally movable into the coin-chute and disposed to press upon a coin on the bottom to depress the bottom and open the chutes.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM H. LARAWAY.

Witnesses:
C. E. JENNINGS,
D. A. WHITNEY.