L. A. VANDIVER.

VENDING MACHINE.

APPLICATION FILED SEPT. 26, 1910.

**1,012,940.** **Patented Dec. 26, 1911.**

3 SHEETS—SHEET 1.

*Fig. 1.*

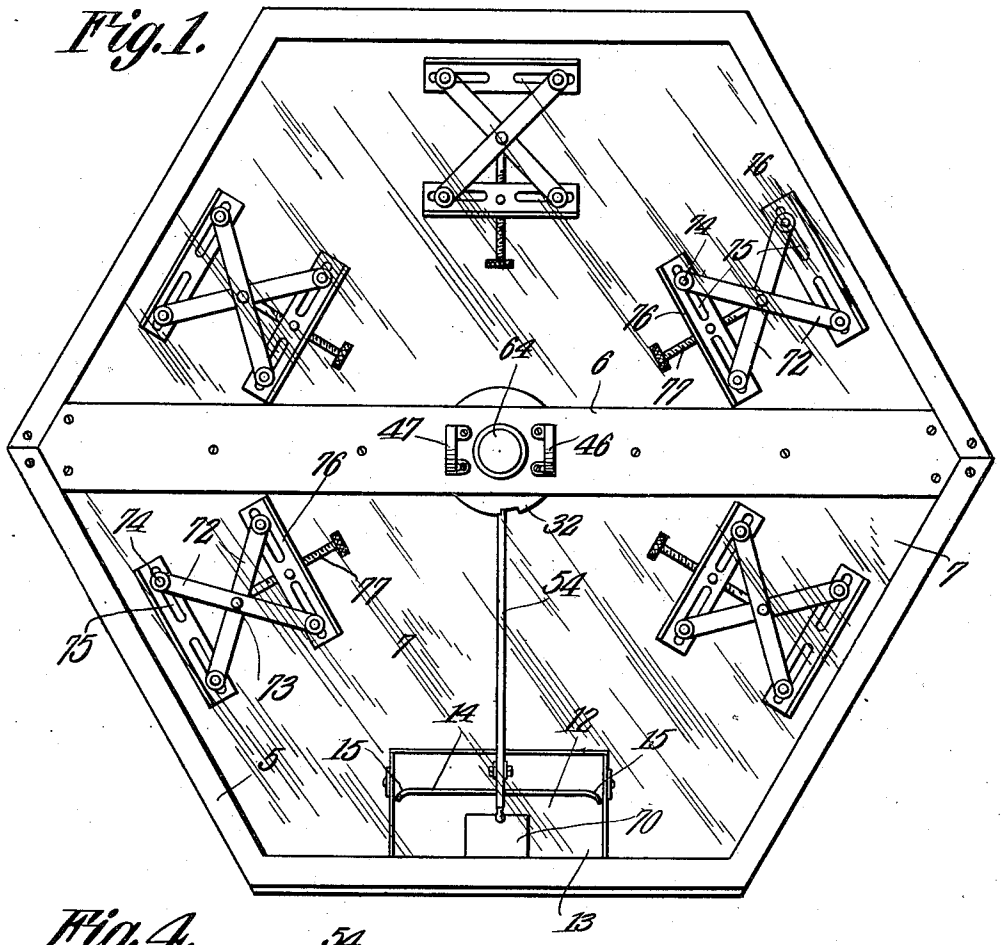


*Fig. 4.*

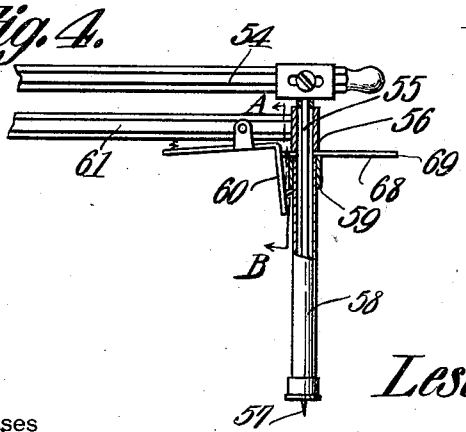



*Fig. 5.*

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3 SHEETS—SHEET 2.

Fig. 2.

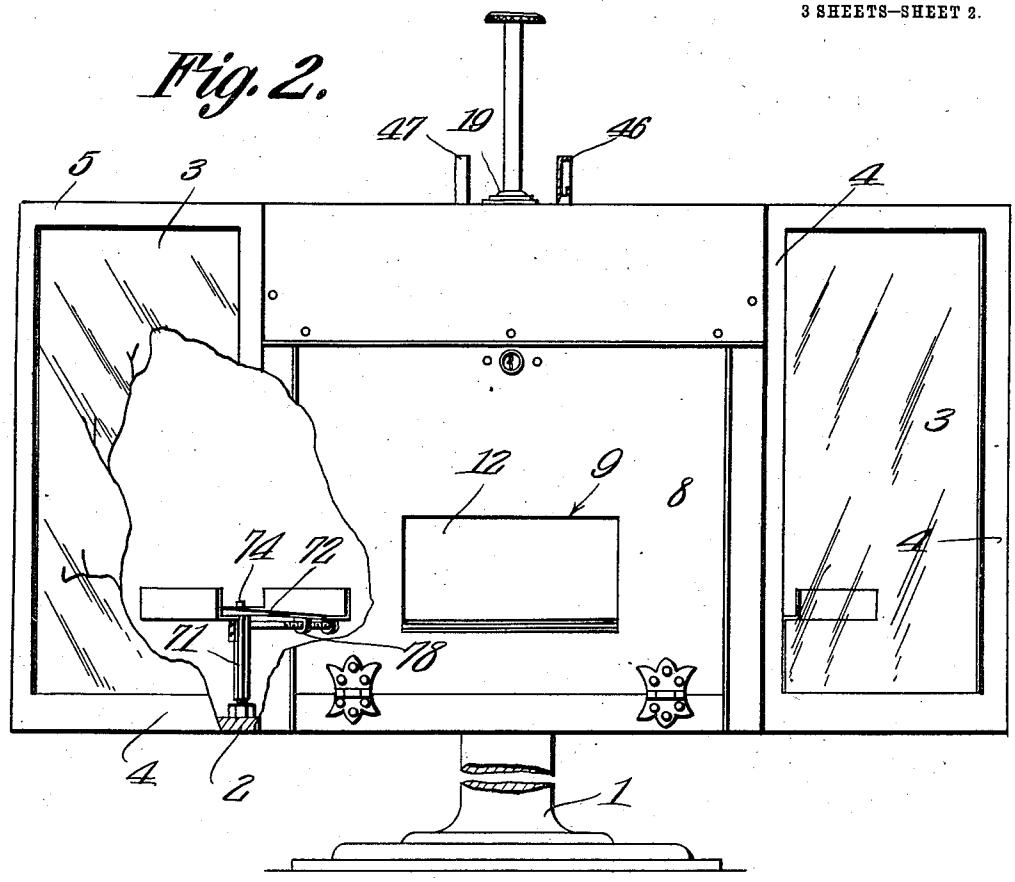



Fig. 13.

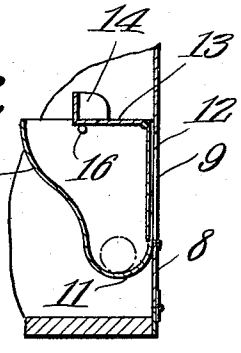



Fig. 14.

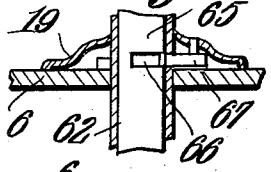
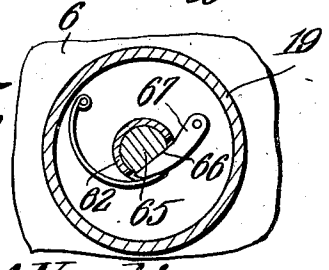



Fig. 15.

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3 SHEETS—SHEET 3.

Fig. 3.

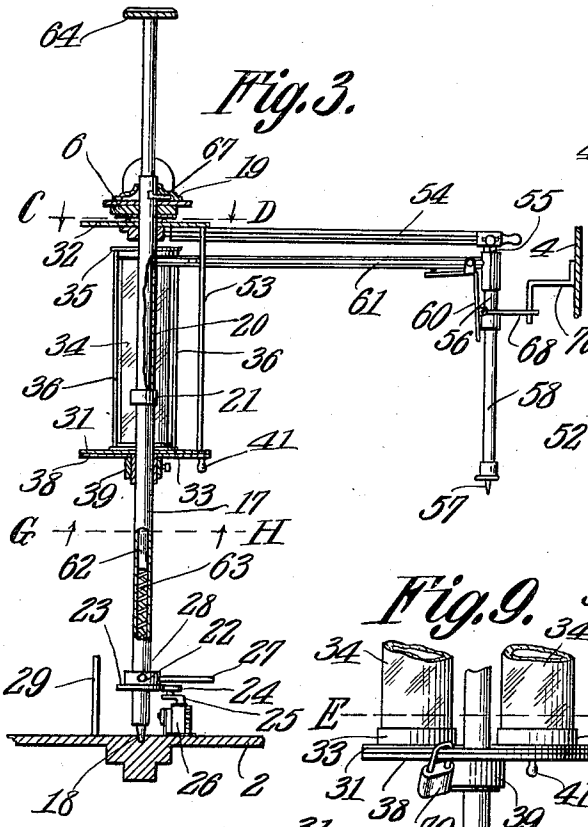
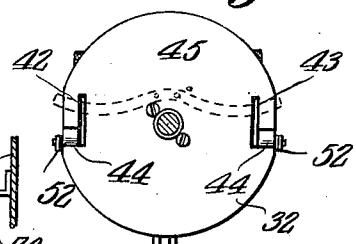



Fig. 6.



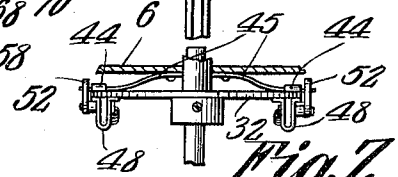




Fig. 7.

Fig. 9.



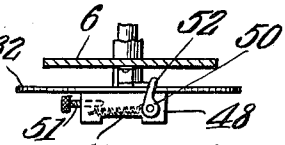




Fig. 8.

Fig. 10.

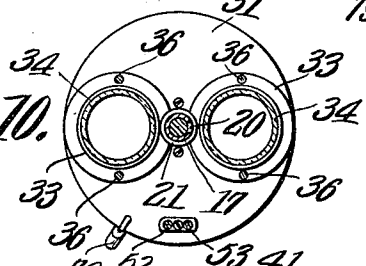



Fig. 11.

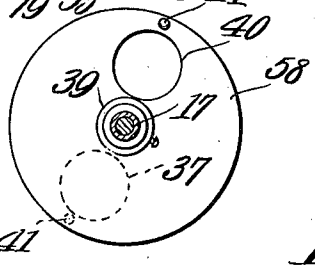
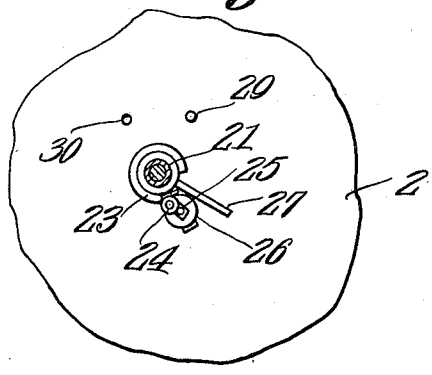



Fig. 12.

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# UNITED STATES PATENT OFFICE.

LESLIE A. VANDIVER, OF CHICAGO, ILLINOIS.

## VENDING-MACHINE.

1,012,940. Specification of Letters Patent. Patented Dec. 26, 1911.

Application filed September 26, 1910. Serial No. 583,869.

*To all whom it may concern:*

Be it known that I, LESLIE A. VANDIVER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Vending-Machine, of which the following is a specification.

This invention relates to cigar vending machines and is more particularly an improvement upon the structure disclosed in Patent No. 942,527, dated December 7, 1909.

The principal object of the present invention is to provide a vending machine having a case in which boxes containing the cigars to be vended are placed substantially in a circle about a central operating device carrying a picking-up needle which may be shifted to engage a cigar in any one of the said boxes.

Another object is to provide a combined picking-up and delivery device adapted for use in removing cigars from either of two groups within the case, the selection of the group being under the control of mechanism adapted to be released by the insertion of a coin of the proper denomination into the apparatus.

A further object is to provide a vending machine which can be restocked whenever desired by a person having access to the interior of the casing, there being, however, a money box or receptacle within the casing and which is provided with a separate lock so that the person authorized to restock the casing need not, necessarily, have access to the money receptacle.

Another object is to provide the needle of the picking-up and delivering mechanism, with a stripping device having means whereby it will be returned to its initial position and automatically locked during the stripping of a cigar from the needle after being brought to position above the discharge tray or chute.

Another object is to provide a novel form of box holder for use in the casing, this holder being so located and constructed that the box can be readily inspected without the necessity of opening the casing, to determine whether or not the same bears the proper stamp.

With the foregoing and other objects in view the invention consists in certain novel details of construction and combination of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of invention has been shown.

In said drawings:—Figure 1 is a plan view of the vending machine. Fig. 2 is a front elevation thereof, parts being broken away. Fig. 3 is a view partly in elevation and partly in section of the combined selecting and delivering mechanism. Fig. 4 is a view partly in section and partly in elevation of the needle stripper and its lock. Fig. 5 is a section on the line A—B Fig. 4. Fig. 6 is an enlarged section on line C—D Fig. 3, the locking springs being shown by dotted lines, in position to hold the selecting and delivering mechanism against rotation to its selecting position. Fig. 7 is a rear elevation of the lock portion of said mechanism. Fig. 8 is a side elevation of the part shown in Fig. 7. Fig. 9 is an enlarged elevation of the lower portion of the coin receiver. Fig. 10 is a section on the line E—F Fig. 9. Fig. 11 is a section on the line G—H Fig. 3, said section being on an enlarged scale and being taken in the direction of the arrow. Fig. 12 is a section taken on the line G—H Fig. 3 looking toward the bottom of the casing. Fig. 13 is an enlarged central vertical section through the delivering chute or tray and adjacent parts of the casing. Fig. 14 is an enlarged vertical section through the tubular spindle and its bearing cap and showing the lock for holding the plunger against downward movement. Fig. 15 is a horizontal section through the parts shown in Fig. 14, the locking dog being shown in plan.

Referring to the figures by characters of reference 1 designates a pedestal on which is supported the base 2 of a casing which is preferably hexagonal, as shown particularly in Fig. 1, the various walls of this casing, with the exception of the front wall, being formed of transparent panels 3 seated in frames 4 of metal or the like. The top of the casing is made up of a frame of the same contour and proportion as the base 1, this frame being indicated at 5 and being provided with a central cross strip 6. Transparent panels 7 are interposed between the frame and the cross strip and it will be apparent that by providing these transparent portions in the walls and top of the casing, the contents of said casing can be readily viewed and inspected. The front wall of the casing is preferably entirely of metal and has a door 8 hingedly connected thereto

and adapted to be locked in closed position. This door has an outlet opening 9 back of which is arranged a delivery chute 10 inclined upwardly and rearwardly from the opening, and forming, at its lower end, a trough 11 located entirely below said opening 9. A flap 12 is hung from the door and back of the opening 9 and has a rearwardly projecting extension 13 at its upper edge which constitutes a weight for holding the flap 12 normally pressed against the door so as to close the opening 9. This extension 13 extends partly over the chute and has an upstanding flange 14 provided with rounded ends 15. This flange constitutes a guide for the purpose hereinafter set forth. The flap 12 is adapted to swing inwardly against the inclined portion of the chute 10 but, when thus located, completely exposes the trough 11 and the article contained therein. Instead of having the flap 12 swing against the door 8 when said flap is in closed position, a stop screw 16 or the like may be extended through one wall of the chute so as to limit the downward movement of the extension 13 and, therefore, correspondingly limit the movement of the flap 12 toward the opening 9.

A tubular spindle 17 is mounted in the center of the casing and is provided, at its lower end, with a stud 18 bearing within the center of the base 2. The upper end of this spindle extends through the cross strip 6 and bears within a cap 19 secured on said strip at the center thereof. A longitudinal slot 20 is formed in the upper portion of the spindle and a stop collar 21 is arranged on said spindle. Another collar 22 is arranged on the lower portion of the spindle and has a cam 23 engaging a roller 24 which is mounted on a crank arm 25 extending from the mechanism of a counter or register 26 secured on the base 2. This cam is so shaped and located that the crank arm 25 will be shifted thereby each time the spindle 17 is moved out of its normal position.

A finger 27 extends radially from the collar 22 and can be placed in any one of a series of openings 28 within said collar, this finger being adapted, when the spindle 17 is rotated, to move against a stop pin 29 upstanding from the base 2. This stop pin can be placed in any one of a series of openings in the base so as to enable the length of movement of the arm 27 to be varied.

Disk like heads 31 and 32 are secured to and rotate with the spindle 17, the head 32 being located adjacent the cross strip 6 while the head 31 is arranged below the collar 21. Said head 31 has upstanding rings 33 thereon and which extend around the lower end of tubular receptacles 34 which, if preferred, can be made of glass. Cap rings 35 are fitted on the upper ends of these receptacles and are connected to the base head 31 by means of tie rods 36. These cap rings 35 are located adjacent the head 32. The rings 33 surround openings in the head 31 and which are of the same diameter as the receptacles 34. These openings have been indicated at 37. A disk 38 is mounted for rotation on the spindle 17 close to the bottom of the head 31, this head being held against vertical movement by means of a collar 39 secured to the spindle. Said disk has a single opening 40 therein and adapted to register with either of the openings 39 so as to permit the contents of the receptacles 34 to be discharged. A handle 41 is connected to the disk 38 and by means thereof said disk can be rotated so as to open the bottom of either of the receptacles 34. The upper head 32 carries parallel coin receiving slots 42 and 43 located at diametrically opposed points, there being an upstanding stop lug 44 adjacent the front end of each slot. A locking spring 45 is secured to the bottom face of the strip 6 and has its terminals normally bearing downwardly on the head 32 and back of the two lugs 44, these springs extending across the slots 42 and 43, as indicated by dotted lines in Fig. 6. Coin pockets 46 and 47 are arranged on the strip 6 and open downwardly through said strip, each of these pockets having an inlet opening in one side as shown in Fig. 2. The two pockets are adapted to receive coins of different denominations, respectively, and a coin deposited in the pocket 46 is adapted to drop into the slot 42 while a coin deposited in the pocket 47 is adapted to drop into the slot 43.

The coin holding and releasing mechanism is substantially similar to that disclosed in my co-pending application bearing Serial No. 527,247 and consists of a channeled receiver 48 secured under each of the slots 42 and 43 and having a discharge opening 49 in the bottom thereof. A spring controlled cam 50 is arranged in one end portion of the channeled member and coöperates with a supporting screw 51 for the purpose of holding a coin dropped through the slot and into the channeled member 48. An arm 52 extends upwardly from the cam 50 and above the head 32, this arm being located at one side of the adjacent lug 44. Outlet opening 49 is located directly above one of the receptacles 34 so that a coin discharged therethrough will drop into the receptacle.

The two heads 31 and 32 are connected by parallel guide rods 53 between which extend a supporting arm 54 which is secured to and radiates from the spindle 17 and works close to the top of the casing. A guide rod 55 extends downwardly from the free end portion of the arm and is slidably engaged by a sleeve 56 having a needle 57 at its lower end. A stripping tube 58 is slidably mounted on the sleeve 56 and has an annular shoulder 59 adjacent its upper end adapted to be en-

gaged by a spring pressed latch 60 carried by an arm 61 which is integral with the upper portion of the sleeve 56 and radiates from a plunger 62 which is slidably mounted within the spindle 17. This arm 61 extends through the slot 20 and a spring 63 is interposed between the lower end of the rod 62 and the bottom portion of the spindle 17 and serves to hold the plunger normally elevated and the arm 61 normally close to the arm 54. A knob 64 is arranged at the upper end of the plunger and by means thereof the said plunger, the spindle, and the other parts connected thereto, can be rotated subsequent to their release. Moreover by depressing the knob, the plunger, the arm 61, and parts connected thereto, can be pushed downwardly when the said arm occupies a predetermined position with relation to the outlet chute 10. In order that the depression of the arm 61 and the plunger 62 may be prevented while said arm is overhanging the chute 10, normally registering notches 65 and 66 are formed in the spindle 17 and the plunger 62, these notches constituting a seat for a spring pressed locking dog 67 which is pivotally mounted within the cap 19. The dog and notches are so positioned relative to each other that, as long as the needle 57 is located over the trough 10, the dog will remain seated within the notches and thus prevent the depression of the plunger 62.

The specific structure of the guide rod 55, sleeve 66 and stripping tube 58, constitute no part of the present invention inasmuch as the same has been disclosed in my patent hereinbefore referred to.

The stripping tube 58 has an angular releasing plate 68 secured thereto or formed integral therewith, this plate bearing against the latch 60 and having a tongue 69 extending forwardly. A tripping plate 70 extends inwardly from the front wall of the casing and projects into the path of the tongue 69, this plate being so shaped that, when the arms 54 and 61 are brought into position over the chute 10, the tongue 69 will move against the tripping plate and be shifted thereby so as to throw the latch 60 out of engagement with the shoulder 59. It is to be understood of course that a spring is suitably housed within the stripping tube and serves to shift it downwardly when released. Moreover any suitable means may be provided for limiting this downward movement of the tube relative to the needle. Inasmuch as these means do not constitute any part of the present invention, however, it does not seem necessary to illustrate them.

In order that the boxes of cigars may be properly held within the casing, standards 71 are secured to the base 2 at desired intervals, each standard having crossed connecting strips 72 pivotally connected to it, as shown at 73. The ends of these strips are provided with studs 74 slidably mounted in slots 75 formed in angular gripping strips 76, there being an adjusting screw 77 swiveled in the standard 71 and threaded through a block 78 carried by one of the strips 76. By rotating the screw, the strips 76 can be moved away from or toward each other so as to receive boxes of different sizes and by moving the strips toward each other after the boxes have been placed on the connecting strips 72, the said strips 76 can be caused to clamp on the boxes and thus hold them firmly in place. One of these box holders is preferably located close to each of the walls of the casing, with the exception of the front wall and inasmuch as such casing is hexagonal, it will be apparent that stamps and other marks upon the boxes can be readily inspected without the necessity of opening the casing and removing boxes. All of the holders and the boxes to be supported thereby, slide directly under the path of movement of the guide rod 55 and the parts mounted thereon.

Under normal conditions, the needle 57 is supported above the chute 10 and cannot be moved beyond the ends thereof because the terminal portions of the spring 45 are located in the path of the lugs 44. Nor can the needle be depressed or moved downwardly into the trough 10 because the spring pressed dog 67 lies within the two registering notches 65 and 66 and plunger 62 cannot be moved downwardly within the spindle 17. The boxes mounted on the supporting strips 76 contain two grades of cigars. For example cigars selling at five cents each are placed in the boxes at one side of the chute 10 while cigars selling for ten cents each are placed in the boxes at the other side of the chute. The stop pin 29 is inserted in an opening 30 in the base 2 so as to lie in a line extending radially from the spindle 2 and between the two groups of boxes. Obviously access can be conveniently had to the boxes and their contents by unlocking the door 8 but, in order to obtain access to the money receptacles 34, it is necessary to remove a separate lock such as has been shown at 79 and which engages the head 31 and the disk closure 38 so as to hold said closure against rotation and with the opening 40 out of register with the openings 37. Should it be desired to purchase a five cent cigar, a five cent piece is placed in the coin pocket 47 and dropped therethrough onto the spring 45 thereunder, and directly over the slot 42. By then partly rotating the knob 64 in one direction, the slot 42 is removed from under the spring 45 and the coin is permitted to drop into the said slot and then into the channeled member 48 thereunder. The coin will be supported in this channeled member by the cam 50 and by the screw 51. The lug

44 adjacent the slot 43 will work against spring 45 so as to prevent the needle from swinging in the direction of the boxes containing the ten cent cigars. When, however, the spindle 17 is rotated in the opposite direction, the coin deposited in the slot 42, will travel under the adjacent end of spring 45 and elevate it so as to permit the adjacent lug 44 to pass under the spring. Spindle 17 can therefore be rotated to bring the arms 54 and 61 above any one of the boxes containing the five cent cigars and at the same time the notched portion of the spindle will pass out of engagement with the spring pressed dog 67. As the head 32 rotates relative to the spring 45, arm 52 strikes the adjacent end of spring 45 and is tripped thereby, thus freeing the coin and permitting it to drop into the receptacle 34 which is located under the channeled member 48. With the various parts thus unlocked, the needle 57 can be swung into position above the cigar which it is desired to remove and can then be depressed by pushing downwardly on the knob 64. As the needle 57 is normally housed within the stripping tube 58, it will be apparent that the lower end of said tube will first contact with the cigar after which continued downward movement of the parts will result in the projection of the needle 57 into the cigar and the movement of the latch 60 into engagement with the collar 59 on the stripping tube. Said tube will therefore be held locked and with the needle projecting beyond its lower end and into the cigar. By removing the pressure on the knob 64, spring 63 will elevate it and the arm 61 to their initial positions and said arm and the arm 54 can be swung back to position above the trough 10 whereupon the spindle and plunger will be automatically locked together against independent movement by the dog 67. As the sleeve 56 arrives above the center of the trough, the tongue 69 strikes the tripping plate 70 and said tongue causes this plate 68 to partly rotate and to shift the latch 60 out of engagement with the shoulder 69. Stripping tube 58 will therefore promptly move downwardly and will force the cigar off of the needle 57 and into the trough 11 at the bottom of the chute 10. As the parts assume their positions above the chute, the spring 45 again assumes its position in the path of the lugs 44 and said parts therefore become locked and cannot again be actuated until a coin is inserted into the machine in the manner hereinbefore described. To remove the cigar it is merely necessary to press the flap 12 inwardly whereupon said cigar will be accessible by inserting a hand through the opening 9. While the needle 56 is above the chute 10, the roller 24 is rotated in the recess formed between the ends of the cam 23. When, however, said needle is moved beyond the chute and into position above any of the boxes, the roller 24 is shifted laterally by the cam 23 and thus causes the counter 26 to register one point. As soon as the parts return to their initial positions above the chute the wheel 24 drops back into the recess between the ends of the cam (see Fig. 12) thus resetting the counter. This counter is adapted to actively indicate the number of cigars removed from the machine. The rotation of the needle about the interior of the casing is limited by the arm 27 coming in contact with the pin 30, this pin thus preventing the needle from being brought into position to remove a ten cent cigar should only five cents be deposited in the machine.

By arranging the guide flange 14 upon the extension 13, the cigars, as they are brought into position above the chute 10, will contact with one or the other of the rounded ends of the flange and will be straightened out so as to fall properly into the chute.

What is claimed is:—

1. A vending machine including a casing for holding receptacles, a combined picking-up and conveying device mounted to swing about an axis extending between the receptacles, and means for locking the device against swinging movement.

2. A vending machine including receptacle holding means, a delivery element, a combined picking-up and conveying device mounted to swing about an axis perpendicular to the bottom of the receptacle, and means for automatically discharging a conveyed object from said device and into the delivery element.

3. A vending machine including a receptacle holding casing, a delivery element, a combined picking-up and conveying device mounted to swing in the casing about an axis perpendicular to the bottom of the receptacle and normally located above the delivery device, and means for locking said element in normal position.

4. A vending machine including a receptacle holding casing, a combined picking-up and conveying device mounted for sliding movement toward or away from the receptacle and for swinging movement about an axis perpendicular to the bottom of the receptacle, and means for normally locking the device in a predetermined position against swinging movement.

5. A vending machine including a receptacle holding casing a combined picking-up and conveying device mounted for sliding movement toward or away from the receptacle and for swinging movement about an axis perpendicular to the bottom of the receptacle, and means for automatically locking said device against sliding movement upon reaching a predetermined position during its swinging movement.

6. A vending machine including a recep-

tacle holding casing a delivery element, a combined picking-up and conveying device mounted to swing in either direction from said delivery element about an axis perpendicular to the bottom of the receptacle and to slide toward or away from the receptacle, means for limiting the movement of said device away from the delivery element, and means for locking said element against movement away from said delivery element.

7. A vending machine including a casing, a delivery element, a combined picking-up and conveying device mounted to swing about an axis perpendicular to the bottom of the casing, a lock for holding said device against movement beyond the delivery element, and means for releasing said device.

8. A vending machine including a delivery element, a combined picking-up and conveying device mounted for rotation in a path extending across the delivery element, means for limiting the rotation of the device in either direction, means for automatically locking said device against rotation beyond the delivery element, and means for unlocking said device to permit its movement beyond the delivery element.

9. A vending machine including a combined picking-up and conveying device mounted for rotation, and for up and down movement, means for automatically locking the device against up and down movement when rotated to a predetermined position, means for automatically locking the device against rotation when brought to said predetermined position, and means for releasing said device to permit its rotation.

10. A vending machine including an article engaging element, means for moving said element about a fixed point, means for shifting said element vertically into and out of engaging position, and means for automatically locking said engaging element against vertical movement during a portion of its movement about its center.

11. A vending machine including a spindle mounted for rotation, a yieldingly held plunger slidable therein and revoluble therewith, combined picking-up and conveying means movable with the plunger, and a latch for automatically engaging the spindle and plunger during a portion of the rotation thereof to hold the plunger against sliding movement.

12. A vending machine including a spindle mounted for rotation, a plunger slidable therein and revoluble therewith, the plunger being yieldingly supported, combined picking-up and conveying means movable with the plunger, means for locking the spindle against rotation, and means for releasing the spindle from the lock when the spindle is rotated in one direction.

13. A vending machine including a casing having transparent portions, and annular series of receptacle holding devices within the casing, vertically movable means mounted to swing about a fixed axis extending between said devices for removing an article from any one of the receptacles upon the holders, a lock for holding said means against movement, and means for releasing said article engaging means from its locked position.

14. A vending machine including a casing, a combined picking-up and conveying device movable in an arc within the casing and about an axis perpendicular to the bottom of the casing, a series of receptacle holding members within the casing and below the arcuate path of movement of said device and means for depressing said device into any one of the receptacles thereunder.

15. A vending machine including a casing, said casing having an outlet opening, a chute within the casing and back of the opening, said chute having a trough at the bottom thereof and below the opening, a closure for said opening, said closure being movable into the chute to expose the trough through the opening, a combined picking-up and conveying device mounted for rotation within the casing and across the top of the chute, a stripping device movable therewith, and means for automatically actuating the stripping device upon reaching a position above the chute to discharge the engaged object into the chute.

16. A vending machine including a casing having transparent portions, means therein for holding receptacles with the outer faces thereof exposed to view from the outside of the casing, and means mounted for rotation within the casing and about an axis extending between the receptacles for picking up and conveying an article from a receptacle mounted on the holding means, and means for delivering said article to a point within reach of a person outside of the casing.

17. A vending machine including a receptacle holding casing, a combined picking-up and conveying device mounted to swing about an axis perpendicular to the bottom of the receptacle in the casing, and means for locking the device against swinging movement.

18. In a vending machine, the combination with a casing, and means movably mounted therein for engaging and conveying an object, of receptacle holding means located below said engaging and conveying means, said holding means including pivotally connected crossed strips, angular gripping strips slidably engaged by said crossed strips, and means engaging one of the gripping strips for shifting it toward or away from the centers of the crossed strips.

19. In a vending machine, the combination with a casing, and a combined pick-up and conveying device movably mounted

within the casing, of means supported below said device for holding a receptacle against movement, said means including a support, crossed connecting strips pivotally mounted thereon at points between the ends of the strips, receptacle gripping strips slidably and pivotally connected to the end portions of said connecting strips, and an adjusting screw swiveled upon the support and engaging one of said gripping strips, said screw constituting means for shifting said strip toward or away from the support.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LESLIE A. VANDIVER.

Witnesses:
A. C. CONAWAY,
HOYT COX.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."