

M. STOLTZ AND C. DE W. LUKENS.

GUM VENDING MACHINE.

APPLICATION FILED APR. 10, 1915.

1,315,879.

Patented Sept. 9, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

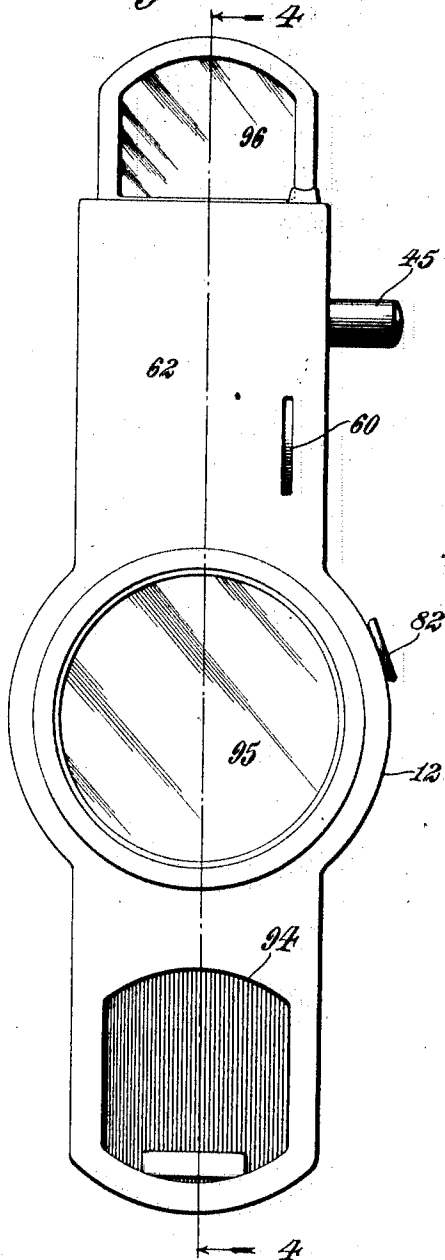
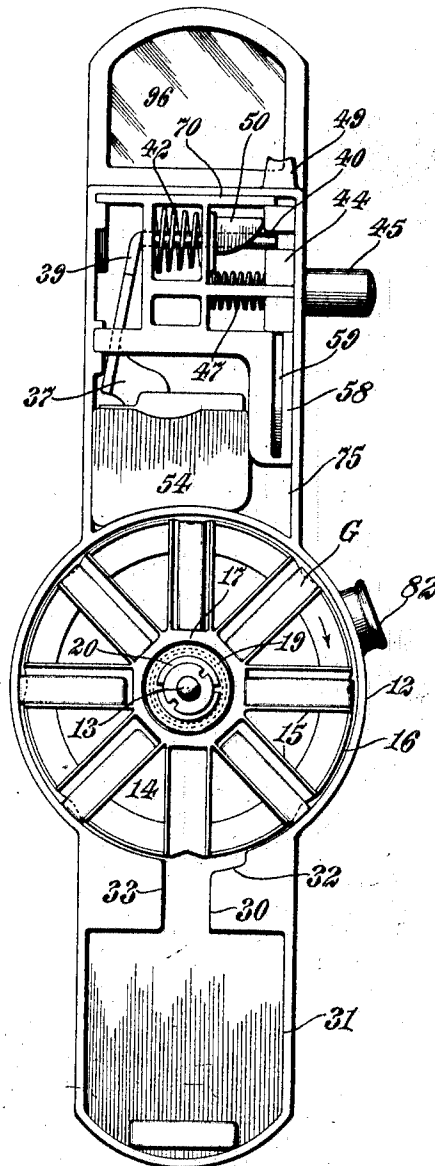


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

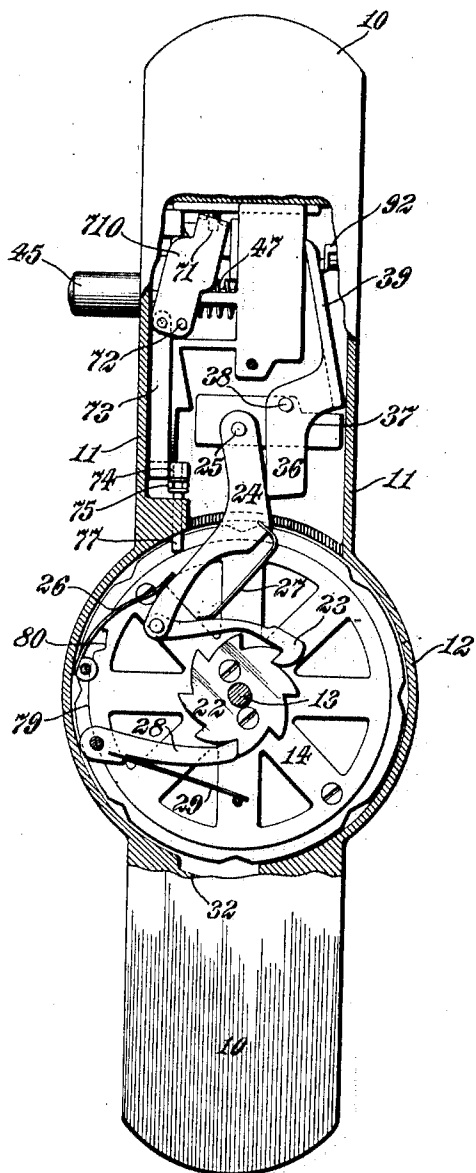
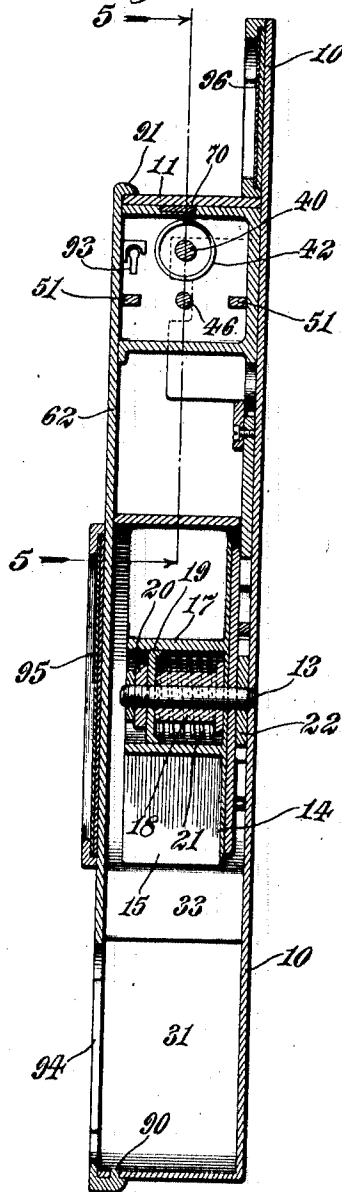


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

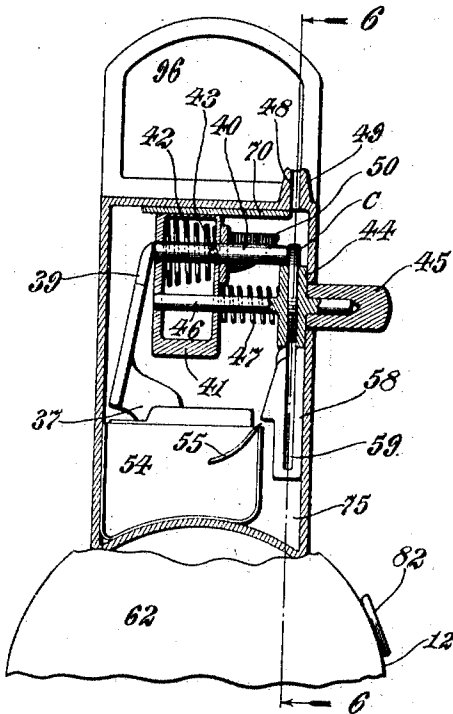


Fig. 6.

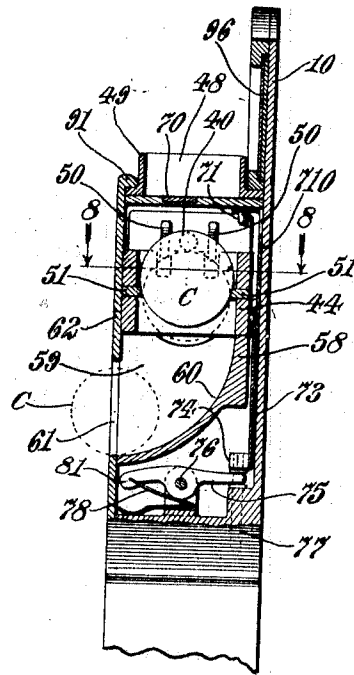


Fig. 7.

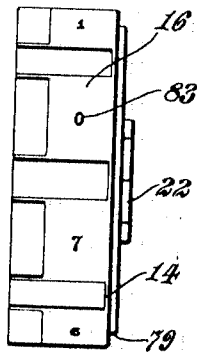
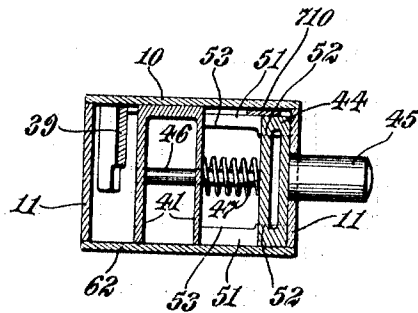


Fig. 8.



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UNITED STATES PATENT OFFICE.

MELVILLE STOLTZ AND CLARENCE DE WITT LUKENS, OF ST. LOUIS, MISSOURI.

GUM-VENDING MACHINE.

1,315,879.

Specification of Letters Patent.

Patented Sept. 9, 1919.

Application filed April 10, 1915. Serial No. 20,458.

To all whom it may concern:

Be it known that we, MELVILLE STOLTZ and CLARENCE DE WITT LUKENS, both citizens of the United States, and residing at St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Gum-Vending Machines, of which the following is a specification.

This invention relates to vending machines, and more particularly to machines for vending gum and like articles.

In vending machines as now constructed, the article is moved past or over a discharge slot or opening. It is, however, found that the article will often be overthrown so as to rest against the edge of the discharge opening, thereby preventing proper delivery.

One of the objects of this invention, therefore, is to provide a machine in which the delivery is positive and certain, and more particularly, to provide means whereby the article is given a preliminary discharge movement prior to its reaching the discharge opening.

Another object is to provide a vending machine, in which means operates upon the delivery of the last article to close the coin-receiving slot and also lock the vending mechanism in position, from which position the parts can only be changed by an authorized person.

Another object is to provide a vending machine which is simple in construction and operation, which can be easily refilled, and which occupies a small space.

Further objects will appear from the detail description taken in connection with the accompanying drawings, in which:

Figure 1 is a front elevation of a vending machine embodying this invention;

Fig. 2 is a view similar to Fig. 1, with the front plate removed;

Fig. 3 is a rear elevation with the base plate cut away to show the interior construction;

Fig. 4 is a section on the line 4—4, Fig. 1;

Fig. 5 is a section on the line 5—5, Fig. 4;

Fig. 6 is a section on the line 6—6, Fig. 5;

Fig. 7 is a side elevation of the carrier; and

Fig. 8 is a section on the line 8—8, Fig. 6.

Referring to the accompanying drawings, 10 designates the base, which has forwardly projecting flanges 11 to form a casing adapted to be secured to a wall or other suitable support. The center of the casing is enlarged, as shown at 12, to form a central cylindrical chamber, and in this chamber is

mounted a shaft or post 13 secured to the base plate and adapted to receive a rotatable carrier 14. This carrier has radial partitions 15 to provide a series of radially extending pockets adapted to receive the vended article G, such as gum, and these partitions 15 are connected by circumferential parts 16, so as to strengthen the carrier. The carrier has a central bore 17 and a hub 18 bored to fit the shaft 13, and this carrier is secured in position by a washer 19 and nuts 20. In order to frictionally hold the carrier in position, a spring 21 is interposed between the washer 19 and the carrier, as shown in Fig. 4. The carrier has a ratchet 22 engaged by a pawl 23 on a pawl lever 24, which is pivoted at 25 on the base plate 10, and is normally moved to the right Fig. 3, by a leaf spring 26 fixed to the base plate and bearing against the pawl carrier. The pawl is held in engagement with the carrier ratchet by a leaf spring 27, fixed, at one end, to the pawl carrier, and bearing, at its other end, on the pawl. A stop pawl 28, pivoted on the base plate 10, is moved into engagement with the ratchet by a leaf spring 29. The casing is provided with a slot 30, with which the pockets are adapted to aline, and which discharges the vended article into a compartment 31. The carrier moves in the direction of the arrow, Fig. 2, and the vended articles are retained in the pockets by engagement with the inside of the casing. To the right of the slot 30 the casing is undercut for some distance circumferentially of the carrier, as shown at 32, for a purpose hereinafter to be described.

The pawl carrier 24 is engaged by the heel of a lever 37 pivoted at 38 on the base plate, and having an arm 39 engaging a plunger 40 mounted in a bracket 41 on the base plate. A spring 42 on the plunger bears against a cross pin 43, so as to normally move the plunger to the right, Fig. 5. A carrier 44 is slotted to receive a coin C, this slot extending completely through the carrier, as shown in Figs. 5 and 6. This carrier has a button 45 projecting through and bearing in the casing, and a shank 46 bearing in the bracket 41. This shank has mounted thereon a spring 47 bearing against the bracket and the carrier, so as to normally move this carrier to the right, Fig. 5.

A slot 48 in a projecting part 49 on the casing is arranged in alinement with the slot in the carrier 44, so as to receive the coin which is dropped through the slot into the

carrier, and is supported as hereinafter described. A pair of spaced cam lugs 50 on the bracket 41 are arranged on each side of the plunger 40, and in the path of the coin C. This coin is arranged to rest on a pair of stationary rails 51 fixed in the casing, the inside faces 52 of the rails being close together where the coin enters, and these faces being cut away, as shown at 53, so as to permit the coin to drop therethrough.

A container 54 is removably mounted in the casing, and this container has a guide or deflector 55 to guide or deflect the coin into the container.

The carrier 44 is below the plunger 40, so that movement of the carrier when no coin is therein will not move the plunger 40, and will, therefore, not affect the carrier. When, however, a coin is inserted into the slot 48, this coin, dropping into the carrier, will rest on the edges 52 of the rails 51, and project sufficiently above the carrier so as to be in the path of the plunger. If the button 45 is now pressed inwardly, the coin, bearing against the plunger, will move this plunger to the left, Fig. 5, and through engagement with the arm 39 of the lever 37, will swing this lever clockwise, Fig. 3, and move the pawl carrier 24, so as to rotate the carrier through one step and through one space, thereby causing one of the pockets to aline with the slot 30 and drop the article into the compartment 31. As the carrier 44 moves to the left, Fig. 5, the coin moves into engagement with the stationary cam lugs 50, causing these cam lugs to move the coin downwardly, so that, when the carrier reaches the end of its movement, the coin will have been moved downwardly sufficiently to clear the plunger 40, so that the coin will drop on the deflector plate 55 and into the receptacle 54. As a matter of fact, the coin, in slipping out of engagement with the plunger, will be projected down with some force. Upon release of the button, the parts are returned to normal position.

The movement of the carrier 14 is comparatively rapid, so that the carrier is liable to overthrow, thereby causing the article to move past the slot and rest on the edge 33 thereof, thereby preventing discharge. In accordance with this invention, the casing is undercut circumferentially of the carrier, as shown at 32, for some distance in advance of the slot 30, so that the article can drop before it reaches the slot. Even if the article should stick partway, this article will engage the edge 33 and act as an overthrow stop, and can then, of course, be readily shaken loose.

It sometimes happens that a person will insert a slug instead of a coin. In accordance with this invention, the coin is tested by its diameter. This is readily accomplished, since the coin rests upon the edges

52 of the rails, and these edges can be accurately spaced, so as to accurately test for a coin of a given diameter. Arranged below the carrier 44 is a plate 58 provided with a slot 59 in alinement with the slot in the carrier when this carrier is in normal position. The bottom 60 of this slot slopes downwardly, and this slot or passage discharges through a slot 61 in the cover plate 62 on the casing. If, therefore, a coin of a smaller diameter, or a slug of smaller diameter than the coin for which the machine is designed, is inserted, this coin will drop between the rails and shoot out of the slot 61 toward the operator of the machine. Of course, the length of the slot 48 is so proportioned as to receive only a coin of a certain diameter. Since the edges 52 can be accurately spaced, and since coins are of uniform diameter within a few thousandths of an inch, it will be seen that this furnishes a very accurate coin testing device.

In accordance with this invention, the carrier 14 is locked in position and the coin slot closed when the machine is empty. The casing has, accordingly mounted therein, below the slot 48, a sliding plate 70 having a downwardly projecting pin 71 engaging the fork on a plate 710 pivoted at 72 on the base plate, and connected with a sliding link 73 having a head 74 engaged by the forked end 75 of a lever pivoted at 76 in the casing. The head 74 has fixed thereto a bolt 77, and this bolt is normally moved downwardly by a spring 78 engaging the lever. The bolt normally rests on a ledge 79 on the carrier, and this ledge has a notch 80 adapted to receive the pawl. The lever has a projecting part 81 adapted to be depressed when the cover is removed.

The carrier, when filled with the articles, is placed slightly off center, so that the lowest article will still rest on the undercut part 32. The notch 80 is at this time so arranged that the bolt 77 will rest upon the ledge 79. The raising of this bolt can be accomplished by the manipulation of the handle 81, and this will, at the same time, hold the plate 70 out of the path of the slot 48, so as to open this slot. The parts are held in this position until the last compartment comes opposite the slot 30, at which time the notch 80 will come opposite the bolt, and the bolt will snap in this notch, thereby locking the carrier against movement, and simultaneously closing the coin slot.

In order to provide means for observing how many articles are still in the carrier, the casing is provided with an apertured lug 82, which is closed by glass, through which the numbers 83 on the carrier may be observed. In this way it is readily ascertained how many articles are still in the carrier. The cover 62 is provided with a

flange 91 taking over the casing, at its bottom, with a lug 90 entering an aperture in the casing, and at its top, with a suitable keeper engaging a lock 92 in the casing. A keyhole 93 is provided to receive a key. The casing is provided, opposite the compartment, with an aperture 94, and also with a label carrier 95. The casing itself is also provided with a similar label carrier 96. The carrier can, therefore, be readily refilled by removing the cover plate, and the coin receptacle 54 can, at this time, also be emptied.

It is obvious that various changes may be made in the details of the construction without departing from the spirit of this invention. It is, therefore, to be understood that this invention is not to be limited to the specific construction shown and described.

Having thus described the invention, what is claimed is:

1. In a vending machine, a movable carrier for vendible articles, means for moving said carrier to article discharging position, means cooperating with one of the vendible articles for holding the carrier in said position, and means for insuring such cooperation of the article with said holding means.

2. In a vending machine, a movable carrier for vendible articles, means for moving said carrier to discharge one of the articles therefrom, a stop constructed and arranged for cooperative engagement with said vendible article to prevent the latter moving past the point of discharge, and means for insuring engagement of the article with said stop.

3. In a vending machine having a discharge opening, a movable carrier for vendible articles, means for imparting motion to said carrier for discharging an article through said opening, and means permitting an initial projection of the vendible article to be discharged as it advances toward, and prior to reaching, said opening.

4. In a vending machine having a discharge opening, a carrier for the vendible articles movable to discharge said articles successively through said opening, a stop disposed for engagement by one of said vendible articles and for cooperation with said article to prevent overthrow of the carrier past said opening, means permitting an initial projection of the vendible article into the path of and for engagement with said stop, and means for imparting motion to the carrier for discharging an article through said opening.

5. In a vending machine, having a discharge opening, a movable carrier for vendible articles, and means for moving the carrier to discharge an article through said opening, said parts being constructed and arranged to permit an initial movement of

the vendible article to a position to engage the far wall of the opening and prevent movement of the article past said opening.

6. In a vending machine having a discharge opening, a movable carrier having a pocket formed to receive the vendible article and permit escape of said article therefrom, means for moving the carrier to discharge the article through said opening, and means permitting partial escape of the vendible article from said pocket prior to arriving over said discharge opening.

7. In a vending machine, a casing having a discharge opening, a carrier for moving the vendible articles successively to said opening and permitting their escape there-through, said casing having a recess arranged to permit a preliminary discharging movement of the vendible articles from the carrier as they approach said opening to insure their proper discharge through the opening, and means for moving the carrier.

8. In a vending machine, the combination with a carrier having a plurality of compartments for receiving vendible articles, a casing having a discharge opening through which the articles are discharged, and means for causing a preliminary movement of the vendible article from said carrier before it reaches said opening, adapting the article to engage a wall of the opening and prevent movement of the article past said opening.

9. In a vending machine, the combination with means for supporting vendible articles, of means for discharging the vendible articles, and means for causing a preliminary discharging movement of the vendible articles prior to reaching the point of discharge for preventing movement of the articles past the discharge point.

10. In a vending machine, the combination with a casing having a discharge opening, of means for moving the vendible articles for discharge through said opening, and means for causing a preliminary discharging movement of the vendible article before it reaches said opening, adapting said article to engage the wall of the opening and insure its proper discharge therethrough.

11. A vending machine comprising a casing, a carrier shaft mounted therein, a carrier for the vendible articles rotatably sustained by said shaft, a spring mounted and retained on said shaft, constructed and arranged for retarding said carrier and frictionally holding the same against retrograde movement, and a removable face plate for said casing.

In testimony whereof we affix our signatures April, 1915.

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