H. A. BLACK.

DISPENSING MACHINE.

APPLICATION FILED MAR. 24, 1917.

1,264,603.

Patented Apr. 30, 1918.

2 SHEETS—SHEET 1.

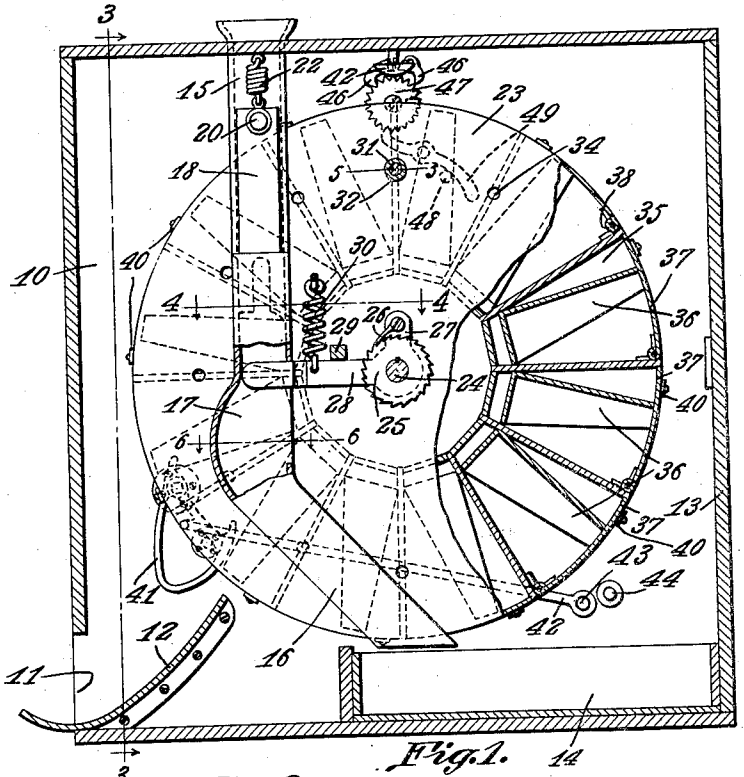


Fig. 1.

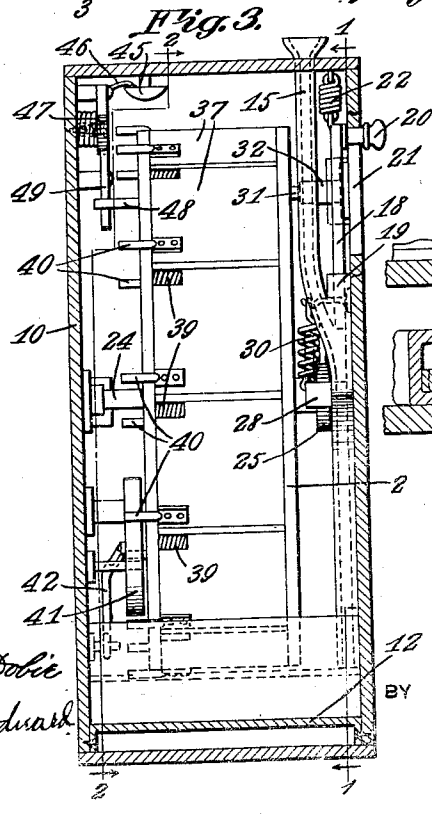


Fig. 3.

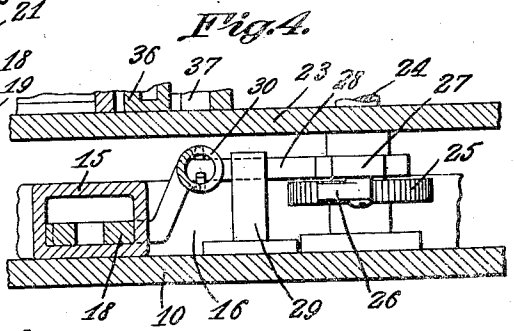


Fig. 4.

WITNESSES

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2 SHEETS—SHEET 2.

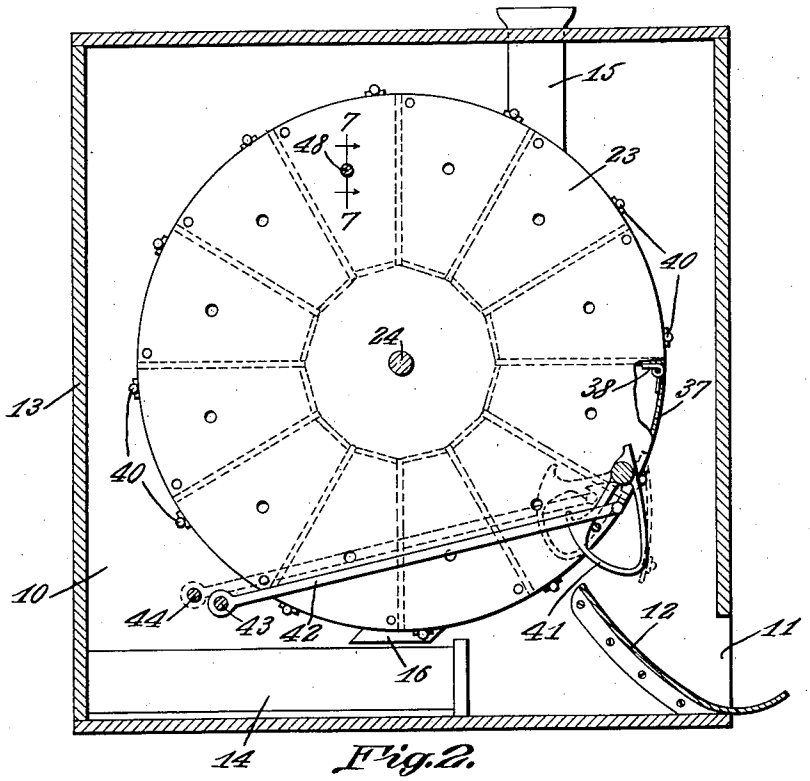


Fig. 2.

Fig. 5.

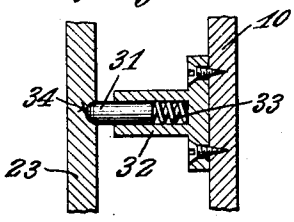


Fig. 6

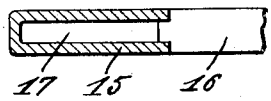
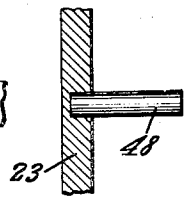


Fig. 7.



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WITNESSES

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UNITED STATES PATENT OFFICE.

HUGH A. BLACK, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

DISPENSING-MACHINE.

1,264,603. Specification of Letters Patent. Patented Apr. 30, 1918.

Application filed March 24, 1917. Serial No. 157,212.

To all whom it may concern:

Be it known that I, HUGH A. BLACK, a subject of the King of Great Britain, residing at Vancouver, in the Province of British Columbia and Dominion of Canada, have invented certain new and useful Improvements in Dispensing-Machines, of which the following is a specification.

This invention relates to an improved coin controlled vending machine of the rotary drum type and the principal object of the invention is to provide improved means for rotating the drum in order to bring a compartment thereof into operative relation to the outlet spout of the machine, to further provide improved means for moving the closures of the drum compartment to an open position, to so construct the machine that the drum turning lever cannot be moved unless a coin is placed in the coin chute and to further so construct the machine that a signal bell will be rung when the drum has made a complete revolution.

Another object of the invention is to so construct and mount the closure opening device that it may be moved and releasably held in an inoperative position when filling the machine thus preventing the closures from opening while filling the machine.

This invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a view shown with the housing in vertical section, the view being taken along the line 1—1 of Fig. 3.

Fig. 2 is a vertical sectional view taken along the line 2—2 of Fig. 3.

Fig. 3 is a vertical transverse sectional view taken along the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary sectional view through the drum and housing taken along the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary sectional view taken along the line 5—5 of Fig. 1.

Fig. 6 is a fragmentary sectional view through the coin chute taken along the line 6—6 of Fig. 1.

Fig. 7 is a fragmentary sectional view through the drum.

This improved coin controlled vending machine is provided with a housing 10 having an outlet 11 through which extends the chute 12 for the merchandise to be sold. This housing is further provided with a closure 13 for permitting access to the interior of the housing for refilling and removing the coin in the coin tray or box 14 and is provided in its upper wall with an opening through which extends the upper end portion of the coin chute 15. This coin chute 15 extends downwardly into the housing and is provided with an enlargement at the head of the inclined lower end portion 16 forming a chamber 17 for a purpose to be hereinafter described. A plunger 18 is slidably mounted in the neck 19 extending from the coin chute adjacent the chamber 17 and is provided with an actuating stem or handle 20 which extends through a slot 21 in the housing so that the plunger may be moved downwardly after a coin has been placed in the coin chute. A spring 22 is connected with the housing and with the upper end portion of the plunger thus serving to yieldably hold the plunger in a raised position.

The drum 23 is mounted upon a shaft 24 journaled in the side walls of the housing 10, the shaft carrying a ratchet wheel 25 for engagement by the pawl 26 carried by the arms 27 of the actuating lever 28. This actuating lever extends beneath the abutment or bumper 29 and is engaged by the spring 30 which normally holds the actuating lever in the position shown in Fig. 1 with its free end portion extending into the coin chute at the upper end of the chamber 17. When a coin is placed in the chute 15, it passes down into the chute at the base of the neck 19 where it will rest upon the free end portion of the actuating lever 28. The plunger 18 can then be moved downwardly and will engage the coin and through the medium of the coin will swing the lever 28 which lever through the medium of pawl 26 will rotate the drum and bring a filled compartment into position for emptying the contents upon the chute 12. After the actuating lever has been swung downwardly a sufficient extent to move the drum the proper amount, the coin which will then be positioned in the chamber 17 will slip past the lever and the spring 30 will return the lever to the position shown in Fig. 1 as soon as the plunger has returned to its normal position. In order to prevent the drum from moving beyond a desired amount there has been provided a latch 31 of the spring pressed type fitting into a socket 32 and engaged by a spring 33 therein so that this latch pin will be held extended for fitting into the recesses 34 formed in the side wall of the drum.

The drum is provided with a plurality of

compartments 35 having trays 36 positioned therein and provided with closure doors 37 hingedly mounted as shown at 38 and yieldably held in a closed position by springs 39. These closure doors 37 are provided with pins 40 which extend beyond the side of the drum for engagement with the cam 41 as indicated in Fig. 2 by dotted lines. As these arms or pins 40 engage the cam, they will move the closures to an open position thus permitting the contents of the compartments 35 to drop upon the chute 12. This cam 41 is pivotally mounted and is provided with a bracing bar 42 which will normally be in engagement with pin 43 thus holding the cam extended as shown in Figs. 1 and 2. When it is desired to fill the machine, it will of course not be desired to have the compartments empty upon reaching the opposite position with respect to the chute 12 and therefore the bracing bar 42 will be disconnected from pin 43 and connected with pin 44 thus drawing the cam to the position indicated by dotted lines in Fig. 2 and preventing the pin 40 from engaging the cam. A signal bell 45 is mounted in the upper portion of this housing 10 in operative relation to the strikers 46 which strikers engage the ratchet wheel 47. A pin 48 extends from the drum and after the drum makes a complete revolution, this pin will engage the pawl or lever 49 and move the pawl so that the ratchet wheel will rotate thus moving the strikers 46 to ring the signal bell 45. Therefore this signal would serve both to indicate that the machine has been completely emptied and further as means for indicating that the filling was completed.

It will thus be seen that there has been provided a dispensing machine in which the coins may be placed in the coin chute and the plunger 18 then moved downwardly to bring the coin into engagement with the lever 28 and move the lever to rotate the drum thus bringing a filled compartment into operative relation to the chute 12 with the closure door of the compartment opening to permit the contents of the compartment to drop upon the chute. It will be further noted that this machine cannot be operated unless the coin is placed in the chute for without the coin being in place, the plunger 18 cannot reach the lever 28. It will be further noted that the drum will be prevented from moving beyond a desired amount for one operation due to the fact that the spring latch pin 31 will prevent rotation of the drum beyond a desired amount. It will be further noted that the machine can be easily refilled and the coins removed from the coin tray when the closure door 13 is removed and further that when filling, the closures 37 can be prevented from opening by moving the cam 41 to an inoperative position. It will thus be seen that there has been provided a very efficient coin controlled dispensing machine which may be built in any size and for any size of coin according to the value and quantity of goods to be dispensed.

What is claimed is:—

1. A vending machine comprising a housing, a drum rotatably mounted in the housing and provided with article receiving chambers, closures for the chambers movably mounted and yieldably held in a closed position, abutments extending from the closures, a cam mounted for engagement with the abutments to engage the abutments and move the closures to an open position as the drum rotates, and means for rotating the drum.

2. A vending machine comprising a housing, a drum rotatably mounted in said housing and provided with article receiving compartments, closures for the compartments movably mounted and yieldably held in a closed position, a cam movably mounted in the housing, abutments extending from the closures for engaging the cam and moving the closures to an open position as the drum is moved to successively bring the article compartments into operative relation to the outlet of the housing, a bracing rod connected with the cam element for holding the cam element in an adjusted position for engagement with the abutments of the closures when in one position and for permitting the drum to rotate without the abutments engaging the cam element when the cam element is in a set position, and means for rotating the drum.

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

HUGH A. BLACK.

Witnesses:
G. C. WOODWARD,
M. L. RANEY.