March 3, 1931. I. GREEN 1,795,117

VENDING MACHINE

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FIG. 1.

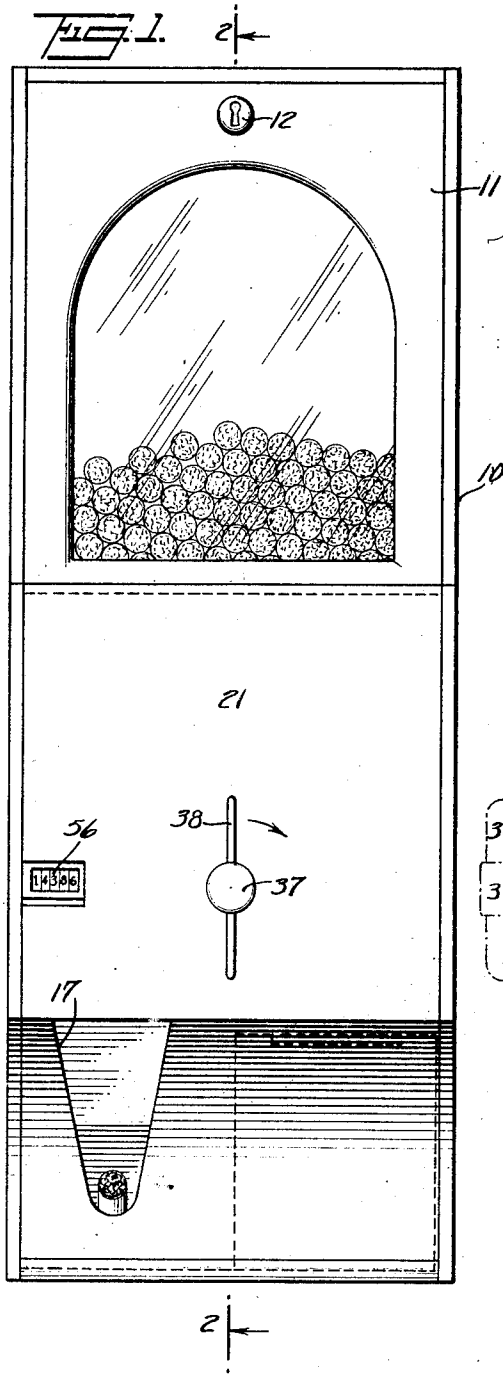
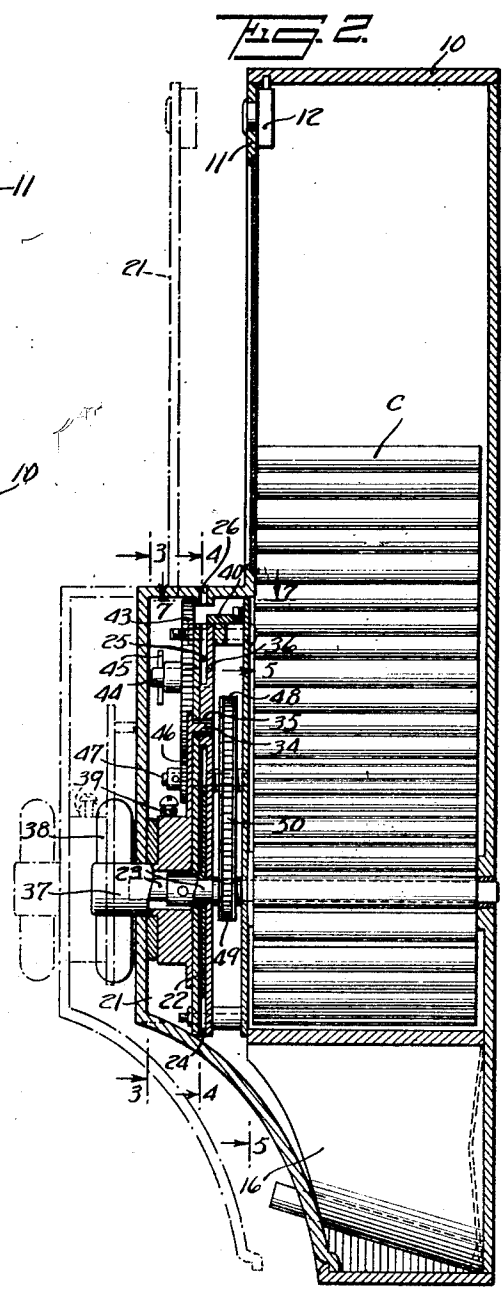


FIG. 2.



WITNESSES

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FIG. 3.

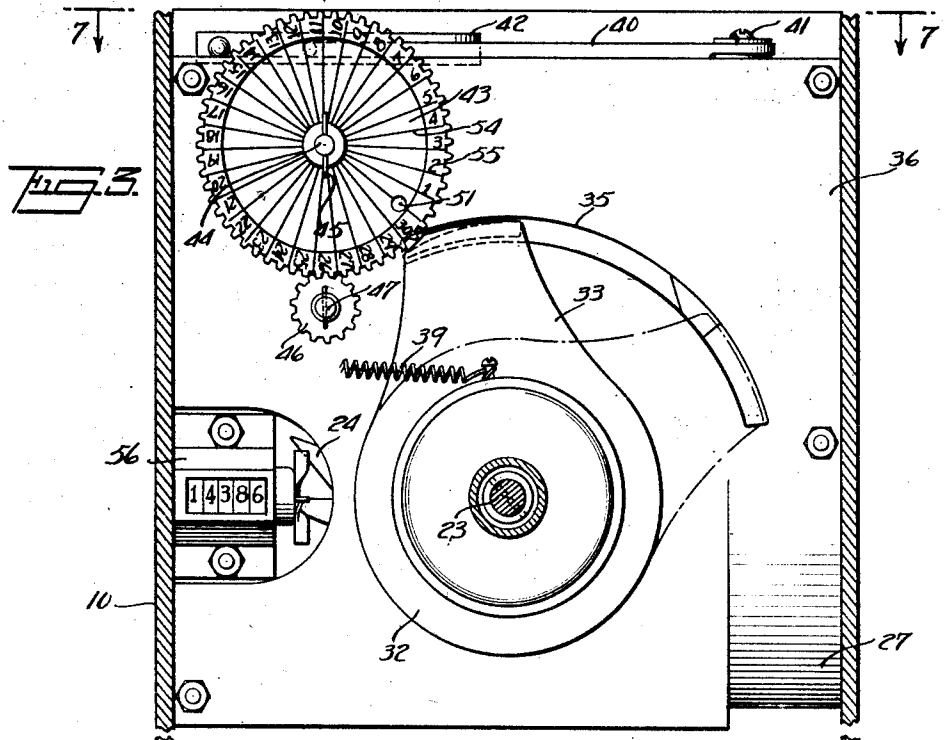
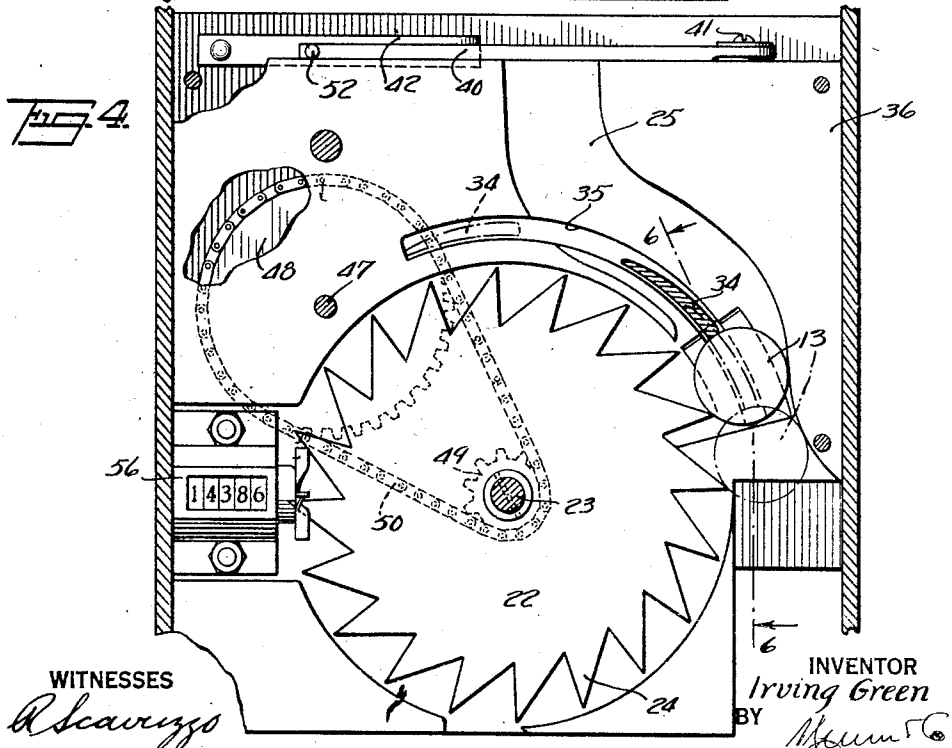


FIG. 4.



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VENDING MACHINE

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FIG. 5.

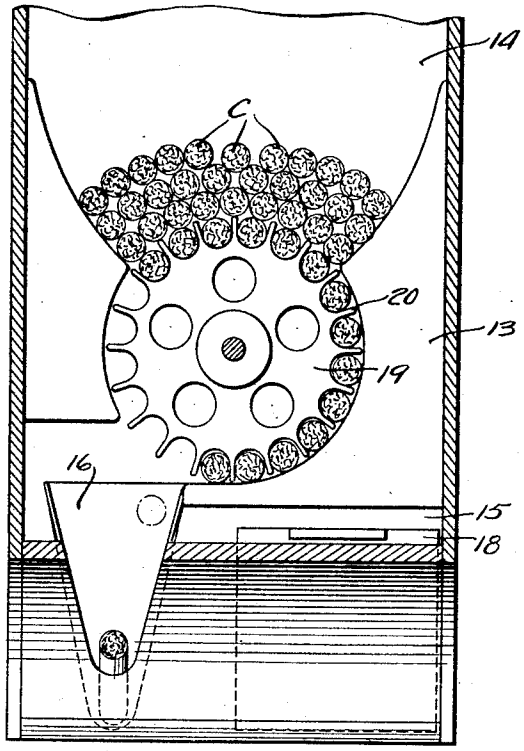


FIG. 6.

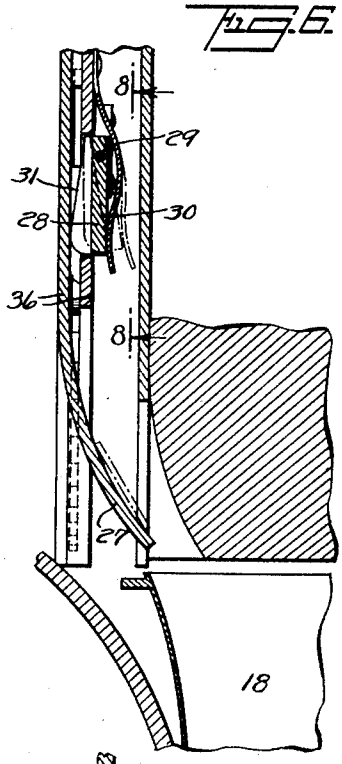
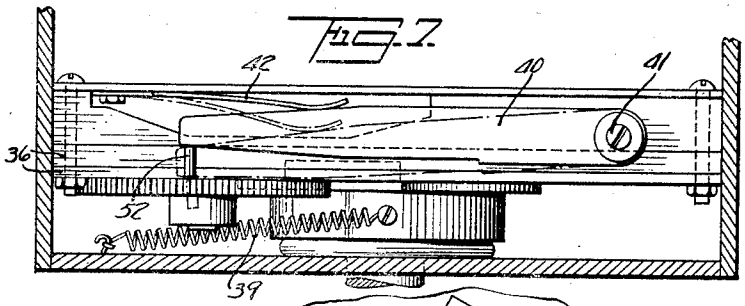


FIG. 7.



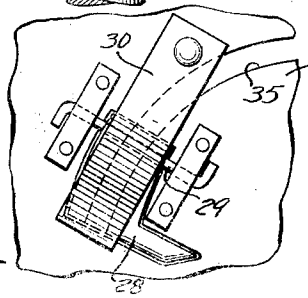


FIG. 8.

WITNESSES

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Patented Mar. 3, 1931 1,795,117

UNITED STATES PATENT OFFICE

IRVING GREEN, OF NEW YORK, N. Y.

VENDING MACHINE

Application filed May 19, 1928. Serial No. 279,074.

This invention relates to vending machines, and has particular reference to a machine which while principally designed for vending cigarettes, is not necessarily restricted to such use and the right is reserved to employ the same for the purpose of vending any other articles of which it is capable.

The invention primarily comprehends a vending machine of the character set forth which is extremely compact and which is readily accessible for the purpose of recharging with the contents to be vended and for the purpose of removing the coins or checks used in operating the same.

The invention furthermore contemplates an improved coin or check operated mechanism for successively turning a predetermined distance in the same direction upon each operation, the rotary delivery means of the vending machine.

As a further object, the invention embodies a coin operated mechanism, by virtue of which a plurality of coins may be inserted in the coin slot, prior to or during the operation of the mechanism, with the assurance that the vendee will receive a corresponding number of the articles which are being vended.

The invention aims as a still further object to provide an improved coin slot closing device which includes means operable to obstruct the coin slot after a predetermined number of operations of the coin operated mechanism, which device is settable to function after the desired number of operations.

More specifically, the invention comprehends a coin or check operated mechanism for successively turning a rotary member a predetermined distance in the same direction, which member essentially includes a rotary element connected with the member to be operated thereby and which element intersects a coin guide through which the coins inserted by the vendee gravitate to a predetermined point where a coin or check actuator manually operated initially depresses a detent which normally locks the element against rotation and subsequently causes the coin to turn the element while released.

Among its objects, the invention resides in the comparative simplicity of construction and mode of operation of the machine, the economy of its production and assembly and the high efficiency and precision with which it operates.

With the above recited and other objects in view, reference is had to the following description and accompanying drawings, in which there is exhibited one example or embodiment of the invention, while the claims define the actual scope of the same.

In the drawings—

Figure 1 is a front view of the machine.

Figure 2 is a vertical sectional view therethrough taken approximately on the line 2—2 of Figure 1 and illustrating in broken lines the manner in which the front wall is removed for charging the same with its contents or removing the coins which have been deposited.

Figure 3 is an enlarged vertical sectional view taken approximately on the line indicated at 3—3 in Figure 2.

Figure 4 is a similar view taken approximately on the line 4—4 of Figure 2.

Figure 5 is a similar view taken approximately on the line 5—5 of Figure 2.

Figure 6 is an enlarged fragmentary detail view taken approximately on the line 6—6 of Figure 4.

Figure 7 is an enlarged horizontal sectional view taken approximately on the line 7—7 of Figure 2.

Figure 8 is an enlarged fragmentary sectional view taken approximately on the line 8—8 in Figure 6.

Referring to the drawings by characters of reference, 10 designates the cabinet which is of elongated rectangular configuration and of a depth approximating the length of the cigarettes or other articles to be vended. The front wall 11 of the cabinet is removably carried thereby and is secured in place by a suitable lock 12. A suitable partition 13 subdivides the casing or cabinet 10 into vertically spaced upper and lower compartments 14 and 15, the former constituting a hopper for the reception of the cigarettes C or other articles to be vended. The latter compartment is

formed with a delivery trough 16 which coincides with a delivery opening 17 in the lower part of the front wall while said compartment further functions to accommodate a coin box or receptacle 18 for receiving the coins or checks which have been deposited and employed for the purpose of operating the machine. A suitable delivery member 19, such as a wheel having circumferentially spaced peripheral notches 20, is mounted for rotation within the partition 13 for receiving the cigarettes or articles C from the hopper compartment and for conveying and discharging the same into the delivery trough 16.

The coin or check operated mechanism which is employed for successively turning the rotary delivery member or wheel 19 is housed in the forwardly offset portion 21 of the front wall and said mechanism includes a rotary element 22 which is keyed to a shaft 23 which extends axially through and is secured to the delivery member or wheel 19. The element 22 is, as illustrated, in the nature of a ratchet wheel having peripheral teeth 24. One point of the element or wheel 22 intersects a coin guide 25, the upper end of which guide is disposed directly under and in line with a coin slot 26 formed in the upper deck or wall of the offset portion 21. The opposite lower end of the coin guide terminates in a lip 27 which is disposed over the upper open end of the receptacle 18. A detent 28 is fulcrumed at 29 and is normally urged by a spring 30 into the path of movement of a peripheral tooth 24 of the element or wheel 22, so as to engage with and prevent turning movement thereof. The detent is also provided with an inclined surface 31 which intersects the coin guide when the detent is in its normal locking engagement with the peripheral teeth of the element or wheel 22. Mounted on the inner face of the offset portion 21 of the front wall 11 for limited rotatory movement, is the hub 32 of the actuator, which hub is provided with a radial arm 33 having an inwardly projecting pusher lug 34 which works in the arcuate slots 35 in the plates 36. The hub 32 is provided with an outwardly projecting stud 37 which is journaled in the offset portion 21 and is provided with an externally disposed manipulating key 38 for turning the same, together with the actuator. A coil contractile spring 39 is anchored at one end to the offset portion of the wall and is connected at its opposite end with the hub for normally swinging the arm in a counter clockwise direction to substantially the position illustrated in Figure 3, where the pusher lug engages with the ends of the arcuate slots 35. In practice, with the actuator in its normal position illustrated in Figure 3 and in its dotted line position illustrated in Figure 4, a coin inserted in the slot 26 will gravitate through the guide 25 until it contacts with the inclined surface 31 of the detent. The vendee grasping the key 38 and turning the same in a clockwise direction as indicated by the arrow in Figure 1, swings the arm 33 of the actuator and correspondingly moves the pusher lug 34 in a clockwise direction until it impinges against the periphery of the coin or check B. The initial movement of the coin by the pusher lug cams the detent 30 inwardly, as illustrated in dotted lines in Figure 6, thereby releasing the wheel 22 for turning movement. Continued turning movement of the key 38 brings the coin into engagement with one of the peripheral teeth 24 of the wheel and causes the wheel to turn with the coin and pusher lug until the coin or check B rides over and beyond the inclined face 31 of the detent, at which point the detent will be again urged into its locking relation with the teeth 24. At this point also, the coin will be released and permitted to gravitate downwardly where it is guided by the lip 27 into the receptacle 18.

In order to provide means for obstructing the coin slot 26 after a predetermined number of operations of the coin mechanism, an obstructing bar 40 is fulcrumed at 41 and disposed at a point directly underlying the coin slot 26, a spring 42 being employed to swing the obstructing bar to a coin slot obstructing position. A gear wheel 43 is journaled for turning movement on a stub shaft 44 which projects forwardly from the plate 36, and said gear wheel is removably held thereon by a cotter pin 45. The teeth of the gear wheel mesh with the teeth of a pinion 46 which is keyed to a shaft 47, to which a sprocket wheel 48 is secured. The sprocket wheel 48 is rotated in any desired manner from and by the ratchet wheel 22, such as by means of a sprocket pinion 49 secured to the shaft 23 of the ratchet wheel and around which sprocket wheel and pinion a sprocket chain 50 is trained. The gear wheel 43 is provided with an opening or recess 51 while the coin slot obstructing bar 40 is provided with a forwardly projecting stud 52 which normally engages against the inner face of the gear wheel 43 to hold the bar 40 in an inwardly moved position where it is out of direct alignment with the coin slot 26. After a predetermined number of operations of the coin mechanism, however, the opening or recess 51 moves to a position in registry with the stud 52, permitting the spring 42 to function to swing the obstructing bar 40 forwardly to a position directly under the coin slot 26, thereby preventing a coin from being inserted in the slots 26. In order to guide the person filling the machine, suitable graduations 54 and indicia 55 are inscribed on the front face of the gear wheel 43. In practice, when the machine has been filled or charged with a certain number of cigarettes C, the cotter pin 45 is removed and the gear wheel 43

turned to a position where a corresponding number of operations of the machine will cause the opening or recess 51 to register with the stud 52. In order to provide means for accurately registering the number of cigarettes sold by the machine, a counter 56 may be installed, with which the teeth 24 of the wheel 22 cooperate to actuate the counter upon each operation of the wheel 22. It will be observed that due to the construction of the coin operated mechanism, a plurality of coins may be inserted in the machine with the actuator in normal position and turning movement of the actuator will cause the wheel 22 to release as many articles or cigarettes as there are coins in front of the actuator pusher lug 34. If a coin is inserted after the actuator has been moved, the pusher lug will elevate the coin when the key is released and the pusher lug is returned to a normal position so that a subsequent operation will cause the pusher lug to feed the coin over the detent to turn the wheel 22.

From the foregoing, it will thus be seen that an extremely simple and compact vending machine has been devised which is absolutely foolproof irrespective of the manner in which it is manipulated and which is further provided with means which insures a delivery of the articles to be vended whenever a coin is inserted and the coin mechanism is operated.

What is claimed is:

1. In a coin or check operated mechanism, a coin guide, a rotatably mounted wheel having teeth for moving in the coin guide, a detent in the coin guide for engaging a tooth on the wheel, resilient means for holding the detent yieldingly in operative position, and a pusher lug for movement in the coin guide to engage a coin and push the coin against the detent to move the latter into inoperative position and to push the coin against a tooth on the wheel to rotate the latter.

2. In a coin or check operated mechanism, a coin guide, a rotatably mounted wheel having teeth for moving in the coin guide, a detent in the coin guide for engaging a tooth on the wheel, resilient means for holding the detent yieldingly in operative position, and a pusher lug for movement in the coin guide to engage a coin and push the coin against the detent to move the latter into inoperative position and to push the coin against a tooth on the wheel to rotate the latter, and resilient means to hold the pusher lug yieldingly in a predetermined position.

3. In a coin or check operated mechanism, a coin guide, a wheel mounted to rotate, the wheel having teeth which are positioned to move in the path of a coin passing through the coin guide, a detent, resilient means to press the detent to a position for engagement by a tooth on the wheel and in the path of a coin passing through the coin guide, and a pusher lug for engaging the coin passing through the coin guide for pressing the coin to move the detent into inoperative position and the coin against a tooth of the wheel to rotate the latter.

4. In a coin or check operated mechanism, a coin guide, a shaft, a wheel secured to rotate with the shaft, the wheel having teeth which are positioned to move in the path of a coin passing through the coin guide, a detent, resilient means to press the detent to a position for engaging a tooth on the wheel and in the path of a coin passing through the coin guide, a pusher lug for engaging the coin passing through the coin guide for pressing the coin to move the detent into inoperative position and the coin against the tooth of the wheel to rotate the latter, and delivery means operable by the shaft.

Signed at New York, in the county of New York and State of New York, this 18th day of May, A. D. 1928.

IRVING GREEN.