Jan. 18, 1944. C. L. CASEY 2,339,681

VENDING MACHINE

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Fig. 1

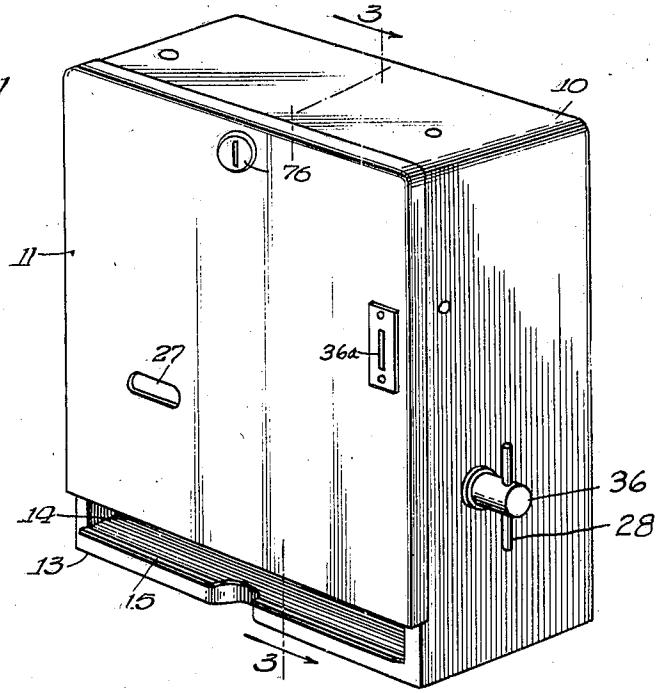
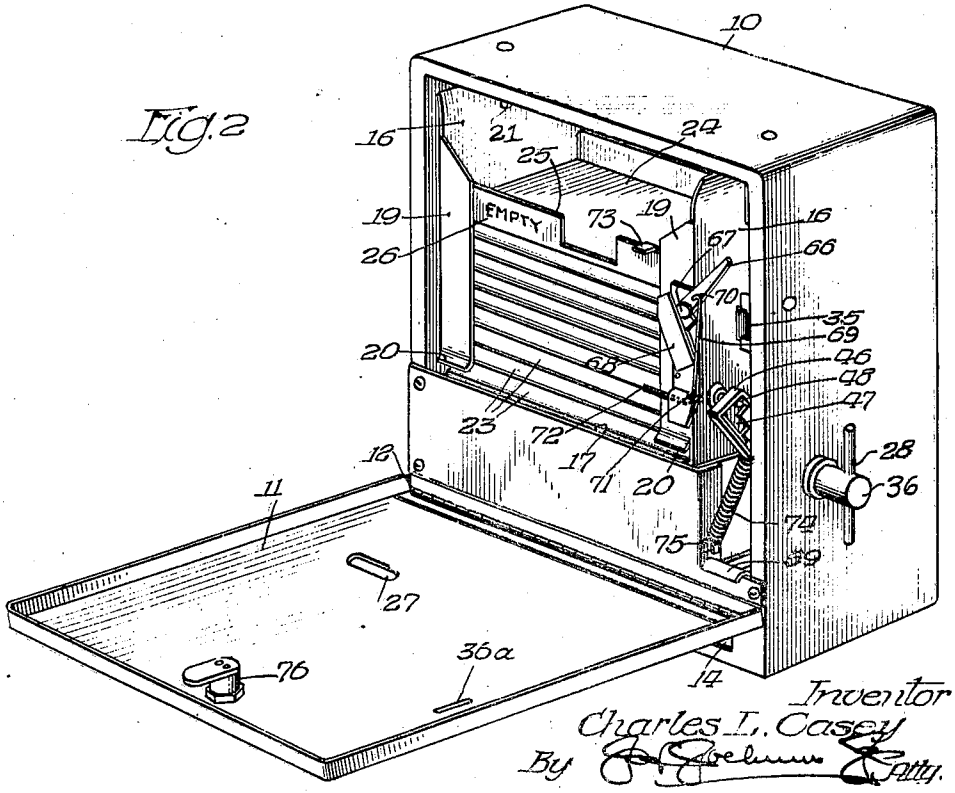


Fig. 2



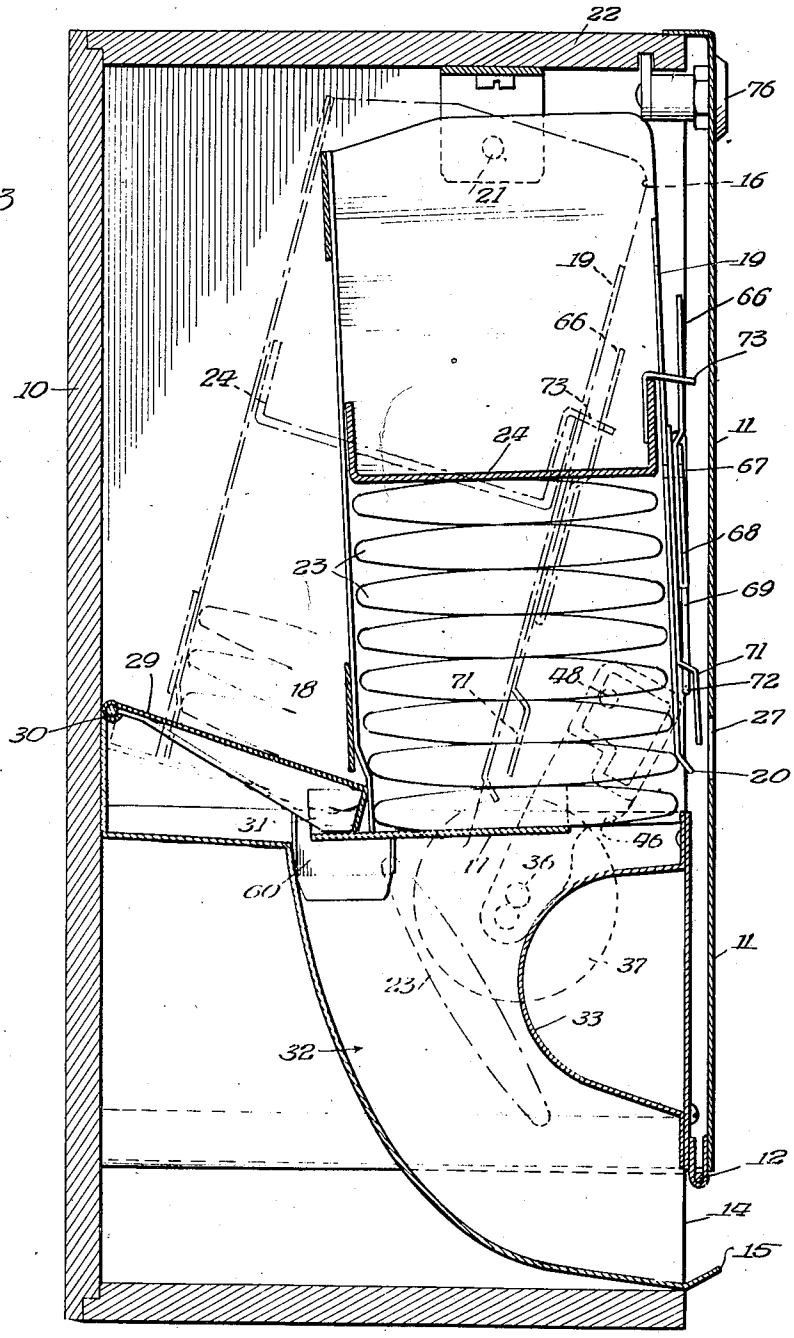
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FIG. 3



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Fig. 4

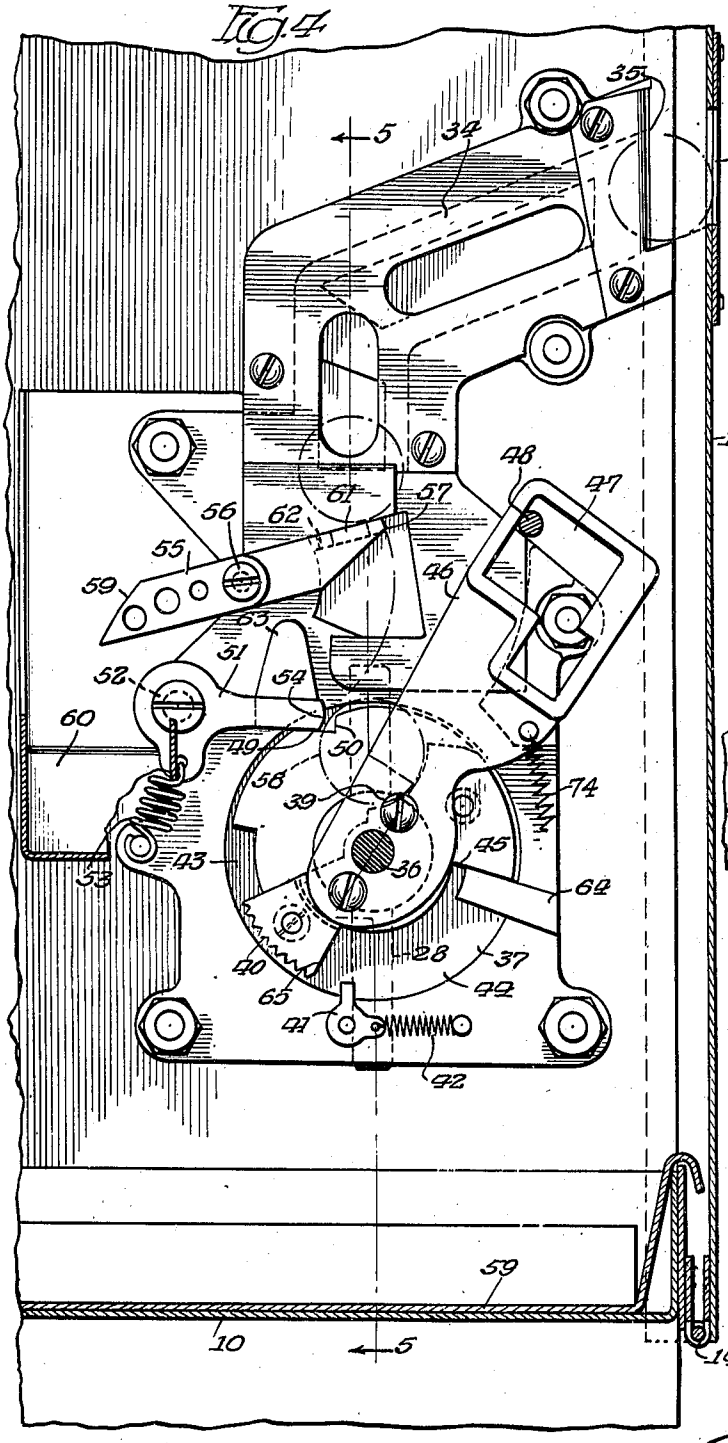
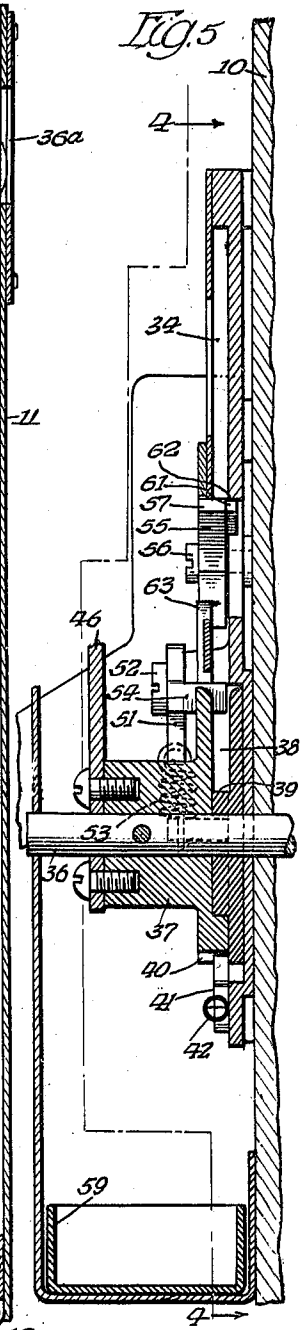


Fig. 5



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UNITED STATES PATENT OFFICE

2,339,681

VENDING MACHINE

Charles L. Casey, Chicago, Ill.

Application April 25, 1942, Serial No. 440,481

1 Claim. (Cl. 194—63)

This invention relates to improvements in vending machines of the type wherein there is embodied means for vending or dispensing an article or commodity upon the deposit of a proper coin or token thereinto, and one of the objects of the invention is to provide improved means such as a swingingly mounted article container with which is associated a fixed ejector, the latter operating, when the container is swung in one direction about its pivot, to eject an article therefrom to be delivered to the operator.

A further object is to provide, in a machine of this character, a runway whereby a coin or token may be delivered into the machine to render the actuating mechanism active, and improved means for automatically closing the runway or rendering it impossible to insert a coin thereinto, when the article holder is empty.

A further object is to provide improved coin control actuating mechanism for swinging the article holder or container about its pivot.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention, and in which

Fig. 1 is a perspective view of a machine of this character constructed in accordance with the principles of this invention.

Fig. 2 is a view similar to Fig. 1, with the front of the enclosing casing open.

Fig. 3 is a vertical sectional view, on an enlarged scale, taken on line 3—3, Fig. 1.

Fig. 4 is a view partly in vertical section, partly in elevation, on an enlarged scale, and with parts omitted, showing the coin control mechanism and as taken on line 4—4, Fig. 5.

Fig. 5 is a detail sectional view taken on line 5—5, Fig. 4.

The machine consists, essentially, of an enclosing casing 10 which may be of any desired size and configuration, and constructed of any suitable material, the front of the casing being open, and a closure 11 being provided therefor. This closure is preferably connected by means of a hinge 12 to the front of the casing, preferably at a point spaced above the bottom 13 of the casing to provide a discharge outlet 14 for the articles being vended.

An outwardly projecting flange 15 may be provided adjacent the opening 14 to prevent the articles which are delivered through the opening 14 from dropping to the floor.

Within the casing 10 is arranged an article holder or container which preferably comprises side members 16, a bottom 17, and rear members 18 that connect the sides 16. The front of the article holder is preferably provided with inwardly flanged portions 19 that terminate short of the bottom 17, with their lower extremities bent forwardly, as at 20, to facilitate the removal of the articles. The article holder thus formed is swingingly mounted within the casing 10 by means of pivots 21, and these pivots are journaled in suitable bearings such as a bracket 22 secured to a fixed support within the casing.

The articles 23 to be vended are placed within the holder in a superposed position, resting upon the bottom 17, which latter preferably terminates short of the front walls 19 of the holder.

Arranged within the holder and resting upon the articles is a follower 24 which may be provided with a front flange 25 on which may be provided a suitable sign or signal 26. When the holder is empty and when the follower 24 has reached its lowermost position, the signal 26 will be visible through a suitable opening 27 in the front wall or door 11 of the casing.

The article holder is preferably spaced from one side of the wall of the casing 10, so as to provide a space within which the operating mechanism may be arranged. This operating mechanism preferably comprises a coin control mechanism, and an actuating handle 28 forms a part of the operating mechanism and is accessible from the outside of the casing.

Arranged within the casing 10 is an ejector 29 which may be of any desired or suitable construction, the same being pivotally supported, as at 30, upon a fixed support, preferably the back wall of the casing. This ejector 29 is provided with a front flange 31 and, normally, the front edge of the ejector rests upon the bottom 17 of the article holder when the latter is in a normal position. When, however, the holder is swung about its pivot 21 by operation of the handle 28, the flanged end 31 of the ejector will pass through an opening in the back of the article holder, to be engaged by the lowermost article, which latter will then be ejected from the article holder. As the article is thus ejected, it will drop from the holder into a chute 32 to be delivered to the operator through the opening 14. As a means for preventing tampering with the articles in the holder, or the unauthorized removal of an article through the opening 14, there is provided a shield

33, which latter also forms a part of the article delivery chute.

Any suitable means may be provided for controlling the operation of the actuating handle 28 and, consequently, the swinging of the article holder about its pivot for the delivery of articles. Coin control mechanism, however, is preferable, and to that end there is provided a coin runway 34, the entrance 35 to which stands adjacent or in alinement with an opening 36a in the front or closure 11 of the casing 10.

Connected with the shaft 36 of the operating handle is a coin carrier 37 which may be of any desired or suitable construction. Suffice it to say that this carrier 37 is provided with a coin receiving slot or recess 38, so that the coin will rest upon a support 39.

The coin carrier is provided with a toothed or serrated portion 40 about its periphery, with which a pivotally mounted pawl 41 co-operates. This pawl is controlled by a spring 42, and the coin carrier is provided with recessed portions 43, 44, the latter recesses forming a shoulder 45. The recesses 43—44 are provided on each side of the toothed or serrated portion 40, so that when the coin carrier starts its movement in one direction, it must continue such movement until the pawl 41 passes out of engagement with the teeth 40, and until one of the recesses 43—44 is in alinement with the pawl, thereby permitting the pawl to assume its normal position and rendering it possible to reverse the direction of movement of the coin carrier. After the coin carrier has started to move in one direction, it must move to the full extent in the same direction before the direction of rotation of the coin carrier can be reversed.

Connected with the shaft 36 of the actuating handle 28 is an arm 46 which is provided with a slotted or open portion 47 of any desired shape. This arm 46 is disposed in proximity to the side of the coin carrier and within the space between the wall of the coin carrier and the wall of the casing.

A pin or projection 48 is carried by the container wall 16, and projects into the slot or opening 47. It will therefore be manifest that when the handle 28 is moved in one direction, the pin or projection 48 will be engaged by one of the walls of the opening 47 to swing the container in one direction, and when the handle is moved in the opposite direction, the opposite wall of the opening 47 will engage the pin or projection 48 and move the article holder in the opposite direction. Inasmuch as the article holder swings about the pivot 21, and the arm 46 swings about the pivot formed by the shaft 36, they will swing about arcs described in different directions. Therefore, to permit of such movement of the parts, the loose connection between the arm 46 and the container is provided. Such connection is formed by providing the opening 47 in the arm 46, which is of an area considerably greater than the diameter of the pin 48.

The arm 46 is connected with the shaft 36 to which the coin carrier 37 is connected, and by reason of the aforesaid loose connection the coin carrier will be advanced a sufficient distance to cause the coin to render the locking mechanism inactive, in a manner hereinafter described, so that the coin will be discharged from the carrier before the wall of the opening 47 in the arm 46 engages the pin 48 to swing the article holder about the pivot 21. Therefore, in order to control the swinging of the article holder, it is only necessary to control the operation of the handle 28. This is accomplished through the medium of the coin control mechanism.

In the periphery of one of the members of the coin carrier there is provided a recess or cut-away portion 49 to form a shoulder 50.

A dog 51 is pivotally mounted, as at 52, upon a suitable fixed support, and connected also with the dog is a spring 53 which tends normally to move the end 54 of the dog in a direction so that it will be within the path of movement of the shoulder 50 on the coin carrier, to arrest or prevent the rotation of the handle 28. When, however, the dog 51 is moved so that the end 54 will be out of the path of movement of the shoulder 50, the actuator handle, as well as the coin carrier, may be rotated in a direction to swing the article holder to the dotted line position shown in Fig. 3, to eject one of the articles.

During this movement of the coin carrier, the end 54 of the dog 51 will engage and rest upon the periphery of one of the members of the coin carrier. As soon as the handle 28 is moved in the opposite direction to return the article holder to the full line position shown in Fig. 3, the end 54 of the dog 51 will drop down behind the shoulder 50 and thereby lock the coin carrier, as well as the handle 28 and the article holder, against further movement until the dog 51 is again tripped.

The coin runway 34 is arranged to deliver the coin so that it will enter the coin carrier to rest upon the seat 39. Interposed between the discharge end of the runway and the coin carrier is an element 55 which is pivotally supported intermediate its ends, as at 56, and is adapted to be swung or tilted about its pivot. The normal tendency of the element 55 is to assume the position shown in Fig. 4, that is, with the end 57 thereof elevated and in a position that, when a coin passes down the runway, it will drop upon such end. If the coin or token is of the proper size or weight, it will rock the element 55 about its pivot 56 by depressing the end 57, with the result that the coin will drop from said end into the seat 39 of the coin carrier, so that, thereafter, the coin carrier may be rotated by reason of the fact that the edge of the coin 58, which is seated in the coin seat 39, will pass under the end 54 of the dog 51 and raise the latter against the stress of the spring 53.

As soon as the coin carrier is rotated a sufficient distance, and when the edge of the coin passes out of engagement with the end of the dog 51, the coin will drop from the coin carrier into a coin receptacle 59 which is removably seated within the casing 10.

With the parts in the position shown in Fig. 4, and should a coin which is not of the proper denomination or structure be deposited in the runway, it will not be heavy enough to tilt the end 57 of the element 55 downwardly, with the result that the coin will continue to roll upon the element 55, to be discharged from the end 59 thereof through an opening 60 (see Figs. 3 and 4), back to the operator through the opening 14 in the casing 10.

A portion of the element 55 is shaped to form a projection 61 which engages a stop 62 to limit the movement of the element in one direction, and to cause it to assume the normal position shown in Fig. 4. When the dog 51 is raised, and in order to prevent the delivery of a coin into the machine when the mechanism is in operation, the element 55 is locked against a tilting movement, and this is accomplished by means of

a projection 63 on the dog 51, which moves into engagement with the element 55.

A stop 64 is provided in the casing, to be engaged by the shoulder 45 of the coin carrier, to limit the movement of the coin carrier in one direction. A second shoulder 65 is provided on the coin carrier, which may also engage the stop 64 to limit the movement of the coin carrier in the opposite direction.

In order to prevent the insertion of a coin into the coin receiving slot 36a in the front 11 of the casing and, consequently, into the runway 34, there is provided an element 66 in the form of an arm, which is pivotally mounted, as at 67, upon one of the front faces 19 of the article holder.

Attached to the arm 66 is a weight 68 which tends normally to hold the end of the arm elevated and in an inoperative position with respect to the opening 35 of the runway 34. A member 69 is connected by one end, as at 70, to the arm 66, and passes through a suitable guide 71, the free end 72 of the member projecting into the path of movement of a lip or shoulder 73 on the follower 24. When the last article 23 has been dispensed from the article holder, the lip or shoulder 73 on the follower 24 will be in a position that it has engaged the end 72 of the member 69, and depressed the latter, thereby moving the arm or element 66 about its pivot against the stress of the weight 68, so that it will project across and form a barrier to the entrance of any coin into the runway 34. When the follower 24 is elevated, the weight 68 will cause the arm 66 to assume its normal position.

A spring 74 is connected with the arm 46 and anchored to a suitable support, as at 75, and tends normally to move the arm 46 in one direction.

A suitable lock 76 may be provided for locking the front 11 of the casing in a closed position.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claim, without departing from the spirit of this invention.

What is claimed as new is:

In a vending machine having a coin carrier, an actuating shaft for the carrier, locking means for the carrier and a coin runway, an element adjacent the runway tiltable about a horizontal pivot and upon which element the coin is deposited from the runway, said element in one of its positions operating to direct predetermined coins away from the coin carrier, and being movable about its pivot by the weight of a proper coin deposited thereupon to direct said proper coin to the said carrier, said locking means being releasable by a proper coin as the latter is advanced by the carrier, a portion of said locking means, when thus released, being movable into engagement with the tiltable element to lock said element against tilting movement.

CHARLES L. CASEY.