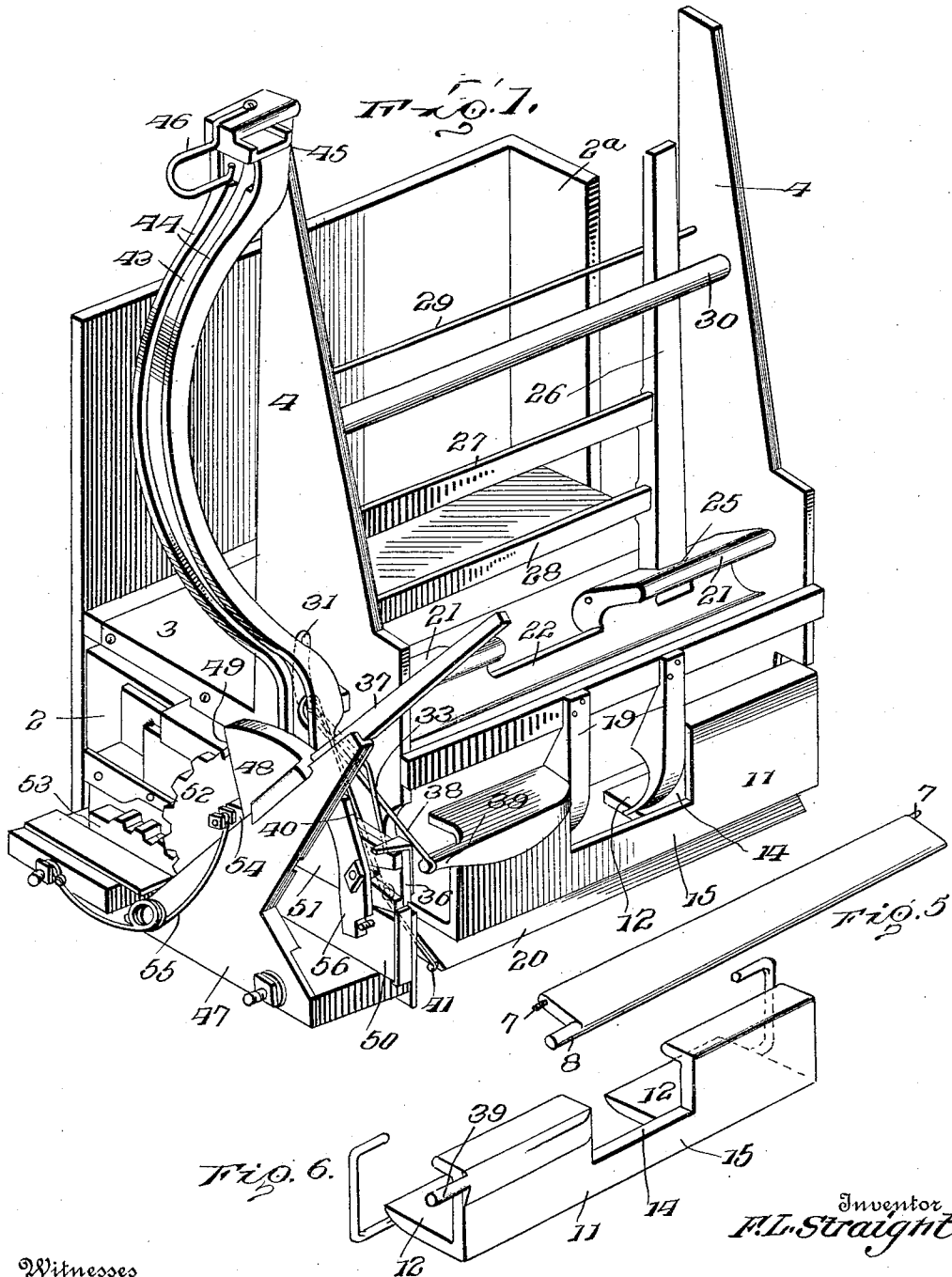


F. L. STRAIGHT.
CIGAR VENDING MACHINE.
APPLICATION FILED JAN. 26, 1912.

1,049,168.

Patented Dec. 31, 1912.

2 SHEETS-SHEET 1.



Witnesses
Frederick E. Speer
Jenna M. Tallin

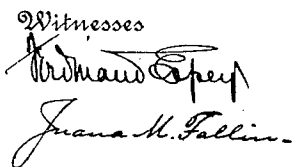
By

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1,049,168.

2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

FREDERICK L. STRAIGHT, OF LOUISIANA, MISSOURI.

CIGAR-VENDING MACHINE.

1,049,168.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Original application filed November 1, 1911, Serial No. 660,840. Divided and this application filed January 26, 1912. Serial No. 673,606.

To all whom it may concern:

Be it known that I, FREDERICK L. STRAIGHT, citizen of the United States, residing at Louisiana, in the county of Pike and State of Missouri, have invented certain new and useful Improvements in Cigar-Vending Machines, of which the following is a specification.

This invention relates to coin controlled vending apparatus, and particularly to a machine for vending cigars, although it is to be understood that the invention is not limited in this regard but is equally applicable for other uses.

The invention has for its primary object a simple, durable and efficient apparatus of this character which will be positive in its action, which will handle the cigars without liability of mashing them or breaking the wrappers, which will preferably feed the cigars one at a time, and which will with every operation of the device roll the cigars remaining in the vending compartment so as to insure a proper feed and prevent clogging of the machine or crowding of the cigars.

A further object of the invention is to provide improved means of this character which will vend the cigars from an ordinary cigar box without the necessity of removing the cigars from the box, the parts of the machine being preferably so arranged that the cigars and the actuating mechanism therefor may be viewed at all times, which will not only add a touch of interest to the machine, but will also show when the box is empty.

The construction described in the following specification has been divided from my pending application on vending-machines, Serial No. 660,840, filed November 1, 1911, said application covering the coin actuated mechanism.

My invention is illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of my improved vending machine, the exterior casing of the machine, however, being removed. Fig. 2 is a fragmentary side elevation of the lower part of the vending machine so as to show the engagement of the various gates, panels, etc., with the coin actuated mechanism proper. Fig. 3 is a longitudinal sectional view of my vending machine, the sec-

tion being taken through the middle of the machine showing the parts in the position they occupy just after a cigar has been delivered. Fig. 4 is a fragmentary sectional view of the lower portion of the vending machine but showing the parts in the position they occupy just prior to the delivery of the cigar and as the cigar is falling upon the delivery gate. Fig. 5 is a perspective detail view of the cut-off member 6 and a portion of the support therefor to show the pivotal connection of the cut-off member. Fig. 6 is a perspective detail view of the cigar catching gate.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

The casing of my improved cigar vending machine may be of any desired construction and design, according to the particular circumstances of the case, or as the judgment or taste may dictate, said casing not being shown in the present instance as it in itself forms no part of the present invention. It is to be understood, however, that the case is provided with a suitable opening for the reception of a coin, with a door or panel whereby access may be had to the interior of the casing for inserting boxes of cigars therein, and if desired may also be provided at its lower end with a tray upon which the delivered cigar may be discharged so as to be removed by the purchaser without an actuation of the apparatus. All of these parts may be of any desired construction and are so well understood by those versed in the art that they do not need illustration.

The cigar box from which cigars are to be vended is adapted to be supported upon a box support 2 having side pieces 4 and formed with a base 3 upon which a cigar box A is adapted to rest. Leading downwardly and forwardly from the base 2 is a curved chute or runway 5 which extends between the side pieces 4 and is of a length equal to the breadth of a cigar box.

Pivotaly mounted between the side pieces 4 at the lower end of the chute 5 is a detaining gate 6. This is pivoted at its upper end as at 7 to the side 4, the outer end of the gate being free to move. The gate is provided at one end with an outwardly

projecting pin 8 connected to a link 40 for a purpose to be later described. It will be seen that the upper or inner end of the gate 6 is approximately in alinement with the lower end of the chute 5 so that the gate when in its normal position as shown in Fig. 3 forms practically a continuation of the surface of the chute 5.

The side pieces 4 at the bottom are cut away as at 10 to provide a curved slot or recess through which the pin 8 projects. It will be seen that the gate 6 may be turned up into a position as shown in Fig. 4 where it will prevent the outlet of cigars from the chute 5, or may be turned down into its normal position as in Fig. 3. Also pivotally supported from the lower ends of the sides 4 below the cutaway portion at the forward ends of the slides is a cigar catching gate designated 11. This is angular in form to provide the inwardly projecting flanges 12 and is cut away at its middle as at 14, thus providing a bar 15 with the angular cigar supporting members 12 at each end thereof. The gate 11 is swung from hangers 16 pivotally mounted at their lower ends upon the side pieces 4 as at 17, these links 16 being angularly bent and extending beneath the extremities of the gate 11. It will be seen that these links or hangers 16 are disposed beneath the inner end of the flanges 12, and that as a consequence the gate will remain closed or in the position shown in Fig. 3 by its own weight, and that after it has been forced open, it will tend to close without any assistance of a spring or other member.

Extending between the side pieces 4 above the gate 11 is a cross bar 18 which is fixed to the forward edges of the side pieces and is provided with depending fingers 19 which are slightly curved downward and inward. These fingers extend downward below the cross bar 15 of the member 11 and the member is cut out at its middle to accommodate these downwardly extending fingers. These fingers act to strip a cigar from off the flanges 12 of the cigar catching gate 11 and guide the cigar downward upon a discharge gate 20 which is pivoted between the side pieces 4 at the lower ends thereof and immediately beneath the gate 6. The gate 20 is pivoted at its rear end, and the pivotal point is somewhat behind or beneath the point 7 of the gate 6. The gate 20 is of such width that when turned up to the position shown in Fig. 4, the forward edge of the gate will be immediately beneath the fingers 19, while when it is turned down as shown in Fig. 3, the lower edge of the gate will rest upon the base of the machine or communicate with a delivery cup or like receptacle for the cigar.

Mounted above the gates previously described is a cigar feeding and rolling device

comprising the spaced angular members 21 constituting links having rounded inner faces and connected by a cross bar 22. These spaced angular members are pivoted as at 23 to the side pieces 4 to pivotally support the side pieces. These angular members are bifurcated as at 25, and pivoted within these bifurcations are the upwardly extending rods 26 connected by cross bars 27 and 28. These cross bars are rounded so that while they will engage with the cigars as they pass from the box A and will act to feed the cigars downward, they will not injure the cigars. The supporting rods 26 are supported between a transverse rod 29 extending between the side pieces 4 and a transverse roller 30 also extending between the rods 4. The angular feeding members 21, the vertical supporting rods 26 and the cross bars 27 and 28 are all reciprocated together by means of connections extending from one of the members 21 and connected operatively to the coin actuated mechanism.

One of the side pieces 4 is formed with an upwardly extending arcuate slot 31, and mounted upon the apex of one of the angular members 21 is a transversely extending pin 32 which extends out through the slot 31. This pin is connected by means of a link 33 to a pin 34 mounted upon a sliding bar 36 operatively connected to an actuating handle 37 so that when the handle is operated, the bar 36 will be forced inward, that is, from the front toward the back of the machine. Through the connection 33 the inward movement of the bar 36 will force the pin 32 up in the slot, thus raising the feeding devices to their full height. At the time that the pin 32 is raised, the gate 11 is also raised or moved outward into the position shown in Fig. 4, thus causing the cigar which rests upon the inwardly extending flanges 13 to be dropped upon the discharge gate 20. For the purpose of rotating the gate 11 so as to move the flanges upward and outward, I provide a link 38 as shown in Fig. 2 which extends between the pin 32, and an outwardly projecting pin 39 projecting laterally from the upper portion of one of the angular members 12 of the cigar catching gate 11. As the pin 32 moves up in the slot 31, the upper portion of the gate 11 will be moved upward and inward, thus throwing outward the lower portion of the gate including the flanges 13.

In order to rotate the gates 6 and 20, together, so that when the gate 6 moves upward the gate 20 will also move upward, and so that the gates 6 and 20 will move upward in correspondence with the pin 32, I provide the link 40 which extends downward from the pin 32 to the pin 8 and then extends downward to a pin 41 projecting from the outer edge of the discharge gate 20. It will thus be seen that the several gates 12, 6 and

20 are all constructed to move in one direction with the upward movement of the feed member 21, and that they are all connected to move in the opposite direction upon a downward movement of the member 21.

It will also be seen from Figs. 3 and 4 that in their normal position the flanges 13 of the gate 10 are in approximate contact with the free edge of the gate 6, and that the pivoted edge of this gate is in approximate contact with the lower edge of the chute 5, so that cigars issuing from the box A will fill the chute 5, the lowermost cigar resting upon the flanges 13 while the next cigar in order rests upon the gate 6, the remainder of the cigars extending up the chute 5 between the face of the chute and the feeding members 21. Upon an upward movement of the feeding member 21 incident to the rise of the pin 32 upon the actuation of the lever 37, the gate 6 will rotate to the position shown in Fig. 4, pushing back the lowermost cigar and preventing its dropping off of the chute. At the same time the gate 11 will open outward and the gate 20 will rise, permitting the cigar which rests upon the flanges 13 to drop upon the gate 20. Upon the downward movement of these parts, the discharge gate 20 will drop, permitting the cigar thereon to be discharged from the machine entirely. The gate 6 will gradually lower, and as it lowers the cigar catching gate 11 will move inward to take up its former position and the parts will return to the position shown in Fig. 3.

When a cigar box is first placed within the machine, a few cigars are removed from one end of the box and a triangular fillet 42 is disposed in the bottom of this box. This fillet preferably consists of a piece of spring metal folded to form an acute angle triangle having the depth the same depth as the cigar box. This fillet 42 forms an inclined bottom to the cigar box, thus causing the cigars therein to roll downward and out of the box and into the channel between the face of the chute and the feeding devices 22. Unless the cross bars 27 and 28 and the angular feeding members 21 have curved faces, they will act to roll the cigars and will not act to crush them or jam them. Furthermore, while the angular members 21 will roll the cigars on their upward movement, they will pass upward above the cigars and will permit the cigars to feed downward to the position shown in dotted lines in Fig. 3. A continual reciprocation of the members 21, 27 and 28 will cause the downward feed of the cigars and will cause the cigars to take up a position one above another within the passage between the chute 5 and the members 21.

While I do not wish to be limited to any specific mechanism for operating the vending machine heretofore described, for purposes of illustration I have shown as much

of the mechanism described in my prior application, Serial No. 660,840, filed November 1, 1911, as will illustrate the operation of the several parts.

By referring to Fig. 1, it will be seen that I provide a curved coin chute or track designated 43 which is channeled for the reception of the coin and is provided with overhanging flanges 44. This member 43 is bowed to permit a coin smaller than the channel to drop out. The upper end of the coin chute 43 is provided with coin-receiving members 45 alining with the coin slot in the face of the machine. The head of the coin-receiving member is also provided with a finger 46 which extends beneath the opening of the head 45 and is designed to cause all coins to turn in the proper position to pass through the chute, and is also designed to catch washers which may be deposited in the machine.

The actuating lever 37 is slidably mounted upon a standard 47 having an inclined face formed with a channel-way for the actuating rod 37. The lower end of the rod 37 is formed with a head 48 having an approximately vertical active face 49.

Mounted upon a rigid guide 50 and moving thereover is a slide 51 which carries upon it a toothed wheel 52 having certain of its teeth adapted to mesh with a rack bar 53 mounted upon the base of the machine. The wheel 52 is provided with a square hub 54 with which the vertical flat face 49 of the head 48 is adapted to engage. A spring 55 rigidly connected at one end to the base and at the other connected to the hub 54 acts to force the wheel 52 in a forward direction. Upon a depression of the rod 37, the head 48 bearing against the hub 54 will force the wheel 52 back, and with it the slide 51.

Mounted in conjunction with the slide 51 is a slide 36. The inner face of the slide 51 is cut away to form opposed shoulders, and the adjacent face of the slide 36 is also cut away to provide shoulders. A coin passing downward through the chute 43 drops down into the recess between said shoulders and forms a connecting means for the two slides 51 and 36 so that under these circumstances when the rod 37 is depressed, the slide 51 will carry with it the slide 36. When, however, no coin is deposited, the slide 51 upon a depression of the rod 37 will move alone and will not affect the slide 36. Therefore, there will be no actuation of the machine. The outer end of the slide 36 upon its inner face is provided with the pin 34 previously described. Thus upon an inward movement of the slide 36, the several links 33, and 38 will cause the actuation of the several gate and feeding devices previously described. Upon a release of the rod 37, the spring 55 will cause the parts to resume their normal condition. Means are also provided for

making it necessary that a full actuation of the rod 37 shall take place. Such means is fully described in my prior application and needs no description here except to refer to the fact that a pawl 56 is mounted upon the slide 51 and is adapted to engage with certain teeth upon the wheel 52 to prevent a return of the parts to their normal position until the rod 37 has been fully depressed and a complete actuation effected.

From the foregoing description taken in connection with the drawings, the operation of my improved cigar vending machine will be apparent as the several operations of the different elements of the apparatus have been described along with a description of their construction and relative arrangement. It may be added, however, that in the practical use of the device, the cigar box is placed on end in the box holder 2 with the open front facing the operator. A few of the cigars have been previously removed from the bottom of the box and inserted in the runway or passage between the chute 5 and the members 21, thus making room for the fillet 42 and otherwise preparing the apparatus for actual operation. When a coin is inserted in the coin slot it will fall into the pocket formed between the slides 51 and 36 and operatively connect the two slides so that upon a downward movement of the push rod 37, the slides 36 and 51 will be moved rearward together, at the same time swinging the feed bar inwardly and upwardly, the gate 6 upward and inward, the cigar catching gate 11 outward and the discharge gate upward so as to permit a cigar to roll off onto the discharge gate. As soon as the coin has been dropped from between the slides 36 and 51, the slide 36 will be returned by its spring 55, and this return movement will cause the parts to resume their normal position, thus turning down the discharge gate 20 and permitting the cigar to roll off therefrom, the vending devices thus being automatically brought back to their normal position ready for a subsequent operation.

While the accompanying drawings disclose what I believe to be the preferred embodiment of my invention, it is to be understood that the invention is not limited thereto but that various changes may be made in the construction, arrangement and proportions of the parts without departing from the spirit of the invention.

What I claim is:

1. An apparatus of the character described including a delivery chute, a pivoted detaining gate mounted at the lower end of the chute and forming part of the same and movable into position to prevent the passage of articles down the chute and out of such position, a swinging article-receiving gate normally disposed in juxtaposition

to the detaining gate, and means for simultaneously rotating the detaining gate into position to detain the articles above the gate and tipping the receiving gate to discharge the article thereon.

2. A vending machine including an article chute, a detaining gate pivotally mounted at the lower end of the chute, an outwardly swinging article-receiving gate mounted in juxtaposition to the detaining gate, and operative connections to the detaining and receiving gates for automatically moving the detaining gate upward into its detaining position and outwardly and upwardly swinging the receiving gate for the purpose of discharging the article supported thereon.

3. A vending machine including an article chute, a detaining gate pivotally mounted at the lower end of the chute and forming an extension thereof, an outwardly swinging article-receiving gate having inwardly projecting portions normally supported in juxtaposition to the free edge of the detaining gate, and means for simultaneously tilting the detaining gate upward to prevent the downward passage of articles along the chute, and for swinging the receiving gate upward and outward to tilt the same and discharge the article supported thereon.

4. A vending machine including an article chute, a detaining gate mounted at the bottom of the chute and normally forming an extension thereof, a tilting receiving gate having its free end disposed in juxtaposition to the detaining gate, a delivery gate beneath the receiving gate, and means for simultaneously moving the detaining gate upward, tilting the receiving gate and tilting the delivery gate upward to receive the article discharged from the receiving gate.

5. A vending machine including an article chute, retarding devices disposed at the bottom of the chute, a receiving gate swingingly supported and having inwardly projecting members alining with the free end of the detaining gate when the latter is in its normal position, means for simultaneously raising the detaining gate to block the said chute and tilting the receiving gate, and fingers supported above the receiving gate and extending down thereto and acting to strip articles from the receiving gate when the receiving gate is tilted.

6. A vending machine including an article chute, a detaining member pivotally mounted at the lower end of the chute and movable from a position in continuation of the chute to an upwardly extending position, an outwardly swinging gate disposed forward of the detaining gate and having oppositely disposed, inwardly extending flanges normally supported in juxtaposition to the free edge of the detaining gate, said flanges being spaced from each other to provide an intermediate recess, and stripping fingers

mounted above the receiving gate and immovable with relation thereto, and means for rotating the detaining gate from a normal position to an upwardly extending position and simultaneously swinging the receiving gate outward and upward whereby to cause the stripping fingers to strip the article from the gate.

7. A machine for vending cigars including a cigar box support, a cigar chute leading from the bottom of said support and a feed device mounted to reciprocate in spaced relation to the chute and including spaced vertical rods, transverse members and pivotally supported links upon which said rods are pivotally mounted, said rods extending upward and inward toward the rear side of said cigar box support, and means for reciprocating the feed device in an outwardly and upwardly curved path.

8. A vending machine including an article chute, a feed device mounted for oscillating movement parallel to the chute, a detaining gate at the lower end of the chute, a tiltable receiving gate disposed at the free end of the detaining gate, and means for simultaneously tilting the detaining gate, the receiving gate and reciprocating the said feed device.

9. A vending machine including an article chute, oppositely disposed angular members pivotally mounted adjacent to the lower end of the chute, said members having curved inner faces, vertically extending spaced rods attached to said angular members and extending approximately parallel to the chute, transverse cross bars on said vertical rods, and means for causing an oscillation of the angular members and a reciprocation of said rods.

10. In a cigar vending machine, a chute, oppositely disposed angular members pivotally mounted on either side of the chute, said members having rounded inner faces adapted to contact with the cigars being vended, the said members being connected to each other, vertically extending rods pivotally connected to said members and extending approximately parallel to the chute, transverse bars mounted upon said rods and having rounded inner faces, and means for

causing an oscillation of the angular members and a reciprocation of said rods.

11. A vending machine including a chute for the articles to be vended, a pivoted retarding gate at the lower end of the chute, a receiving gate disposed in front of the detaining gate and movable upward and outward from its normal position, a feed device mounted to oscillate above the detaining gate, a pin carried by said feed device, means for reciprocating said pin, and link connections between said pin and the detaining gate and receiving gate.

12. A cigar vending machine including a support for a box containing the cigars to be vended, a chute extending downward from said support, a feed device disposed in front of said chute and extending upward in front of the space wherein the box is disposed and embodying members adapted to engage the cigars contained in the box, a detaining gate pivotally mounted at the lower end of the chute and adapted to be turned up into or out of position to detain the cigars in the chute, an outwardly swinging receiving gate disposed at the free end of the detaining gate, and means for simultaneously tilting the detaining gate upward, swinging the receiving gate outward and upward and raising the feed device.

13. In a cigar vending machine, a cigar box support having a chute leading therefrom, and a feed device mounted to reciprocate in spaced relation to the chute, said feed device extending upward and toward the rear side of the cigar box support and above the same and including spaced upwardly extending members and transversely extending members mounted thereon, and pivotally supported links pivoted to the lower ends of the said upwardly extending members whereby to cause an outward movement of said feed device as the feed device is raised and an inward movement of the feed device as it is lowered.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK L. STRAIGHT. [L. S.]

Witnesses:

J. L. SPENCER,
CARSON STAGGS.