No. 879,284. PATENTED FEB. 18, 1908.

W. C. MAYO & J. HOULEHAN.

TICKET VENDING MACHINE.

APPLICATION FILED FEB. 2, 1907.

3 SHEETS—SHEET 1.

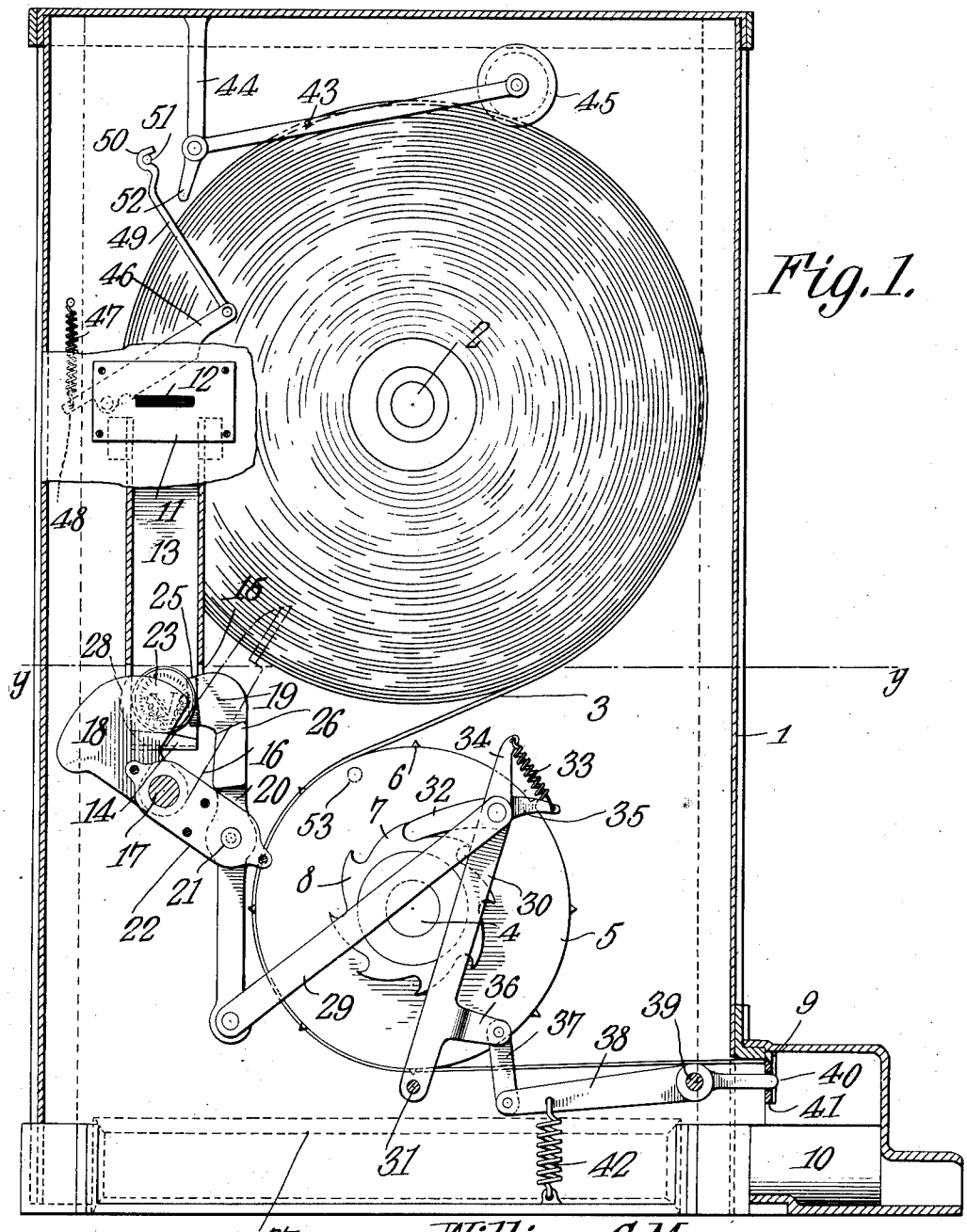


Fig. 1.

William C. Mayo AND John Houlehan INVENTORS

WITNESSES:

E. F. Stewart

F. T. Chapman

By C. A. Snow & Co.

ATTORNEYS

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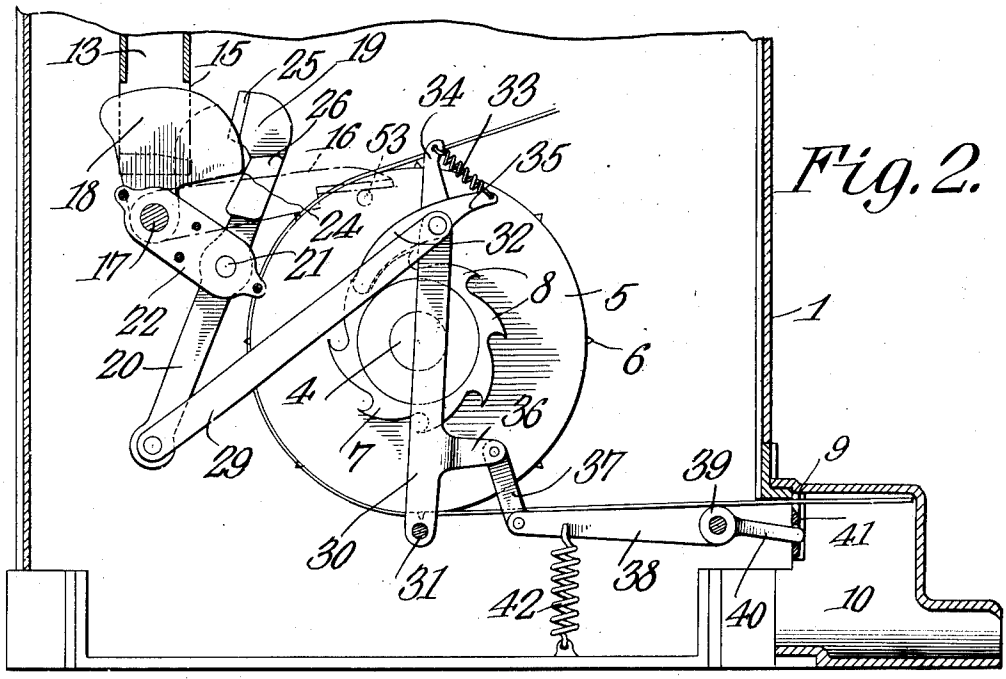
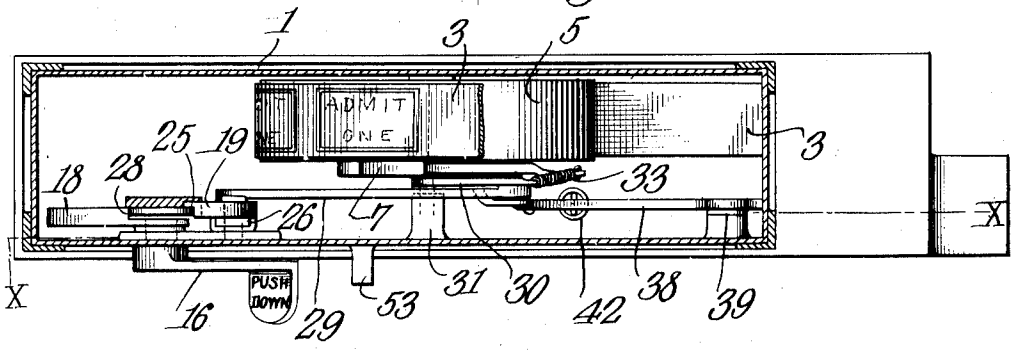


Fig. 2.

Fig. 3.



William C. Mayo
John Houlehan AND
INVENTORS

WITNESSES:
E. F. Steinmetz
F. T. Chapman

By C. A. Snow & Co.
ATTORNEYS

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3 SHEETS—SHEET 3.

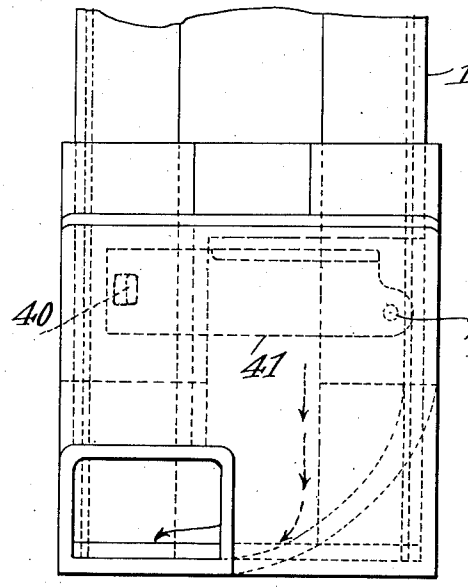


Fig. 4.

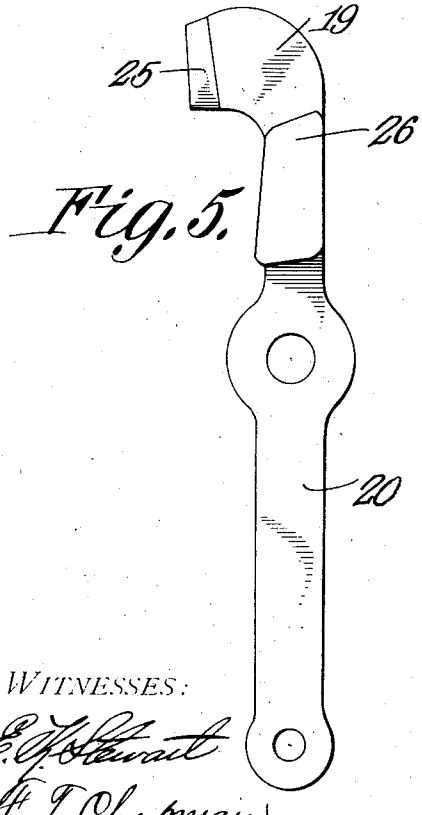


Fig. 5.

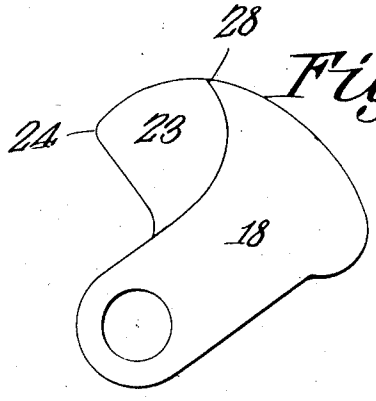


Fig. 6.

WITNESSES:

E. J. Stewart

F. J. Chapman

William C. Mayo
John Houlehan AND
INVENTORS

By C. A. Snow & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM C. MAYO AND JOHN HOULEHAN, OF EL PASO, TEXAS, ASSIGNORS OF ONE-THIRD TO GEORGE E. BRIGGS, OF EL PASO, TEXAS.

TICKET-VENDING MACHINE.

No. 879,284. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed February 2, 1907. Serial No. 355,458.

To all whom it may concern:

Be it known that we, WILLIAM C. MAYO and JOHN HOULEHAN, citizens of the United States, residing at El Paso, in the county of El Paso and State of Texas, have invented a new and useful Ticket-Vending Machine, of which the following is a specification.

This invention has reference to improvements in coin-controlled ticket selling machines, and its object is to provide means whereby tickets in the form of a continuous web may be delivered one by one each time a suitable coin is inserted, the said web being fed forward by mechanism operated through the intermediary of the said inserted coin, and the tickets being finally cut from the web and delivered to the customer.

The invention consists essentially of means whereby the coin inserted is employed as the intermediary for transmitting motion to an operating system of levers through a portion of their travel necessary for the complete operation of the machine, then releasing the coin so that it may drop into a suitable receptacle, and finally completing the operation of the machine after the coin has passed beyond the control of the purchaser, so that by no means can the purchaser retract the coin through the opening in which it was inserted.

The invention also comprises means whereby any cord or wire attached to the coin by an unscrupulous person for the purpose of removing the coin after the machine has been operated, will be severed before the operation of the machine is complete and the coin will therefore fall into the receptacle provided for it.

The invention also comprises means whereby notice is given to an intended customer that the machine has become exhausted of its contents, should such be the case, and the customer is thereby saved the loss of his coin.

The invention will be fully understood from the following description taken in connection with the accompanying drawings forming part of this specification, in which,—

Figure 1 is a vertical section on the line *x*—*x* of Fig. 3; Fig. 2 is a similar section of the lower portion of the machine, showing another phase of operation from that shown in Fig. 1; Fig. 3 is a cross section of the machine upon the line *y*—*y* of Fig. 1; Fig. 4 is an end elevation of the delivery portion of the machine; and Figs. 5 and 6 are detail views of the coin-grasping heads of the operating system of levers.

Referring to the drawings, there is shown a casing 1 of suitable construction within which, near its upper end, is mounted a shaft or spindle 2 for carrying a roll consisting of a continuous web 3 upon which the tickets to be delivered by the machine may be printed *seriatim*.

In the lower portion of the casing there is another shaft 4 upon which is mounted a toothed disk 5, the teeth 6 of which are spaced apart a distance equal to the length of a ticket, and fast upon this disk 5 there is a toothed ratchet wheel 7 having a similar number of teeth 8 as there are teeth 6 on the disk 5. The ticket web is fed from the roll carried upon the shaft 2 over and around the disk 5 which is located immediately below it, and ultimately reaches an opening 9 leading into a receptacle 10 where the ticket falls within reach of a customer after having been severed from the web by means to be hereinafter described.

Appropriately located on one side of the casing is a plate 11 in which is formed a coin-receiving slot 12 opening into a vertical coin-chute 13, the bottom 14 of which is closed and slightly inclined, as shown, while one side of the lower end of this coin chute is cut away, as shown at 15, to admit of the passage of certain portions of the operating mechanism.

Outside the casing there is an operating lever 16 mounted upon an arbor 17 suitably journaled in the casing and carrying at its inner end a dog 18 so located as to normally lie partly within the lower end of the coin chute 13. Also lying normally within this lower end of the coin chute 13 is the upper curved head 19 of a lever 20, which latter is pivotally mounted upon a stud 21 projecting from a plate 22 fast on the inner side of the casing and also constituting a support for the arbor 17. The dog 18 has formed on one side, so as to partially embrace the coin, a cheek 23 terminating in a nose 24, and the curved end 19 of the lever 20 has formed thereon a lip 25 so located as to partially embrace the other side of the coin when it reaches the bottom of the chute. Now, on moving the lever 16 about its axis, the dog 18 will be forced toward the curved head 19 of the lever 20 and the coin will be grasped by these two parts, so that the movement of

the dog 18 will be transmitted to the lever 20 and the latter will participate in such movement.

In the path of the nose 24 of the dog 18 the lever 20 has formed on it a lug 26, and the upper face of the cheek 23 is so curved as to constitute a cam face which, on the continued movement of the dog on its axis, ultimately comes in contact with the lug 26, as shown in Fig. 2, and forces the lever 20 to turn on its pivot more rapidly than is the movement of the dog 18. Because of this more rapid movement of the lever 20, the head 19 is moved away from the dog 18 and the coin is no longer held between these two parts, and, therefore, drops into the receptacle 27 located in the bottom of the casing, and indicated by dotted lines in Fig. 1.

At the junction of the cheek plate and body of the dog 18 the latter is curved, as shown, to constitute a pocket to receive the edge of the coin, and at its upper end this pocket is formed with a sharp edge 28 against which a cord or wire, if fastened to a coin by an unscrupulous user, will be brought, and any effort to withdraw the coin will result in the severing of this cord or wire and the coin will thereofre fall into the receptacle provided for it.

The other end of the lever 20 is connected by a link 29 to a rock arm 30 mounted upon a stud 31 near the lower end of the casing and adjacent to the disk 5 and ratchet 7 thereof. Near the upper end of this rock arm 30 is pivoted a pawl 32 controlled by a spring 33 fast to projecting fingers 34—35 on the rock arm 30 and pawl 32 respectively. During the movement of the lever 20 under the action of the dog 18 and coin between the same and the further movement of the lever 20 under the direct action of the dog 18, the rock arm 30 has been moved by means of the connecting link 29 in a direction to rotate the disk 5 to draw the ticket web from the roll mounted on the shaft 2, and also to force it through the opening 9. When the lever 16 is released by the user, the parts all return to their normal position through the action of a spring to be described, and then the pawl 32 is moved back into engagement with another tooth 8 of the ratchet 7.

Near the pivotal point of the rock lever 30 it is provided with a right angle arm 36 whereby this portion of the lever is converted into a bell-crank lever, and by means of a link 37 the member 36 of this lever 30 is connected to one end of another lever 38 pivoted at 39 in the casing and having the end 40 projecting from the other side of the pivot in engagement with a knife blade 41 pivoted at 42′ so as to move across the slot 9 at the ticket-delivery end of the machine and thereby shear off the tickets after they have been projected through said slot 9. The action of the parts controlling the knife 41 is so timed that this knife will reach the web to be severed after it has been projected a sufficient distance to correspond with the length of a ticket; that is, the knife moves into position to sever the ticket during the return stroke of the actuating mechanism to normal position, at which time the ticket web has already been moved a sufficient distance through the opening 9 and is then stationary.

In order to return the several parts to their normal position, the lever 38 is under the control of the spring 42 so acting that when the operating lever 16 is moved by the customer this spring will be put under additional stress, and when said lever 16 is released by the customer all the parts will return to their initial position.

In order to apprise a customer that the machine is empty, should such be the fact, there is provided a follower arm 43 pivotally mounted on a stud 44 projecting downward from the top of the casing. This follower arm 43 carries upon one end a roller 45 engaging the periphery of the web roll mounted upon the shaft 2 and which is heavy enough to fall by gravity and follow the web roll as the diameter of the latter decreases.

Secured to the casing adjacent to the opening 12 there is a pivoted shutter plate 46 under the control of a spring 47 fast at one end to the casing and at the other to a finger 48 on the plate 46 at one side of the pivot point, so that this spring at all times tends to move said plate across the opening 12 and thereby close said opening, the plate, under those circumstances, abutting against the upper end of the coin chute 13. This plate 46 is held away from the opening 12 by a hooked rod 49 having a hook 50 arranged to engage a fixed pin 51 on the side of the casing, and this pin is located in the path of an angle finger 52 fast on the arm 43, so that as the arm is lowered by the exhaustion of the ticket web, the finger 52 will ultimately be brought into engagement with the hooked rod 49 and force the hook 50 out of engagement with the pin 51, whereupon the spring 47 will immediately move the plate 46 across the opening 12 and so close the same, thus notifying the customer that the machine is out of commission. It will be understood, of course, that the relative lengths of the arm 43 and finger 52 are such that their movements are properly timed to perform the functions ascribed to them.

The plate 46 may either carry or be made to manipulate a legend which will notify the intended customer that the machine has become exhausted.

It will be observed that should an attempt be made to operate the machine without first inserting a coin, the nose 24 of the dog 18 will find a seat on the top of the lug 26 of the lever 20 and the whole mechanism will be effectually locked against operation. It is only

when a coin of the proper size is inserted in the machine that the nose 24 and the cam face formed by the cheek 23 will engage the face of the lug 26 because the coin has caused a sufficient movement of the lever 20 upon its pivot to enable the nose 24 to escape contact with the top of the lug 26.

In order to limit the downward movement of the operating lever 16, there is arranged in the path of the same on the outside of the casing a stop pin 53, the action of which will be apparent from the position of said lever as shown in dotted lines in Fig. 2.

I claim:—

1. In a coin-controlled vending machine, an operating lever, a dog carried thereby and provided with a cam-face cheek terminating in a nose, and a lever connected to the vending mechanism and provided with a cheek coacting with the cheek on the dog to constitute a receptacle for a coin, said lever being also provided with a lug and arranged to be moved by the said dog through the intermediary of an inserted coin to bring the cam face into engagement with the lug to accelerate the speed of the lever and thereby release the coin.

2. In a coin-controlled vending machine, a coin conduit, a pivoted dog having a cheek terminating in a cam face and arranged to traverse the coin conduit, an operating means exterior to the machine and connected to said dog, and a pivoted member connected to the vending mechanism and having a head provided with a cheek normally overlapping the cheek on the dog but spaced therefrom to form a receptacle between the two cheeks, for a coin, said pivoted member also being provided with a lug in the path of the cam face on the dog.

3. In a coin-controlled vending machine, a pivoted dog normally within a coin conduit and having a cheek formed on one side, with the body of the dog adjacent to the cheek curved to constitute a pocket to receive the edge of a coin, and a pivoted member connected to the vending mechanism and also having a cheek normally overlapping the cheek on the dog but spaced therefrom, said space constituting a pocket for the reception of the coin between the dog and the pivoted member.

4. In a vending machine, a coin conduit, a pivoted dog having formed on one side a cheek normally extending into the coin conduit, said dog having its edge adjacent to the cheek curved to constitute a pocket to receive the edge of a coin and terminating at its upper end in a sharp edge and said dog being arranged to traverse the coin conduit, and a pivoted member connected to the vending mechanism and provided with a head between which and the dog an inserted coin is grasped.

5. In a coin controlled vending machine provided with a coin chute and containing the material to be vended in the form of a roll, a follower having a slow progressive movement caused by the reduction in diameter of the roll, a shutter for the coin slot at the entrance of the coin chute, normally out of engagement therewith and locked against movement, actuating means for the shutter individual thereto for causing a quick traverse of the shutter across the coin slot, and means on the follower active at the completion of its movement when the roll is exhausted to then unlock the shutter to the control of the individual actuating means therefor.

6. In a coin-controlled vending machine for tickets, a web roll of tickets contained in said machine, coin-controlled mechanism for feeding the tickets from said web, a shutter for closing the coin slot, a spring tending to move the shutter to the closed position, a latch normally holding the shutter in the open position, a gravity follower resting on the web roll, and an unlatching finger for the shutter carried by said follower and timed in movement to release the shutter when the web roll is exhausted.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM C. MAYO.
JOHN HOULEHAN.

Witnesses to signature of WM. C. MAYO:
W. A. WARNOCK,
JOHN L. SPADER.

Witnesses to signature of JOHN HOULEHAN:
A. M. WATEHALL,
HARRIS WATEHALL.