April 9, 1929. W. H. ROWE 1,708,741

COIN CONTROLLED MECHANISM

Filed June 15, 1925 2 Sheets-Sheet 1

Fig. 2

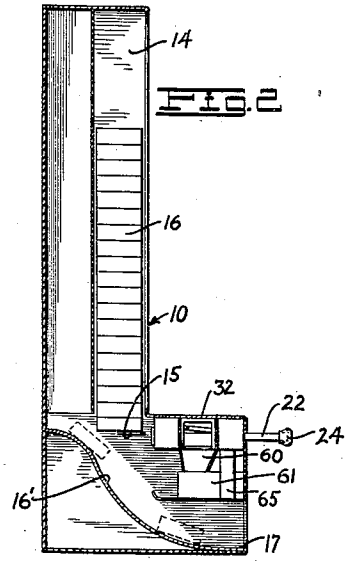


Fig. 1

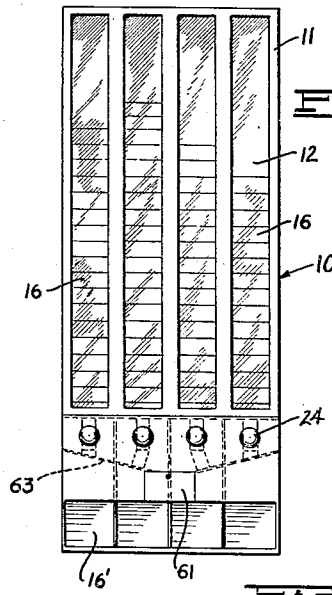


Fig. 4

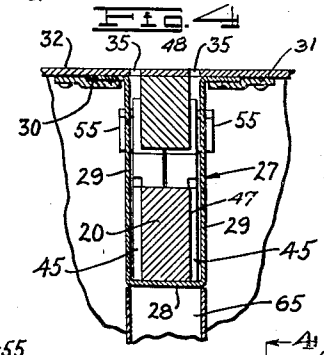


Fig. 3

INVENTOR.
WILLIAM H. ROWE

BY

ATTORNEY.

April 9, 1929. W. H. ROWE 1,708,741

COIN CONTROLLED MECHANISM

Filed June 15, 1925 2 Sheets-Sheet 2

Fig. 5

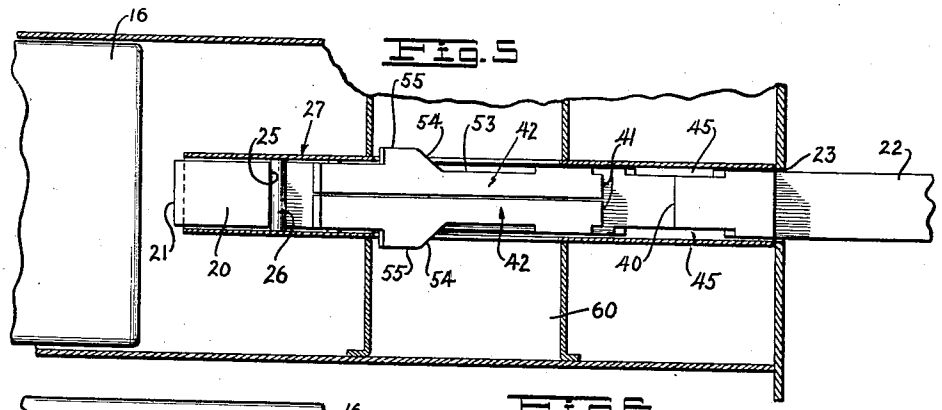


Fig. 6

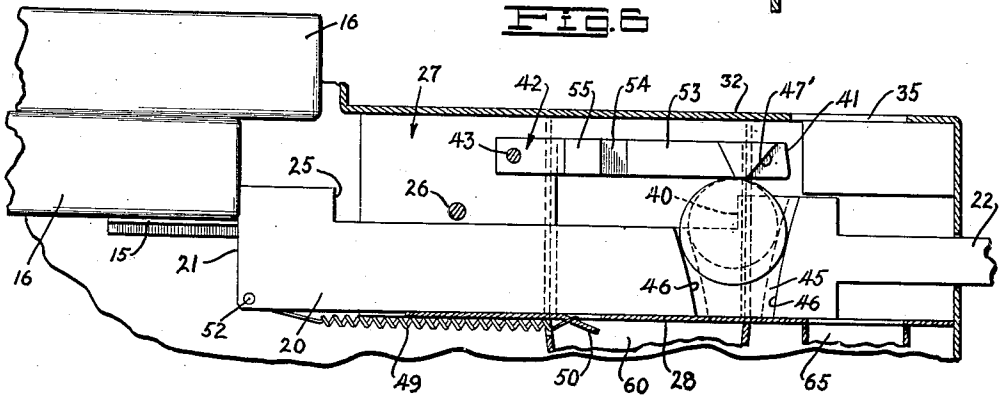
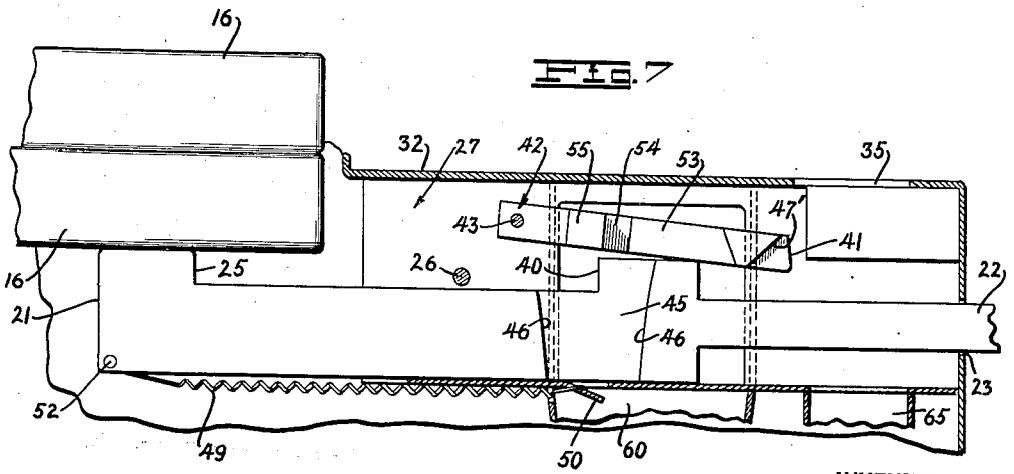


Fig. 7



INVENTOR.
WILLIAM H. ROWE
BY B. J. Craig
ATTORNEY.

Patented Apr. 9, 1929. 1,708,741

UNITED STATES PATENT OFFICE.

WILLIAM H. ROWE, OF LOS ANGELES, CALIFORNIA.

COIN-CONTROLLED MECHANISM.

Application filed June 15, 1925. Serial No. 37,067.

This invention relates to coin controlled mechanism.

The general object of the invention is to provide an improved coin actuated mechanism which is particularly adapted for use with vending machines.

A specific object of the invention is to provide a coin actuated mechanism wherein the operating plunger is freed only upon the introduction of a plurality of coins.

Another object of the invention is to provide a coin freed mechanism including a single plunger and wherein it is necessary to insert a plurality of coins to operate the mechanism which includes a novel form of locking bolt.

A further object of the invention is to provide a coin freed mechanism wherein a single operating plunger is employed in conjunction with a plurality of locking bolts and wherein each bolt must be independently actuated by an introduced coin to effect operation of the mechanism.

Other objects of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein Fig. 1 is a front elevation showing the application of my invention to a vending machine.

Fig. 2 is a central sectional view through a vending machine equipped with my invention;

Fig. 3 is a fragmentary view in section showing parts of my coin controlled mechanism in elevation;

Fig. 4 is a section on line 4—4, Fig. 3;

Fig. 5 is a sectional view showing the locking bolts in top plan;

Fig. 6 is a view similar to Fig. 3 showing the parts in the releasing position; and

Fig. 7 is a view showing the relation of parts after delivery of the vended articles has been effected.

Referring to the drawing by reference characters, I have shown a case for my vending machine at 10. This case as shown comprises a front portion 11, which may be provided with a plurality of transparent panels 12 and with a longitudinally extending hopper 14 disposed adjacent the panels 12.

Under modern merchandising methods, a great number of articles are now prepared in packages for the retail trade. These packages contain articles in definite numbers and the retail price of these articles is usually established and well known. As an example, I may refer to packages of cigarettes which are now sold in retail stores. These cigarettes sell at various prices and usually the selling price is such that it requires two or more coins to make the desired sum.

For instance, to make the correct change for a fifteen cent package of cigarettes requires that the purchaser have a dime and a nickel, and in order that cigarettes or other packages that retail at fifteen cents, may be successfully vended, it is necessary that a coin actuated mechanism which may be operated upon the introduction of the two coins be employed. For this purpose, I have designed the following structure which is one embodiment of my invention.

The case 10 is provided with supporting members 15 adjacent the bottom of the stack of articles 16, and in the rear of this I provide a plurality of delivery slides 16′ which extend to a point 17 adjacent the front of the casing 10. Referring to Fig. 3 it will be seen that the stacked articles 16 are superimposed in tiers upon the supporting members. These supporting members engage the two ends of the articles so that a plunger may move between them.

It will be apparent that when the lowermost article 16 is pushed rearwardly from the position shown in Fig. 2 that it will fall on the delivery slide 16′ and the articles above it will move down to engage the supporting members 15. To provide means for engaging the lowermost article 16 in each tier I employ a plurality of plungers 20. Each plunger 20 is provided with a front portion 21 which is adapted to pass between the supporting members 15 and engage the lowermost package 16. The other end of the plunger as at 22 is of reduced size to pass through an aperture 23 in the front part of the casing. A knob 24 may be provided on the outer end of the plunger if desired.

Adjacent the end 21 of the plunger, I provide a shoulder 25 which is adapted to engage a stop member 26 which is secured in a U-shaped strip of metal 27 best shown in Fig. 4. This U-shaped strip serves as a guide for the plunger 20 and comprises a bottom portion 28 and side portions 29. Each side portion is provided with laterally extending flanges 30 which fit upon a stepped portion on strips 31 which are se-

cured upon the lower surface of the base 32 of the vending machine. The flanges 30 are adapted to slide between the retaining strips 31 and the base 32 with a tight sliding fit so that their engagement with the retaining strips will be sufficient for holding them in place although it will be understood that they can be held in place by suitable fastening members if deemed desirable.

The base 32 of the vending machine is provided with a pair of slots 35, the outer edges whereof are in alignment with the inner faces of the sides 29 of the U-shaped strip 27 (see Fig. 4) and these slots 35 are of sufficient length and thickness to barely allow entry of the proper coin.

In the description to follow I will describe my invention as adapted to be operated on the insertion of a dime and nickel, although it will be understood that the invention with equal facility can be made to operate with a nickel and a penny, a dime and a penny, two nickels, or in fact by any combination wherein two coins are used regardless of whether the coins are of the same or different denominations.

It will also be understood that suitable fraud prevention devices may be used in connection with my invention to prevent use of slugs, counterfeit coins, etc. These devices will be the subject matter of an application to be filed later.

Adjacent the reduced portion 22 of each operating plunger 20, I provide a shoulder 40 which is adapted to normally engage the rear end 41 of a pair of independent locking bolts 42 which are each pivoted upon the same pivot member 43 shown as extending across the sides 29 of the U-shaped member 27. The plunger 20 as shown in Figs. 4 and 5 is of considerable thickness so that it has a sliding fit in the bottom of the members 29. The two pivoted locking bolts 42 each have a width substantially equal to one-half the width of the plunger 22 and these locking bolts are mounted so that they may move independently about the pivot 43.

Disposed beneath the slots 35 and on each face of the plunger 20 is a coin slot 45 which is defined by curved tapering sides 46 and back 47. In Fig. 3 the front coin slot is shown of the size to accommodate coin such as a nickel while the coin slot on the other side of the plunger and shown in dotted lines is of the size to accommodate a dime. The coin slots are of sufficient width so that when a nickel and a dime are inserted the center of gravity of these coins will be disposed low enough so that the coins will travel along the pocket formed by the slot and by the adjacent face of the member 29. A block 48 is fitted between the slots 35 to guide the coins.

If no coins are inserted, or but a single coin is inserted, when the plunger 20 is moved to the left the shoulder 40 thereof will engage the end 41 of the pivoted locking pin 42 to prevent further movement so that no delivery is effected. When, however, the proper coins are inserted, the perimeter of these coins will engage the inclined faces of lifting cams 47'. These cams 47' comprise shoulders arranged on the locking bolts 42. The inclination of the lifting cams 47' is such that as the operating plunger moves to the left in Fig. 3 the coins will engage the cams 47' and will rock the locking bolts 42 allowing the coins to pass over and raise the locking bolt to the position shown in Fig. 6 wherein a plunger 20 is free to advance and discharge the lowermost packages 16. This movement of the plunger actuates against the tension of a spring 49 which is fastened at one end to a tongue 50 struck from bottom 28 and at the other end to a pin 52 secured in the plunger 20.

As the plunger is advanced to deliver the article the coins pass along the locking bolts 42 until they reach recesses 53 which are arranged on the outer portions of the locking bolts. When the recesses 53 are reached the locking bolts drop down. The recess 53 terminates in a coin releasing cam 54 which merges into two winged portions 55 as shown in Fig. 5. The construction of the cams 54 is such that as the locking bolts 42 advance carrying the coins inwardly, the cams 54 will engage the inner face of each coin and will tilt the upper portion of the coins outwardly to free them from the slots 45 and cause them to fall into a coin chute 60 whence they pass to a coin box 61. The chutes 60 are arranged above inclined walls 63 down which the coins slide to the coin receptacle 61.

In the event that a coin smaller than the proper coin is inserted in a slot 35, this coin will pass directly through the coin slots 45 down a chute 65 into the delivery portion 17 of the vending machine. The chutes 65 it will be noted pass through the bottom wall of the inclined coin guide 63.

From the foregoing description it will be apparent that I have provided an improved coin freed mechanism which is adapted to be operated through the insertion of two coins, which is highly effective, can be readily manufactured, and which is not likely to get out of order.

Having thus described my invention, I claim:

1. In a coin controlled device, a supporting member, a plunger slidable in said member, said plunger including a projecting operating portion and having a portion for causing an article to be delivered, means to normally prevent actuation of said plunger, a coin slot on said plunger, the bottom of said coin slot being narrower than the diameter of a coin adapted to be used with said device, and additional means whereby when

the proper coin is inserted in said slot the means for preventing actuation will be released upon actuation of the plunger, and means on said means for preventing actuation for moving the coin laterally from said slot.

2. A coin actuating mechanism comprising a casing, a slidable coin operated plunger in said casing, a pair of pivoted locking bolts normally adapted to engage said plunger to prevent operation thereof, a coin slot in each of said locking bolts, said bolts each having a cam surface thereon adjacent to said coin slots and adapted to engage coins in said slots whereby when said plunger is advanced, said locking bolts will be raised and means to discharge said coins laterally from said coin slots.

3. In a coin controlled device, a base, a pair of spaced retaining strips thereon, a U-shaped member having retaining flanges slidably fitted beneath said retaining strips, a plunger slidable in said member, means for normally preventing actuation of said plunger, and coin actuated means for releasing the plunger, said base having a coin slot therein, and said plunger having a coin slot therein in alignment with the first mentioned coin slot.

4. In a coin controlled device, a supporting member, a plunger slidable in said member, said plunger having a projecting operating portion and having a portion for engaging an article to be delivered, a stop member for limiting movement of said plunger in one direction, a pair of locking bolts mounted adjacent to said plunger, said plunger having a pair of coin slots therein, said plunger having a shoulder normally adapted to engage the end of the locking bolts, each of said locking bolts having operating cam faces thereon, said cam faces being disposed in alignment with said coin slots whereby coins may engage said faces to operate the locking bolts and free the plunger, said locking bolts having side recesses therein disposed adjacent to but spaced from said lifting cam surfaces, said recesses at one end terminating in coin delivering cam faces whereby as the plunger is advanced the last mentioned cam faces will engage said coins to push them from the coin slots.

5. In a coin controlled device, a base, a retaining strip thereon, a U-shaped member having retaining flanges thereon slidably fitted beneath said retaining strip, a plunger slidable in said member, said plunger having a projecting operating portion and having a front face for engaging an article to be delivered, a stop member for limiting movement of said plunger in one direction, a pair of locking bolts pivotally mounted above said plunger, and adapted to engage said plunger to prevent movement thereof in another direction, said plunger having a pair of tapering coin slots in the side wall thereof, each of said locking bolts having lifting cam faces thereon, said cam faces being each disposed in alignment with one of said coin slots whereby the coins will engage said cams to lift the locking bolt and free the plunger, said locking bolts having side recesses therein disposed adjacent to but spaced from said lifting cam surface, said recesses at one end terminating in coin delivering cam faces whereby as the plunger is advanced the last mentioned cam faces will engage said coins to push them from the coin slots, said cam faces including wings projecting from the locking bolts.

6. In a coin controlled device, a base, a pair of retaining strips thereon, a U-shaped member having retaining flanges thereon fitted beneath said retaining strips, a plunger slidable in said member, said plunger having a projecting operating portion and having a front face for engaging an article to be delivered, a stop member for limiting movement of said plunger in one direction, said plunger having a tapering coin slot in each side wall thereof, a pair of pivoted locking bolts, said plunger having a shoulder normally engaging one end of each locking bolt, each of said locking bolts having lifting cam faces thereon, said cam faces being disposed in alignment with said coin slots whereby coins in said slots will engage said faces to lift the locking bolts and free the plunger, said locking bolts having side recesses therein disposed adjacent to but spaced from said lifting cam surfaces, said recesses at one end terminating in coin delivering cam faces whereby as the plunger is advanced the cam faces will engage the coins to push them from the coin slots, said cam faces including wings projecting from the locking bolts, a coin receptacle, and means to guide coins freed from said coin slots to the receptacle, said U-shaped member having a pair of coin chutes associated therewith and beneath said coin slots, said chutes leading to the delivery opening of the vending machine, whereby small coins will be returned to the operator.

7. In a vending machine, a casing, a U-shaped member, means to hold said U-shaped member in said casing, a plunger, said plunger being arranged within said U-shaped member, a coin slot in one side of said plunger, said coin slot being in part defined by the contiguous wall of said U-shaped member, means to normally restrain movement of said plunger and means whereby when a coin is in said coin slot and the plunger is actuated said restraining means will be moved to free said plunger.

In testimony whereof, I hereunto affix my signature.

WILLIAM H. ROWE.