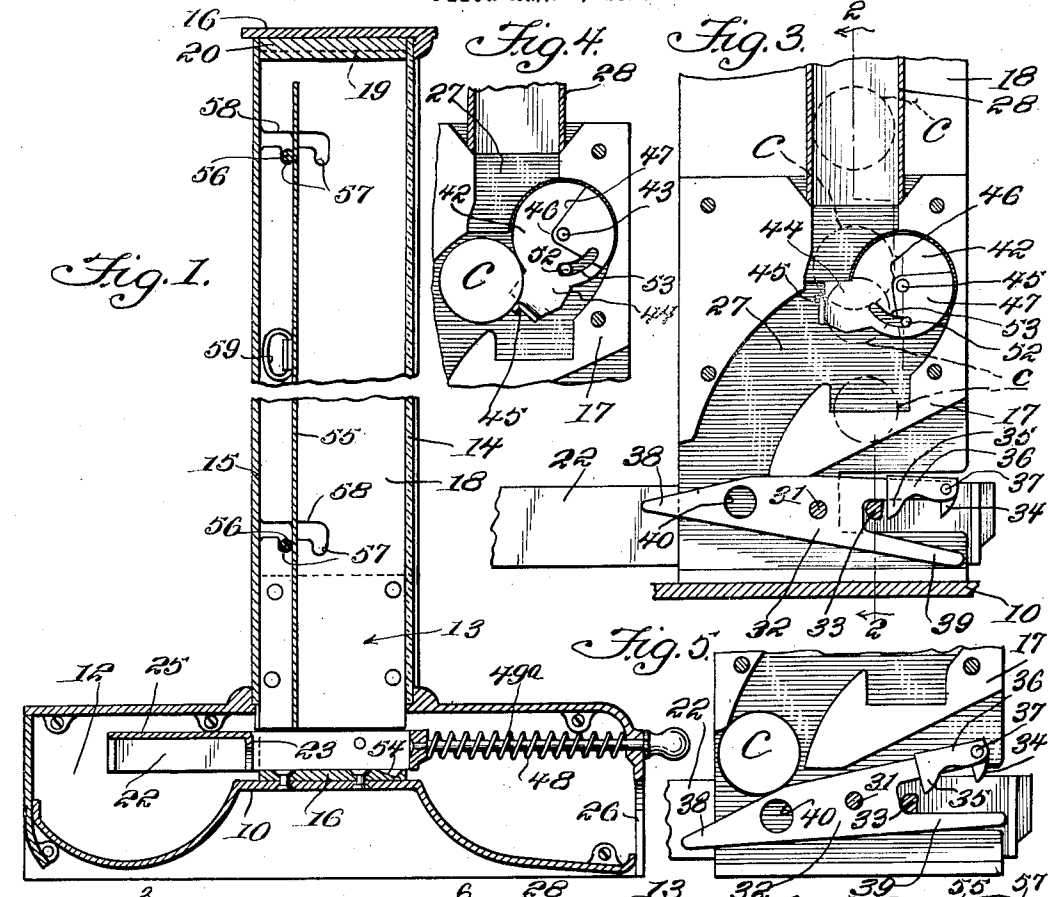
April 17, 1928. 1,666,849

B. L. FRY

VENDING MACHINE

Filed Aug. 7, 1925 2 Sheets-Sheet 1



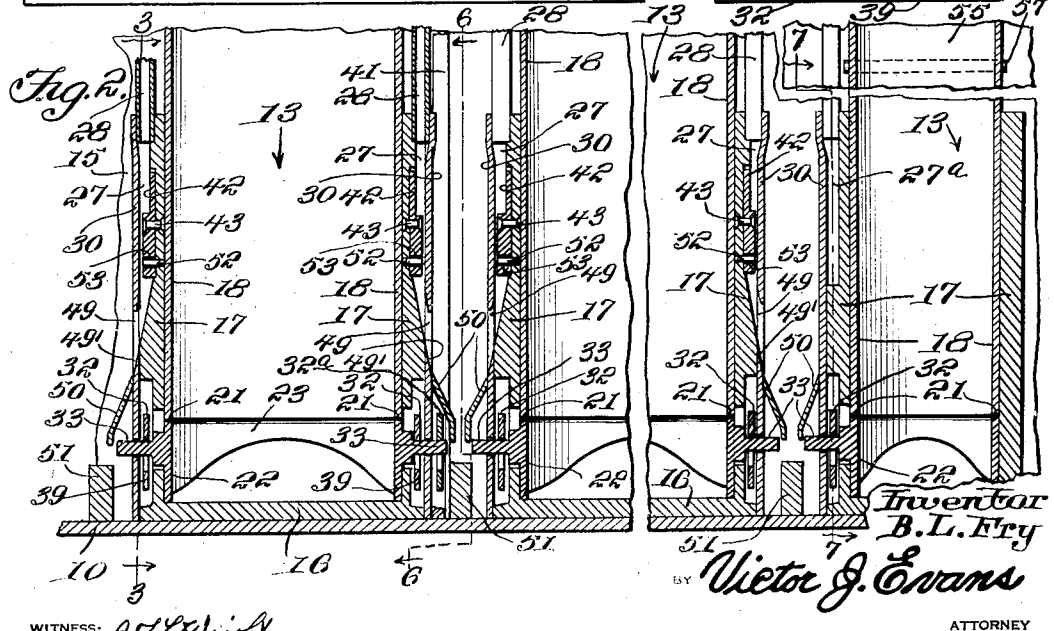


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Fig. 7.

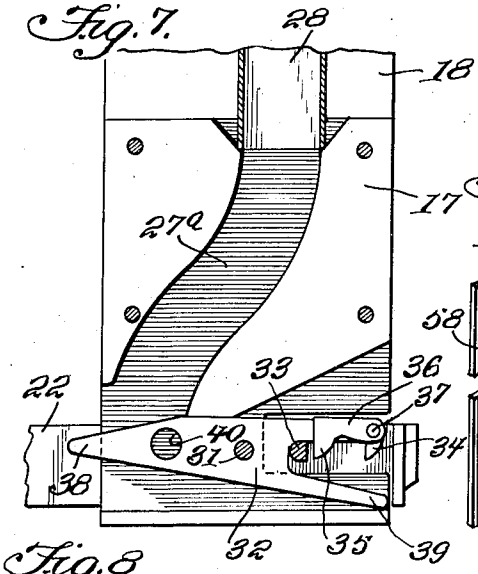


Fig. 10.

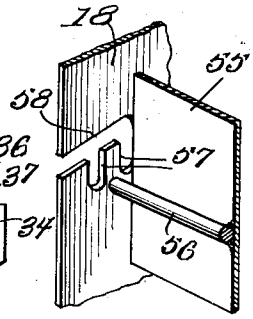


Fig. 8

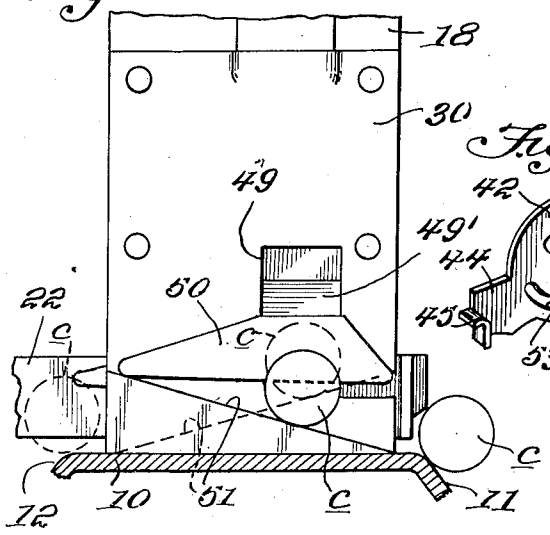


Fig. 11.

Fig. 9.

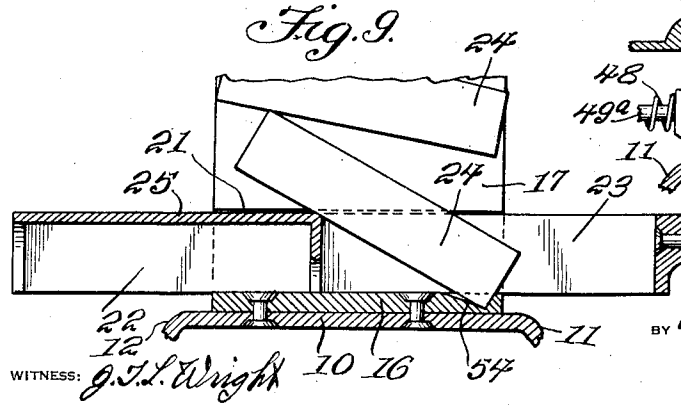
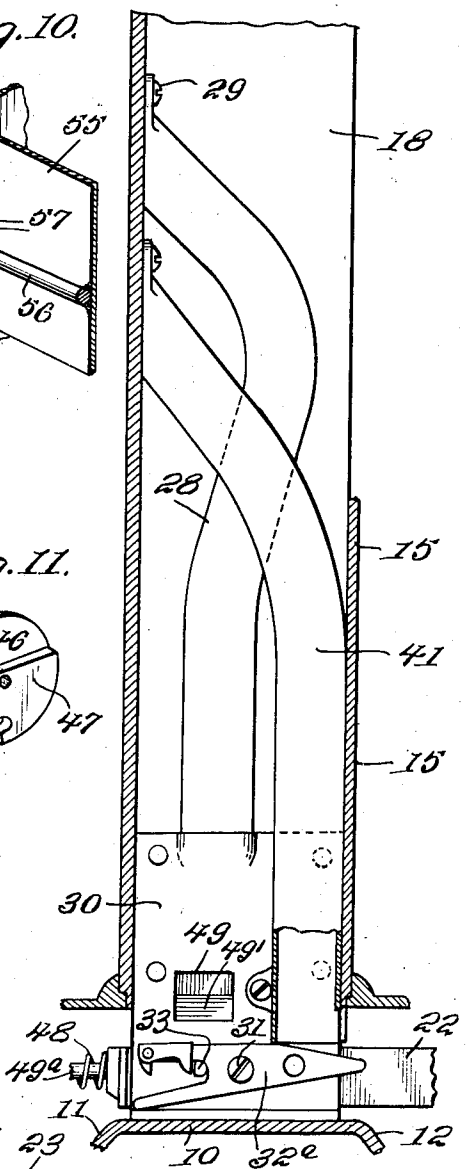


Fig. 6.



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UNITED STATES PATENT OFFICE.

BENJAMIN L. FRY, OF ST. LOUIS, MISSOURI, ASSIGNOR TO NATIONAL SALES MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

VENDING MACHINE.

Application filed August 7, 1925. Serial No. 48,870.

This invention relates to coin controlled vending machines and is an improvement upon my copending application, Serial No. 14,538, filed March 10, 1925.

In practice, it has been found that by forming the base and side walls of the package compartment separately, as in the application above mentioned, the coin controlled mechanism will sometimes jam. This is due to the non-rigidity of structure. It is, therefore, one of the objects of the present invention to form the bottom and side walls of the package compartment as a unit and to so arrange the coin controlled mechanism thereon as to provide a unitary structure which insures proper operation of the coin controlled mechanism and thus eliminates the disadvantage mentioned.

Another object of the invention is the provision of means included in the construction of the package compartment to provide an ejector guide to eject the articles from the compartment upon proper operation of the coin controlled mechanism, means being included in the compartment structure to prevent the removal of a package or article should the latter tilt from the horizontal, so that it will be impossible to remove a package or article by a short reciprocatory movement of the ejector.

Another object of the invention is the provision of means to insure the operation of the coin controlled means by a proper coin only and to permit of the free passage of a coin of less value without actuating the controlling mechanism, means being provided to either return the improper coin to the operator or to retain the said coin within the machine.

Another object of the invention is the provision of means for regulating the size of the package or article compartments, the said means permitting the size of the compartments to be adjustably regulated in accordance with the size and character of the article or package to be vended.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a vertical sectional view showing the machine constructed in accordance with the invention.

Figure 2 is a fragmentary section on an enlarged scale and taken substantially on the line 2—2 of Figure 3.

Figure 3 is a similar view on the line 3—3 of Figure 2.

Figure 4 is a fragmentary view similar to Figure 3 illustrating the passage of a proper coin through the coin chute.

Figure 5 is a fragmentary view illustrating the position of a coin prior to its release.

Figures 6 and 7 are sectional views taken substantially on the lines 6—6 and 7—7 respectively.

Figure 8 is a fragmentary view illustrating the means for guiding the coin after the operation of the coin controlled mechanism.

Figure 9 is a fragmentary sectional view illustrating the method of preventing the removal of a package or article by manipulation of the ejector slide.

Figure 10 is a fragmentary perspective view showing the means for adjustably mounting the rear wall of the package compartment.

Figure 11 is a detail perspective view of the coin actuated disk.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates the base of the machine which includes a package or article delivery compartment 11 and a coin compartment 12, while rising from the base centrally between the compartments 11 and 12 are one or more package or article compartments 13. These compartments 13 are formed between a front transparent wall 14 and a rear removable wall 15, while a top 16 connects the front and rear walls and is common to all of the compartments.

The construction of the compartments forms one of the novel features of the present invention so that each of these compartments includes a substantially U-shaped member or base portion. This member or base portion comprises a bottom 16 from which rises side walls 17, while secured to the opposed faces of these side walls are side

walls or extensions 18. The upper edges of the walls 18 are arranged within grooves 19 provided in a strip 20 which extends across the top compartments 13 while the lower edges of the walls 18 are spaced from the bottom 16 so as to provide spaced guides 21. The walls 18 are riveted or otherwise permanently secured to the walls 17 so as to provide a rigid structure.

The guides 21 accommodate an ejector slide 22 which is provided with an opening 23 to receive an article or package 24, while the opposite end of the slide is formed to provide a table 25. By reference to Figure 1 of the drawings it will be seen that packages or articles from the compartments 13 will fall by gravity into the open portion 23 of the slide or ejector and when the latter is pulled outward, the package or article therein will fall into the compartment 11 so that it may be removed through an opening 26 in the front of the base 10. The next succeeding article or package will rest upon the shelf 25 until the slide is returned to its normal position to receive another article or package within the open portion 23.

The side walls 17 are recessed to provide a coin passage 27 whose upper end is in communication with the lower end of a coin chute 28, while the upper end of this chute is secured as at 29 to the front of the casing between the compartments 13. In order to hold the lower end of the chute 28 within the upper end of the passage 27, each of the side walls 17 has riveted or otherwise secured thereto a plate 30 which provides an outer wall for the passage 27 and which overlaps the lower end of the chute 28.

Pivotally mounted as indicated at 31 to the side wall 17 beneath the passage 27 is a latch 32. This latch is designed to engage a stud or pin 33 which extends laterally from the ejector slide 25. The latch 32 is provided with a rigid tooth 34 and with a supplemental tooth 35 which is carried by a supplemental or auxiliary latch 36. The latch 36 is pivotally mounted upon the latch 32 as shown at 37. An arm 38 extends from the opposite end of the latch in the path of a coin C leaving the passage 27, while a finger 39 also extends from the latch and is spaced from and at an incline with respect to the arm 38. As the latch 32 is designed to be operated by the coin C and as coins of different denominations are required for the purchase of different articles, the latch is preferably provided with an opening 40 to regulate its balance by regulating the size of the opening.

The machine is designed for the sale of different articles and each compartment is arranged to accommodate a desired article or package. Where the article within a particular compartment is sold for the value of a single coin, the passage 27[a] illustrated in Figure 7 of the drawings may be arranged as shown in this figure and may be at one side of the compartment only. Where more than one coin is necessary, the mechanism just described will be duplicated upon opposite sides of the compartment as shown at the center compartment in Figure 2 of the drawings. As an example, should the package or article within this compartment be sold for fifteen cents, one of the coin operated latches is arranged to respond to a dime and the other to a nickle and as the ejector slide 25 is provided with a pin or stud 33 at each side thereof and with a controlling latch 32 for each stud or pin, both coins must be inserted to release the slide. Should the price of the article or package be sixteen cents, an additional coin chute 41 may be provided upon the outside of the compartment and upon the outside of the chute 28 at one side of said compartment. A latch 32[a] similar to the latch 32 is arranged at the outlet end of the chute 41 and the stud or pin 33 is of sufficient length to be engaged by this latch. Thus, a dime, a nickle and a penny must be inserted in the machine before the slide of the compartment 13 to the left of Figure 2 is released.

In order to prevent the operation of the machine by a coin of less than the proper value and to permit the improper coin to pass out the coin chute, there is arranged within the passage 27 a rotatable disk 42. This disk is mounted upon a pivot 43 and is provided with an extension 44 which carries a shoulder or lug 45. Carried by the disk 42 and spaced from the shoulder or lug 45 is an additional shoulder or lug 46. This last mentioned shoulder or lug is formed by an enlargement 47 of the disk 42 as shown in Figure 11 of the drawings and provides a combined stop and counterbalance weight. By reference to Figure 3 of the drawings it will be seen that a coin of proper value passing into the passage 27 will engage the lugs or shoulders 45 and 46, the weight of the coin overbalancing the counterbalance weight 47, so that the coin will drop into the curved portion of the passage 27 upon the arm 38 of the latch. This operation of the member 42 is illustrated in Figure 4 of the drawings. The weight of the coin will move the latch 32 pivotally, but the coin will be held in the position illustrated in Figure 5 of the drawings until the ejector slide 25 has been moved outward a sufficient distance to release the pin or stud 33 from the finger 39. The weight of the coin will then move the latch 32 further downward and the coin will roll into the coin compartment 12. The ejector slide 25 is returned to its normal position under the action of a spring 48 which surrounds an operating rod 49.

Should a similar coin or a coin of less

value be inserted in the coin chute, it will pass downward between the shoulders 45 and 46 as illustrated by the dotted lines in Figure 3 of the drawings and will pass out of the passage 27 through an opening 49. This opening has a lower beveled edge 49' so that the coin *c* will pass downward over an inclined member 50 upon a second inclined member 51. The member 51 may be positioned to deliver the coin *c* to the compartment 11 so that it may be recovered by the person inserting it, or the member 51 may be arranged as shown by the dotted lines in Figure 8 so that the coin will be delivered to the coin compartment 12. Pivotal movement of the member 42 in opposite directions is limited by a pin 52 which enters an arcuate slot 53 provided in said member 42.

The articles or packages 24 are, as previously stated, designed to enter the open portion 23 of the ejector slide and to be moved horizontally so that they will fall into the compartment 11. Should the next succeeding article or package fail to properly enter the open portion 23 of the slide, the edge of the said article or package will fall into a substantially V-shaped groove 54 which extends across the bottom 16 as shown in Figure 9 of the drawings. Thus, a person will be prevented from manipulating the ejector slide to gradually draw the package or article into the compartment 11 without inserting an additional coin.

The machine is designed to vend articles of various sizes and in order to adapt the machine for this purpose and to arrange the article or package compartments in accordance therewith, there is provided an auxiliary or supplemental rear wall 55, shown in Figure 1 of the drawings. This wall is provided with spaced bars 56 which extend transversely across the wall beyond its side edges and provide oppositely extending pins. These pins are adapted to removably enter notches 57 which are spaced along the opposite side walls of the compartments and which communicate with slots or grooves 58. The depth of the compartments may thus be conveniently regulated. The walls 55 are provided with handles or grips 59 for convenience.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. A vending machine comprising a casing, a package compartment therein, said compartment comprising a substantially U-shaped base portion, side walls secured to the opposed vertical faces of the base portion with the lower edges of said walls spaced from the bottom to define guides, an ejector mounted and movable in said guides, and means to return the ejector to normal position.

2. In a vending machine, a package compartment including front, side and rear walls, said side walls having spaced horizontally disposed grooves in their opposed faces and spaced downwardly extending notches communicating with said grooves, a supplemental wall and pins extending from opposite edges of the supplemental wall for engagement in said notches to regulate the depth of the compartment.

3. In a vending machine, a package comparement, an ejector movable in said compartment to eject packages horizontally therefrom and a transversely disposed substantially V-shaped groove located in the bottom of the compartment with one of the walls of the groove arranged to provide a stop to retain the package in the event of the latter tilting from the horizontal.

4. In a vending machine, a package compartment, an ejector movable in said compartment to eject packages horizontally therefrom, and means positioned at the discharge end of the package compartment to be engaged by the package in the event of the latter tilting from the horizontal, to retain said package in the machine.

In testimony whereof I affix my signature.

BENJAMIN L. FRY.