A. ABBOTT.

VENDING MACHINE.

APPLICATION FILED JAN. 20, 1919.

1,367,678. **Patented Feb. 8, 1921.**

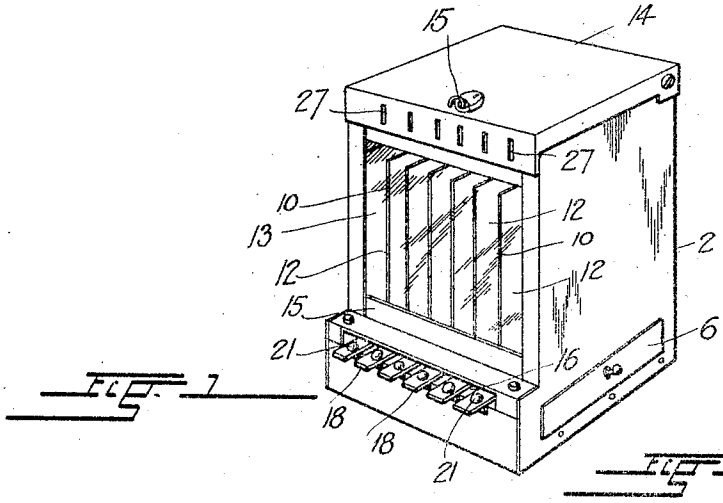


Fig. 1

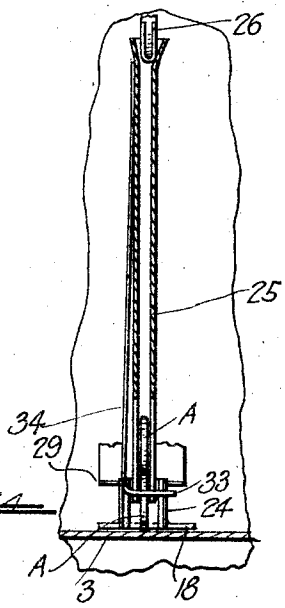


Fig. 4

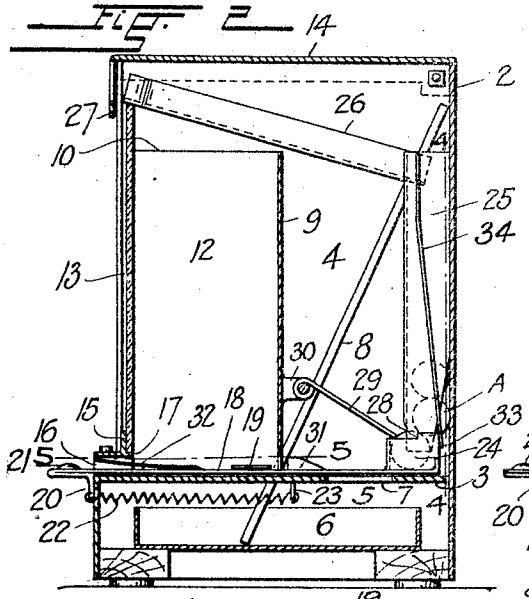


Fig. 2

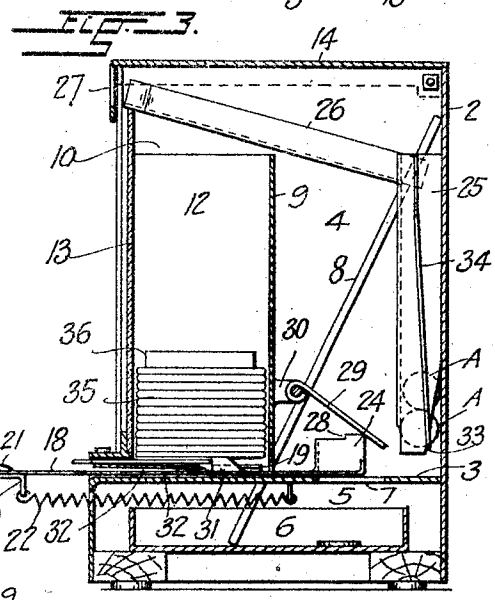


Fig. 3.

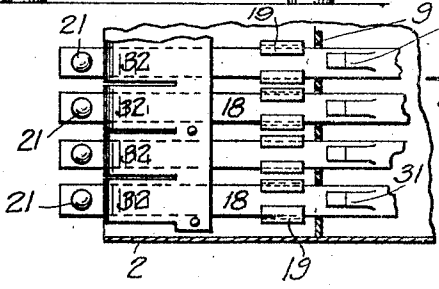


Fig. 5.

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VENDING-MACHINE.

1,367,678. Specification of Letters Patent. Patented Feb. 8, 1921.

Application filed January 20, 1919. Serial No. 272,038.

To all whom it may concern:

Be it known that I, AUGUSTUS ABBOTT, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to improvements in coin-controlled vending machines and more particularly to vending machines of the type shown and described in my application for patent No. 209,459, filed December 29, 1917, of which the present application is in part a continuation.

It is the primary object of my invention to provide a machine of simple construction which operates by the deposit of a coin of determinate value to deliver one of a selected kind of quantities of different chewing gums or other small confections which are contained in separated compartments of a case of suitable construction.

Another object of my invention resides in providing a novel contrivance for preventing the removal of the articles of merchandise from the case in which they are contained, by means other than the deposit of a coin of the required value, and in providing a simple appliance which in the event of a second coin being deposited in the machine to obtain an article of a selected kind before a first coin deposited for the same purpose has performed its function, will automatically retain said second coin until, after the delivery of the article through the instrumentality of the first coin, the operating mechanism of the machine has reassumed its normal position.

With these objects in view, my invention consists of the devices and combinations of parts shown in their preferred form in the accompanying drawings in which like characters of reference designate corresponding parts throughout the several views and in which—

Figure 1 represents a perspective view of the improved vending machine;

Fig. 2, a vertical section through one of the merchandise compartments of the same with the coin-controlled delivery-mechanism in its normal condition of rest;

Fig. 3, a section similar to that shown in Fig. 2, showing the operating parts of the mechanism in the position they occupy when delivering an article of merchandise after the deposit of a coin of the required value;

Fig. 4, a fragmentary section taken on the line 4—4, Fig. 2, drawn to an enlarged scale, and

Fig. 5, a fragmentary horizontal section on the line 5—5, Fig. 2.

Referring more specifically to the drawings, the reference character 2 designates a preferably rectangular case which by a horizontal partition 3 is divided into an upper merchandise chamber 4 and a lower coin-chamber 5.

The last-mentioned chamber of the case contains a sliding drawer 6 in which the coins A used in operating the vending mechanism are delivered through openings 7 in the partition and which is locked in its closed position by a rod 8 which extends through an aperture in the partition and within the drawer to prevent its sliding movement by engagement with its inner end.

The front portion of the upper chamber is by means of a vertical back-plate 9 and a plurality of side plates 10 extending at right angles thereto, divided into a number of adjoining compartments 12 which in practice contain stacks of pieces of gum or other articles of merchandise.

The wall of the case immediately in front of the merchandise compartments has a pane of glass 13 through which the contents of the compartments are visible, and the case is covered at its top by a hinged lid 14 which is secured in its closed position by a padlock 15.

The pane of glass is mounted to slide upwardly when the lid is open, for the purpose of facilitating the placement of the stacks of merchandise in the different compartments of the case.

An angle bar 15 secured at its ends to the case as best shown in Fig. 1 of the drawings, is spaced from the forward portion of the partition 3 to provide a passage 16 through which the articles of merchandise contained in the compartments may be singly delivered by the operation of the coin-controlled mechanism, the bar having a longitudinal ridge 17 for the support of the pane of glass 13.

Slidingly mounted upon the floor of the merchandise chamber in alinement with the different compartments, are pull-bars 18 made of flat strips of metal which are held against lateral displacement in guide-ways 19.

The forward ends of the bars, projecting

through the passage 16, have flanges 20 which by engagement with the front wall of the case below the passage, limit their inward movement, and buttons 21 riveted on the same ends of the bars provide handholds to facilitate their operative movement by an outward pull.

The flanges at the forward ends of the bars also provide means for the attachment of coi'ed springs 22 which extending through openings in the front of the casing beneath the horizontal partition, are fastened to a cross-bar 23.

The bars carry at their rear ends narrow coin-pockets 24 which when the bars are in their normal condition of rest, are alined with vertical coin-chutes 25 extending along the rear wall of the case.

The chutes connect at their upper ends with slanting slide-ways 26 which at their forward extremities communicate with coin slots 27 in the forward flange of the lid 14.

The pockets at the ends of the sliding pull-bars are proportioned to hold a coin of determinate value in a position in which it partially projects above the sides thereof. The pockets are bottomless so that the coins contained therein rest upon the floor of the chamber on which the pull-bars slide, whereby, when by forward movement of the bars the pockets are brought in alinement with the before-mentioned openings 7 in the partition 3, the coins will drop into the drawer in the lower chamber of the case.

The top edges of the coin-pockets are provided with upstanding shoulders 28 for coöperation with gravity latches 29 which are pivotally mounted on brackets 30 on the back-plate 9 and which normally rest upon the pockets forward of the shoulders to be engaged thereby in the forward movement of the bars.

When a coin is deposited in one of the pockets its portion extending above the sides thereof, lifts the respective latch above the line of movement of the shoulder 28 during forward movement of the bar on which the pocket is carried and thereby permits the bar to move forwardly to the extent required to deliver the merchandise contained in the corresponding compartment as will hereinafter be more fully explained.

The pull bars have with this end in view, upstanding shoulders 31 which normally extend rearward of and in close proximity to the corresponding compartments to enter the same through openings in the back-plate 9 when the bars are moved forwardly.

The shoulders are of just enough height to engage the lower one of a stack of articles of merchandise contained in the compartment and the delivery space at the front of the compartment beneath the angle bar 15 is likewise of sufficient height to only permit of the passage of one of the articles of merchandise at one time.

Leaf springs 32 fastened to the floor of the merchandise chamber extend within the different compartments to normally close the passage through which the merchandise is delivered.

The springs may be made separately or they may be formed integrally of one piece of metal as shown in Fig. 5, and they slant from the upper surface of the respective pull-bars upwardly to engage at their free ends the under surface of the angle bar by which the passage is defined.

The springs in this position, relieve, in coöperation with the adjacent guide-way 19, the bars from the weight of the stack of merchandise contained in the compartment above the same, and at the same time close the delivery openings of the compartments so as to frustrate fraudulent removal of the merchandise by means of a knife blade, pin or other similar instrument inserted through the passage.

In order to prevent incapacitation of the operating mechanism when by accident or erroneous intent a second coin is deposited in one of the coin chutes before a coin previously inserted therein has performed its function, the lower portion of the chutes are reduced in width by slanting their rear edges away from the surface of the wall of the case along which they extend, and in the tapering spaces thus formed, are placed yieldingly mounted coin-stops 33 which when the respective pull bars are in their normal positions, lie across the open rear edges of the coin pockets and are separated from the open ends of the conduits extending therein.

The stops are preferably formed of the bent end-portions of wire-springs 34 which at their upper extremities are fastened to the sides of the chutes along which they extend.

Coins dropping through the chutes, pass across the supports, into the pockets of the respective pull bars and when a second coin is inserted in the slide-way 26 connected with one of the chutes, before the pull-bar upon which the first coin was deposited is pulled forward to deliver the selected piece of merchandise, said second coin will rest upon the other as shown in Fig. 2 of the drawings.

Now when by forward movement of the pull-bar, the coin-pocket is moved out of alinement with the respective chute the second coin falls upon the respective stop which owing to the resiliency of its spring had moved into engagement with the rear edge of the conduit as shown in Fig. 3.

The stop in this position obstructs the passage of the coin through the end of the

conduit and the coin remains in this position until by the return movement of the pull-bar, the stop is again separated from the rear edge of the conduit by engagement with the corresponding edge of the coin-pocket.

The coin being thus released, enters the pocket as before and allows of the extraction of a second piece of merchandise from the respective compartment by lifting the latch 29 out of the line of movement of the shoulder on the upper edge of the pocket when the respective bar is again pulled forwardly.

In the operation of the vending machine, stacks of wrapped pieces of gum or other small confections designated by the numeral 35 in Fig. 3, are placed in the compartments, if necessary beneath a similarly wrapped weight 36 to insure their downward movement after the lowermost piece is removed through the passage 16.

The purchaser observing through the glass front of the case the brands of the confections appearing on the wrappers of the uppermost pieces of the stacks in the different compartments, drops a coin through the slot 27 alined with the compartment containing the brand he selected, and then pulls the bar at the bottom of this compartment, outwardly.

The bar which normally is locked against forward motion by the engagement of the gravity latch with the shoulder on the upper edge of its coin-pocket, is released by the passage of the coin into the pocket and with its shoulder 31 engages the lowermost article of the stack contained in the compartment and pushes it forwardly through the passage 16 and over the spring 32 which is depressed thereby.

The bar upon being subsequently released by the purchaser, is automatically returned to its original position by contraction of the spring 22 and the forwardly pushed piece of confection remains in a position in which it partially projects outside the case and may be grasped for its complete removal from the same.

The coin which by its lifting action on the gravity-latch released the bar for forward movement, falls into the drawer 6, through the respective opening 7 in the horizontal partition when the pocket in which it is carried is brought in register therewith.

The springs 32 which close the delivery openings of the different compartments effectively prevent access to the contents thereof by the insertion of a knife blade or other similar instrument and they furthermore coöperate with the adjacent guide-ways 19 in separating the stacks of gum from the respective pull bars and thereby facilitating the sliding movement of the latter.

The resiliently mounted stops 33 prevent the passage of coins through the ends of the vertical chutes unless the pockets on the respective bars are in alinement therewith.

It is therefore possible to deposit two or more coins at one time in one of the slots of the machine and obtain a corresponding number of pieces of merchandise by repeated movement of the respective draw-bar, and clogging of the machine by coins passing through the chutes, outside the pockets is effectively avoided.

Having thus described my invention what I claim and desire to secure by Letters-Patent is:

1. In a vending machine, a coin-chute, a slide having a coin pocket which in the normal position thereof, is partially alined with the end of the coin-chute to hold a coin deposited in said pocket, in a position forward with relation to a second coin resting on the other, and a stop disposed to extend beneath the portion of said second coin that projects over the coin in the pocket, and movable with the slide to provide a rest for the second coin after the lower coin has been removed.

2. In a vending machine, a coin chute having its lower end-portion reduced in width, and having slots in opposite edges thereof for the passage of coins, a slide having a coin pocket which in the normal position thereof, is partially alined with the coin chute to hold a coin passing through one of its said slots in a position forward with relation to a second coin resting on the other, and a spring-stop mounted to follow the forward movement of the slide, and adapted to rest across the other slot whereby to obstruct the passage of the second coin through the end of the chute.

In testimony whereof I have affixed my signature.

AUGUSTUS ABBOTT.