S. L. W. COE & H. T. & E. W. WERDEN.

VENDING MACHINE.

APPLICATION FILED OCT. 22, 1912.

1,074,607. **Patented Oct. 7, 1913.**

4 SHEETS—SHEET 1.

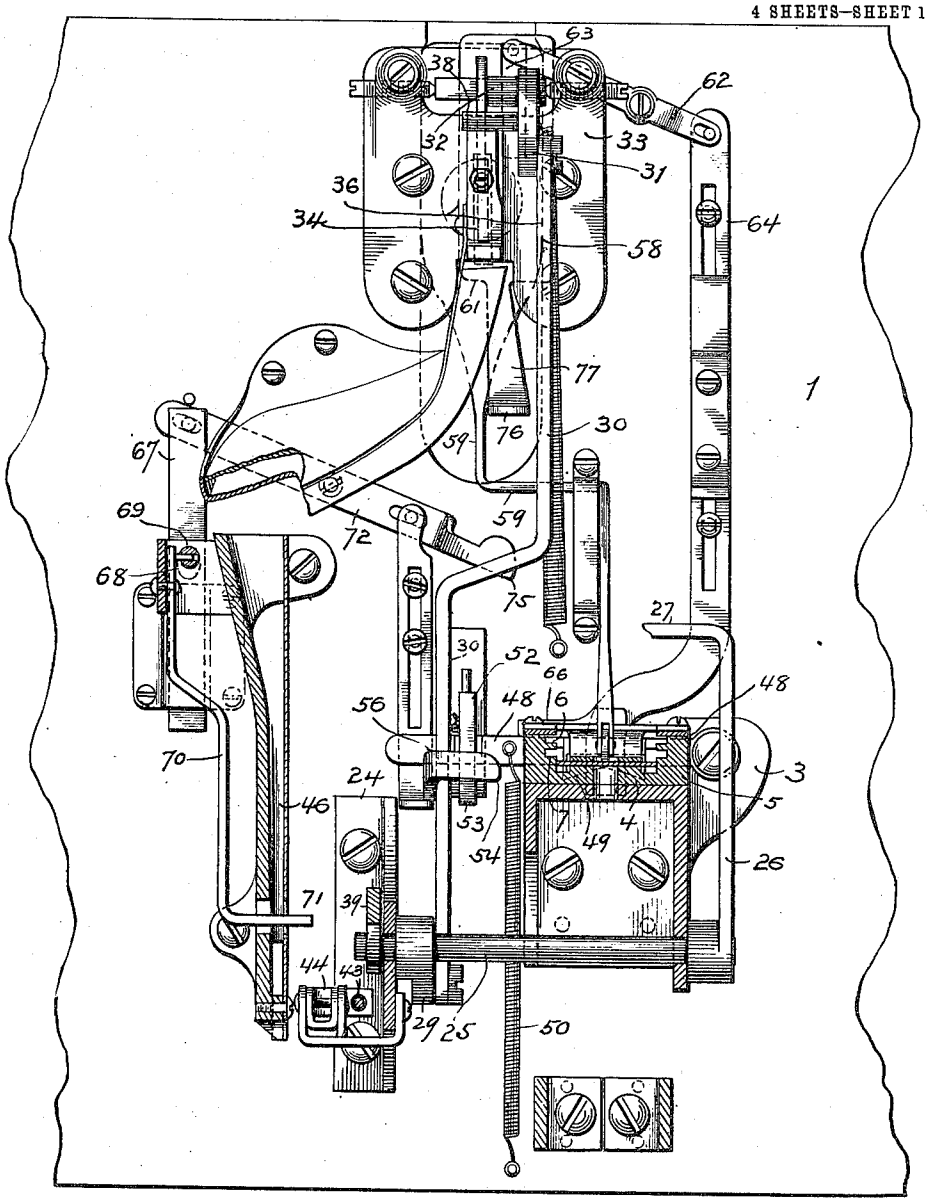


FIG. 1.

WITNESSES

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4 SHEETS—SHEET 2.

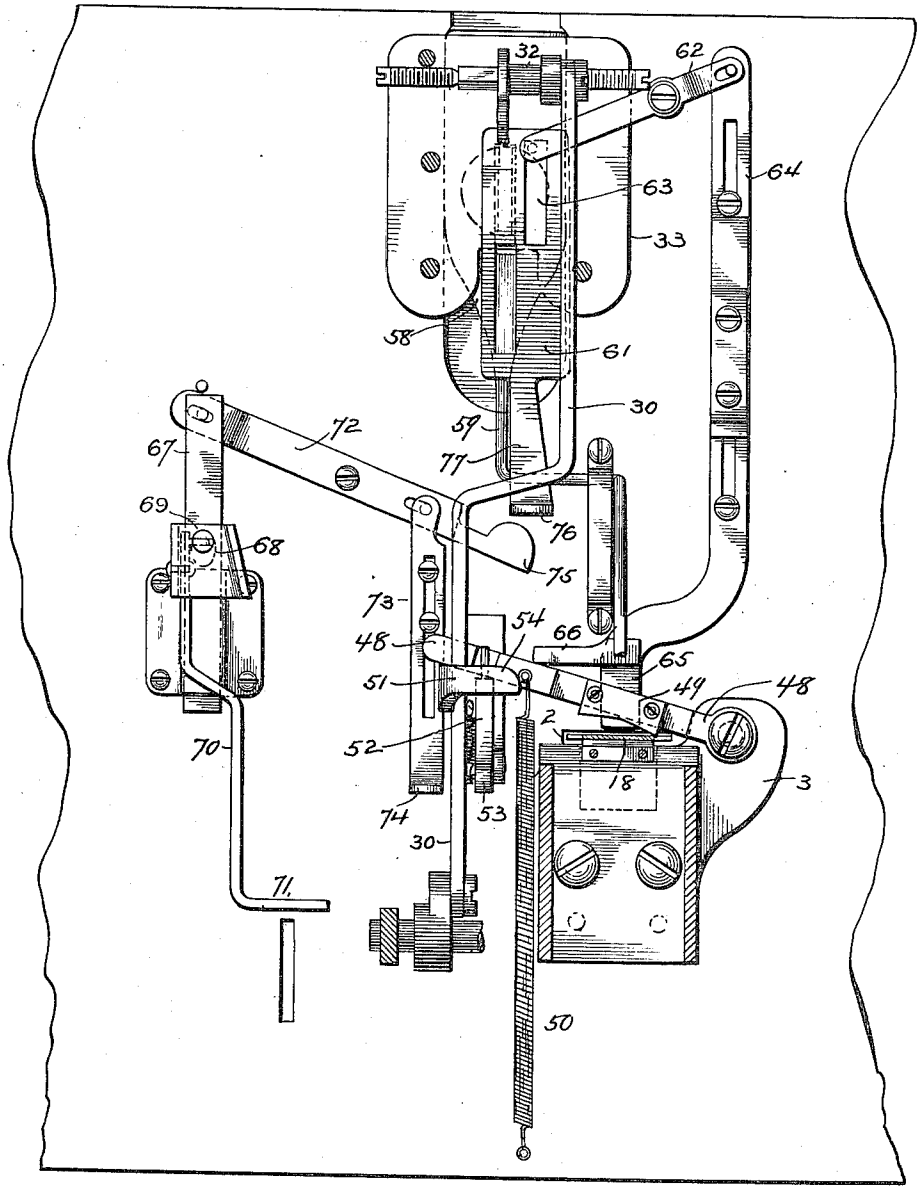


Fig. 2.

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4 SHEETS—SHEET 3.

Fig. 4.

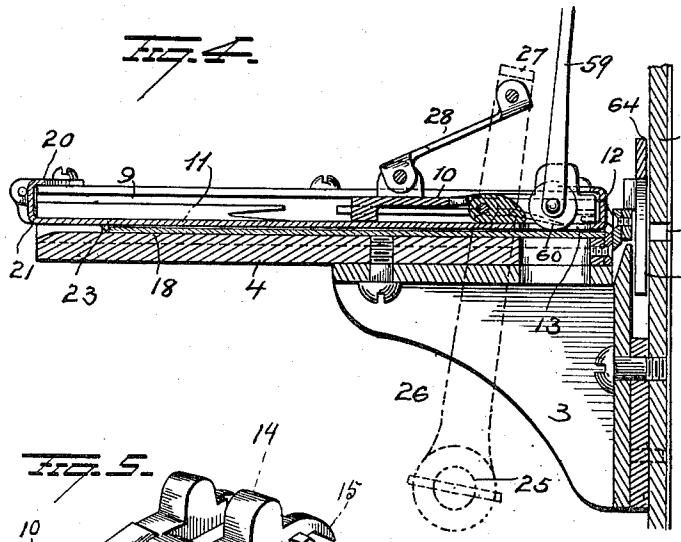


Fig. 5.

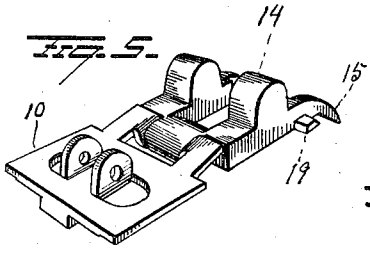


Fig. 3.

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4 SHEETS—SHEET 4.

Fig. 6.

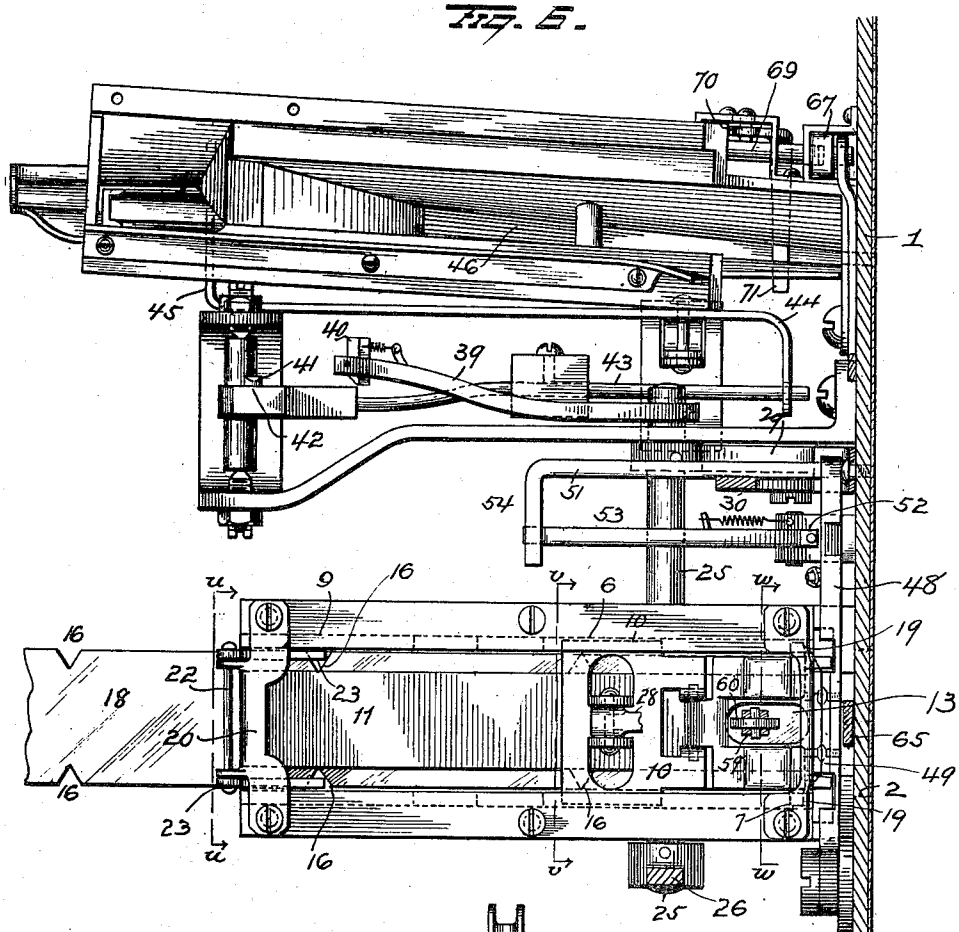


Fig. 7.

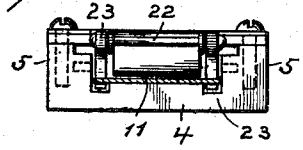


Fig. 8.

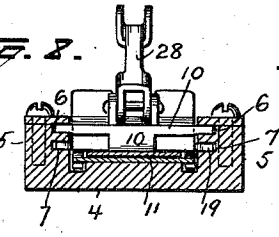


Fig. 9.

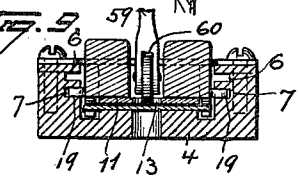
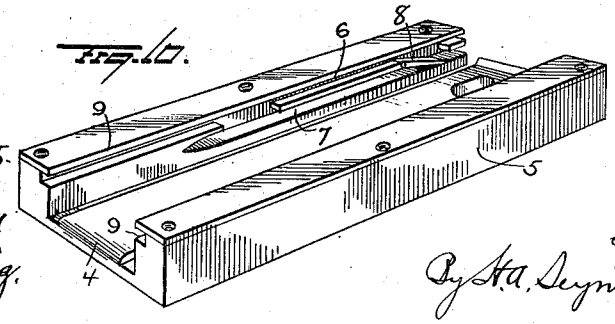


Fig. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

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VENDING-MACHINE.

1,074,607. Specification of Letters Patent. Patented Oct. 7, 1913.

Application filed October 22, 1912. Serial No. 727,202.

To all whom it may concern:

Be it known that we, SARA L. W. COE, HENRIETTA T. WERDEN, and EDWARD W. WERDEN, citizens of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vending-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in vending machines and more particularly to such as are adapted for use in vending tickets and the like,—the object of the invention being to provide simple and efficient vending means constructed and adapted to feed a strip of tickets; discharge the same one at a time, and sever the discharged ticket from the strip.

With these and other objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings; Figure 1 is a rear view, partly in section, of a mechanism embodying our improvements; Fig. 2 is a rear view partly in section showing parts of the mechanism in positions of the shutter mechanism when the coin slot is closed; Fig. 3 is a side elevation; Fig. 4 is an enlarged sectional view showing the feed devices; Fig. 5 is an enlarged perspective view showing the feeding pawls; Fig. 6 is a plan view partly in section of the mechanism; Fig. 7 is a section on the line *u*, *u* of Fig. 5; Fig. 8 is a section on the line *v*—*v* of Fig. 5; Fig. 9 is a section on the line *w*—*w* of Fig. 5, and Fig. 10 is a perspective view of the platform of the feed mechanism.

1 represents a face plate provided with a ticket discharge slot 2 and in rear of the latter a bracket 3 is secured to said face plate and supports a platform 4 disposed horizontally. This platform is elongated and provided at its side edges with upwardly projecting flanges or enlargements 5. The platform between the side flanges 5 is of a width approximately equal to or slightly greater than the width of the tickets to be vended and in the inner faces of said flanges grooves or guideways 6—7 are provided and extend approximately half way the length of each of said flanges. The guideways 6—7 in each flange 5 are located one above the other and at the forward ends of said guideways, switch points 8 are pivotally mounted and normally close the forward ends of the guideways 6. Rearwardly of the guideways 6—7, flanges 5 of the platform are provided with guideways 9 for the accommodation of a slide 10. Located over the platform and spaced slightly therefrom, is a thin metal plate 11 of appreciably less width than that of the platform and extending from end to end of the latter,—the forward end of said plate being provided with an upturned lip 12 and in rear of said lip with an opening 13. A weighted head 14 is pivotally attached or hinged to the forward end of the slide 10 and provided with two dogs 15 disposed at respective sides of the thin metal plate 11 and adapted to engage notches 16 in the edges of a ticket strip 18,—said notches being located at the juncture of the tickets of said strip. The hinged head 14 is also provided with laterally projecting pins 19 to move through the guideways 6—7. At the rear end of the platform 4, a cross-bar 20 is secured at its ends to the ends of the flanges or enlargements 5 and this cross-bar is provided with a depending portion 21 integral at its lower end with the rear end of the thin metal plate 11. The depending portion of the cross-bar is provided with ears through which a pin 22 passes and to this pin, dogs 23 are connected and adapted at their forward ends to engage notches in the ticket strip and prevent retrograde movement of the latter.

A bracket 24 projects rearwardly from the face plate 1 and in this bracket, one end of a shaft 25 is mounted,—the other end of said shaft having a mounting in a depending portion of the bracket 3. To the end of the shaft 25 adjacent to the bracket 3, an arm 26 is secured and provided at its upper end with a finger 27 which projects laterally and partially over the platform 4. The free end of the finger 27 has pivotally attached thereto one end of a link 28, the other end of said link being pivotally connected with the slide 10.

The ticket strip is adapted to pass over the platform 4 and under the thin metal plate 11 to the discharge end of said platform. Normally, the slide and the weighted head attached thereto will be disposed at the forward end of the platform with the dogs 15 resting on the platform. When the shaft 25 is turned in one direction, the arm 26 thereon will be moved and the slide 10 with the weighted head 14 will be moved rearwardly. As the slide 10 and head 14 start to move rearwardly, the pins 19 on the weighted head will move over the switch points 8 and then slide in the guideways 7, thus raising the dogs 15 out of the path of the ticket strip. When the weighted head carrying the dogs reaches the rear end of its throw, the pins 19 will drop from the guideways 7 and become disposed in line with the lower guideways 6 and the dogs 15 will drop in notches 16 in the edges of the ticket strip. During the forward movement of the slide 10 and the weighted head 14, the engagement of the dogs 15 with the notched ticket strip, will cause the latter to be fed forward a distance equal to the length of one ticket and to project said ticket through the discharge slot 2 in the face plate.

The shaft 25 is provided with an arm 29, to which the lower end of a bar 30 is pivotally attached. The upper end of the bar 30 is pivotally connected with an arm 31 on a shaft 32. Shaft 32 is mounted in a bracket 33 secured to the face plate and is provided with an arm 34 which depends into the upper end of a coin guide 35 and directly behind the coin inlet slot 36 in the face plate 1. The upper end of a spring 37 is attached to the arm 31 and the lower end of this spring is connected with the bracket of platform 4. This spring exerts a downward force on the arm 31 and normally maintains the depending arm 34 in position to be engaged by a coin inserted into the machine,—the downward movement of the arm 31 being limited by the engagement of a pin 38 thereon with the upper end of the coin guide 35. An arm 39 projects rearwardly from the shaft 25 adjacent to the bracket 24 and is provided at its free end with a spring pressed tooth 40 to coöperate with teeth 41 on a block 42 pivotally attached to the free end of the bracket 24 and projecting upwardly from the latter. A weighted arm 43 projects forwardly from the pivoted block 42 and is loosely connected at its forward end with one arm of a pivoted trip-lever 44. The rear end of the trip-lever 44 is provided with a laterally projecting finger 45 movable freely through slots in the lower portion of a coin chute 46 so that when a proper coin falls upon the finger of the trip-lever, the latter will be turned on its fulcrum and motion will be transmitted to the pivoted block 42 to release the teeth on the latter from the spring pressed tooth 40 on the arm 39. The coin chute 46 is also provided with an outlet 47 for improper coins.

Normally the ticket feeding devices will be at the forward end of their movement and the arm 39 carrying the spring pressed tooth 40 will be elevated. When a coin is inserted through the coin inlet slot 36, the pressure of the coin against the depending arm 34 will cause the shaft 32 to be turned and this movement of the shaft will be transmitted, through the medium of the arm 31, bar 30 and arm 29 to the shaft 25 and the spring 37 will be placed under tension. As the shaft 25 is thus rotated, the ticket feeding devices will be moved to the rear end of their throw as previously explained and the tooth 40 on the arm 39 will engage the teeth 41 on the pivoted block 42. As soon as the coin, passing through the chute, drops on the trip-lever, the mechanism will be released as above described and will be propelled by the action of the spring 37 and the ticket strip fed forwardly.

Between the forward end of the platform 4 and the rear face of the face plate 1, a knife bar 48 is pivotally mounted and provided with a blade 49 to sever a ticket from the strip at the forward end of the platform and slightly in rear of the discharge slot in the face plate 1. A spring 50 tends to pull the knife-bar downwardly but said knife-bar is raised when a coin inserted into the machine actuates the shaft 32, by the engagement of an arm 51 secured to the vertically movable bar 30. When the knife bar is thus raised, it will be maintained in such position by the engagement of the upwardly projecting arm 52 of a spring pressed, L-shaped lever 53. The arm 51 projects rearwardly from the bar 30 and is provided at its free end with a laterally projecting finger 54 disposed over the free end of the L-shaped lever 53 so that when the parts shall have been released by the action of a coin on the trip devices and the ticket feeding mechanism has been moved forwardly, the finger 54 on the arm 51 will strike the L-shaped lever 53 and move the arm 52 of said lever out of the path of the knife bar and the latter will be forcibly pulled downwardly by the action of the spring 50 to partially or wholly sever a ticket from the strip.

A vertically movable shutter 58 is located behind the coin inlet slot and provided with a depending bent arm 59 provided at its lower end over the platform 4 with a small roller 60. When there is no ticket strip on the platform 4 the depending arm 59 and its roller 60 will pass through the opening 13 in the thin metal plate 11 and also through an opening in the platform in alinement with said opening 13, thus permitting the shutter 58 to drop and close the

coin inlet slot to indicate that the machine is empty.

Another shutter 61 is vertically movable in the bracket 33 and the function of this shutter 61 is to close the coin inlet slot immediately after a coin has been introduced into the machine. A lever 62 is pivoted between its ends adjacent to the bracket 33 and provided at one end with a pin which engages an elongated slot 63 in the shutter 61. The other arm of the lever 62 is pivotally attached to the upper end of a vertically movable, weighted bar 64. The lower portion of this bar is bent laterally and then downwardly to form a finger 65 disposed between the knife-bar and the front plate 1 adjacent to the ticket discharge slot 2. The lower portion of the vertically movable bar 64 is provided at the upper end of the finger 65 with a laterally projecting toe 66 adapted normally to rest upon the knife-bar and thus limit the downward movement of the weighted-bar 64 and the upward movement of the shutter 61. When this shutter 61 is at the upper end of its throw, a coin can be passed therethrough for operating the mechanism, or rather for setting the mechanism in position to operate when tripped by the action of the coin on the trip-lever. While the mechanism is thus being "set," the upward movement of the knife-bar will cause the weighted bar 64 to be raised and, through the turning of the lever 62, the shutter 61 to be lowered for closing the coin inlet slot. In this manner, the purchaser will be prevented from inserting a second coin for the purpose of holding the mechanism in position to enable him to pull several tickets from the machine for the price of two or possibly for the price of one. When the mechanism shall have been tripped by the coöperation of the coin with the trip-lever and the knife-bar shall have descended, the weighted bar 64 could descend and reset the shutter 61 if it were not for the fact that the finger 65 would rest upon the rear portion of the severed or partially severed ticket,—assuming of course that the purchaser had not received the ticket from the machine. As soon however as the purchaser removes the ticket, the vertically movable weighted bar 64 will be free to drop and to cause the resetting of the shutter 61.

If an improper coin be inserted into the machine, it might operate to "set the mechanism" but it could not operate to release the trip mechanism and vend a ticket, because it would find its way to the discharge outlet 47. The shutter 61 however would be dropped and it would therefore be impossible to insert even a proper coin into the machine. For the purpose of resetting the shutter 61 when an improper coin, incapable of causing the complete operation of the mechanism, has been inserted into the machine,—the devices now to be explained will be employed.

A vertically movable weight 67 is located near the coin chute and provided with a notch 68 to be engaged by a pin 69 for retaining said weight normally elevated. For the purpose of operating this pin to release the weight 67, a trip-lever 70 is employed and provided at its lower end with a finger 71 to project transversely through the coin chute near the discharge outlet 47. A lever 72 is pivotally supported between its ends by the face plate and connected at one end with the weight 67 by a pin and slot connection. The other arm of this lever is similarly connected with a vertically movable plate 73 having a toe 74 at its lower end. The said lever 72 is also provided with a finger 75 disposed below a toe 76 at the lower end of an arm 77 depending from the shutter 61. Normally the weight 67 is elevated but when an improper coin has been inserted into the machine, it will operate the trip lever 70 to withdraw the pin 69 and thus permit the weight 67 to descend, in descending, the weight 67 will impart motion to the lever 72 and the finger 75 on this lever engaging the toe 76, will cause the shutter 61 to be elevated and thus a purchaser will be enabled to insert a proper coin into the machine to operate the trip-lever 44 to complete the operation of the mechanism and the vending of a ticket. When the proper coin shall have been inserted and the mechanism released the arm 51 will engage the toe 74 at the lower end of the plate 73 and, through the medium of said plate and the pivoted lever 72, raise the weight 67 and permit the engagement of the pin 69 with the notch 68 in said weight to maintain the latter elevated.

Having fully described our invention what we claim as new and desire to secure by Letters-Patent, is,—

1. The combination with discharging means and actuating means therefor, of means for permitting the setting of said actuating means, and means for isolating said mechanism after it has been set and before the discharging means has fully operated.

2. The combination with discharging means and actuating means therefor, of a member having an opening, a shutter for said opening, means for operating the shutter to close said opening, said member also having another opening, and means near said last-mentioned opening for resetting the shutter.

3. The combination with a platform and means for feeding a strip over said platform, of a knife bar carrying a blade for severing the strip, means for operating the knife bar, a member having an opening, a

shutter adjacent to said opening, and means coöperating with the knife bar and shutter to open and close the latter.

4. In a machine of the character described, the combination with a face plate having a slot or opening therein, a platform, means for feeding a strip over said platform and discharging the same, a knife-bar carrying a blade to sever said strip, means for actuating said feeding means and knife-bar, a shutter for the opening in the face plate, a pivoted lever connected with said shutter, and a weighted-bar connected with said pivoted lever and coöperating with the knife-bar to control the position of said shutter.

5. In a machine of the character described, the combination with a face plate having an opening, of a shutter for said opening, means for releasing said shutter to close the opening, a vertically movable weight, a trip normally retaining said weight elevated, and devices coöperating with said weight and shutter to open the latter when the weight has been tripped.

6. In a machine of the character described, the combination with a face plate having a discharge outlet, of a platform communicating with said discharge outlet, flanges or enlargements at the edges of said platform, each of said flanges or enlargements having superimposed guideways, a slide movable over said platform between the flanges or enlargements, a head hinged to said slide and having dogs to engage a strip on said platform, pins on said head to move in the guideways in the flanges or enlargements, pivoted switch points at the forward ends of said guideways for elevating said hinged head and causing the pins thereon to move through the upper guideways during the rearward movement of said slide and head, and means for reciprocating said head and slide.

7. In a machine of the character described, the combination with a face plate having a discharge outlet and a platform communicating with said discharge outlet, said platform having flanges or enlargements at its side edges provided with superimposed guideways, a plate narrower than the platform and disposed slightly above the same, a slide movable between the flanges of the platform, a head hinged to said slide and provided with dogs disposed at respective sides of said plate, pins on said head to move in the superimposed guideways, and means for causing said pins to be elevated from the lower guideways to the upper guideways when the slide and head moves rearwardly.

8. In a machine of the character described, the combination with a face plate having a discharge outlet and a platform communicating with said discharge outlet, of a slide movable over said platform and carrying dogs to engage a strip on the platform to move said strip forwardly, a shaft, an arm secured to said shaft and having a member over the platform, a link connecting said member of the arm with said slide, means for turning said shaft in one direction, trip devices for said shaft, and a spring for moving the shaft in the reverse direction.

9. In a machine of the character described, the combination with a face plate having a discharge opening, of a platform communicating with said discharge opening, a spring actuated knife adjacent to said discharge opening, a trip device for said knife, a shaft, a slide movable over the platform, dogs carried by said slide to engage a strip for feeding the same forwardly, an arm secured to said shaft, a link connecting said arm and slide, a vertically movable bar connected with said shaft, a spring for moving said bar downwardly, trip devices for controlling the release of said bar, and an arm carried by said bar for operating the knife trip.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

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Witnesses:
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ARTHUR J. HARVEY.