

W. B. PULVER.
CHECK CONTROLLED VENDING MACHINE.
APPLICATION FILED, APR. 18, 1904.

945,488.

Patented Jan. 4, 1910.
3 SHEETS—SHEET 1.

Fig. 2.

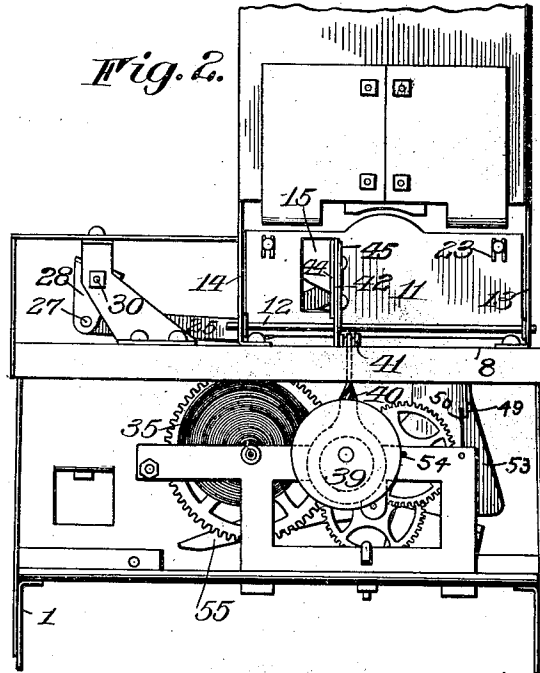


Fig. 1.

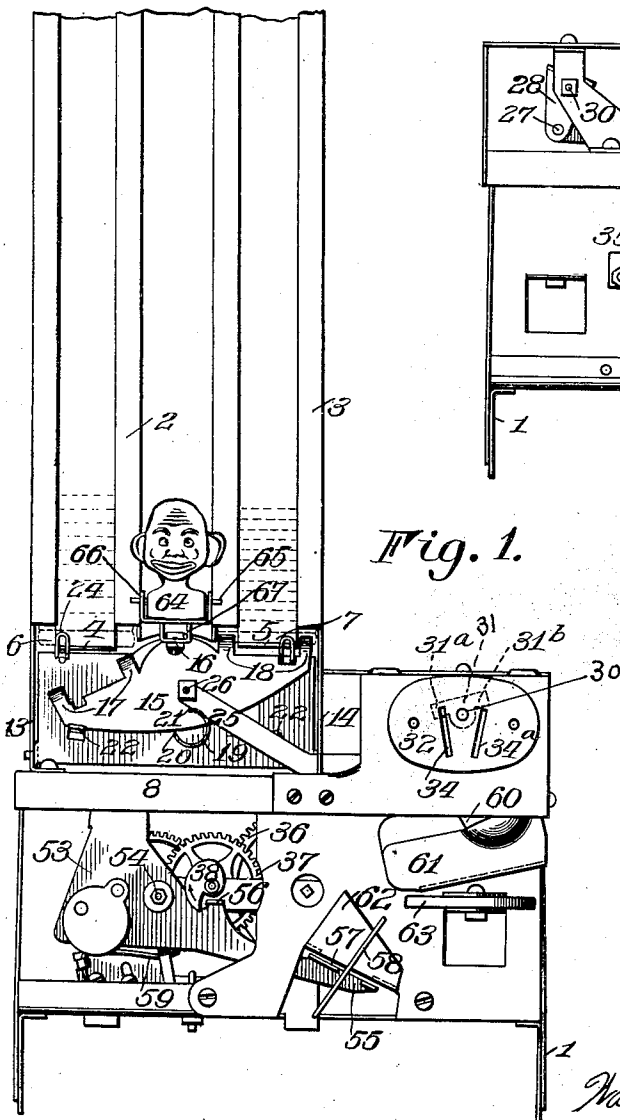
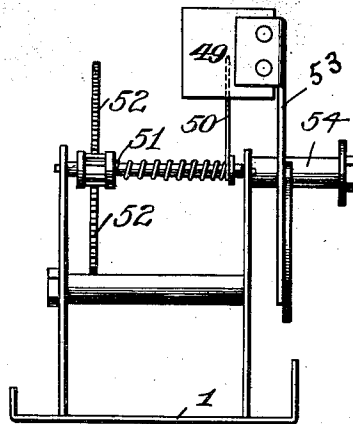


Fig. 3.



Walter B. Pulver Inventor

Witnesses

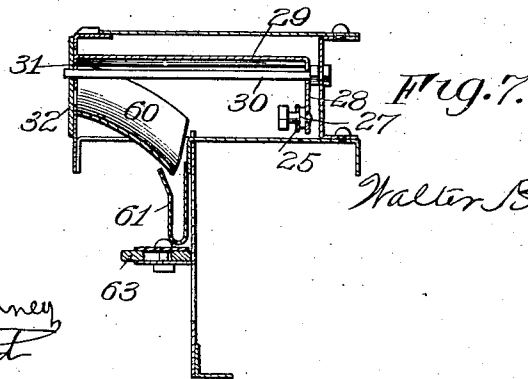
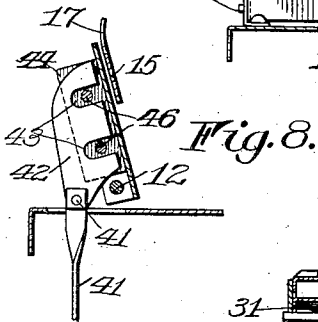
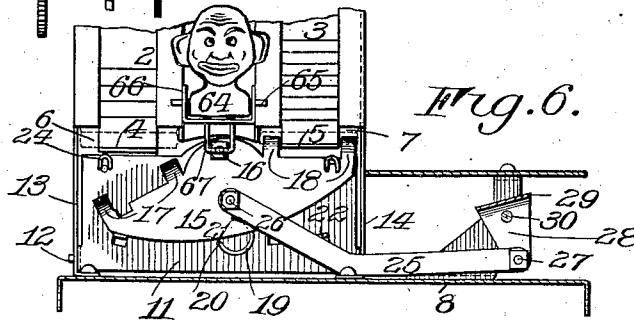
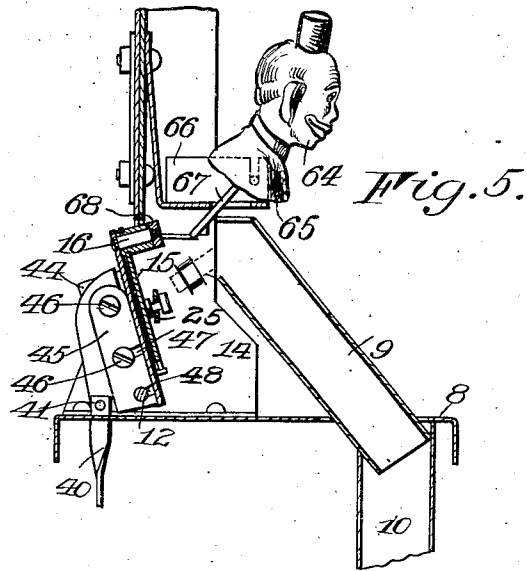
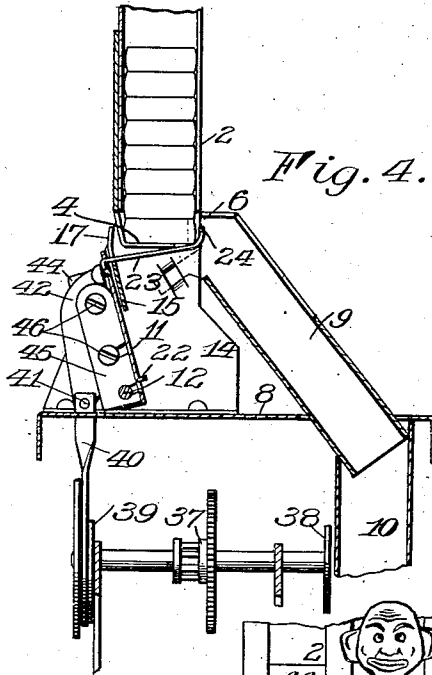
John J. McLaughlin
A. Rowland

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3 SHEETS—SHEET 2.



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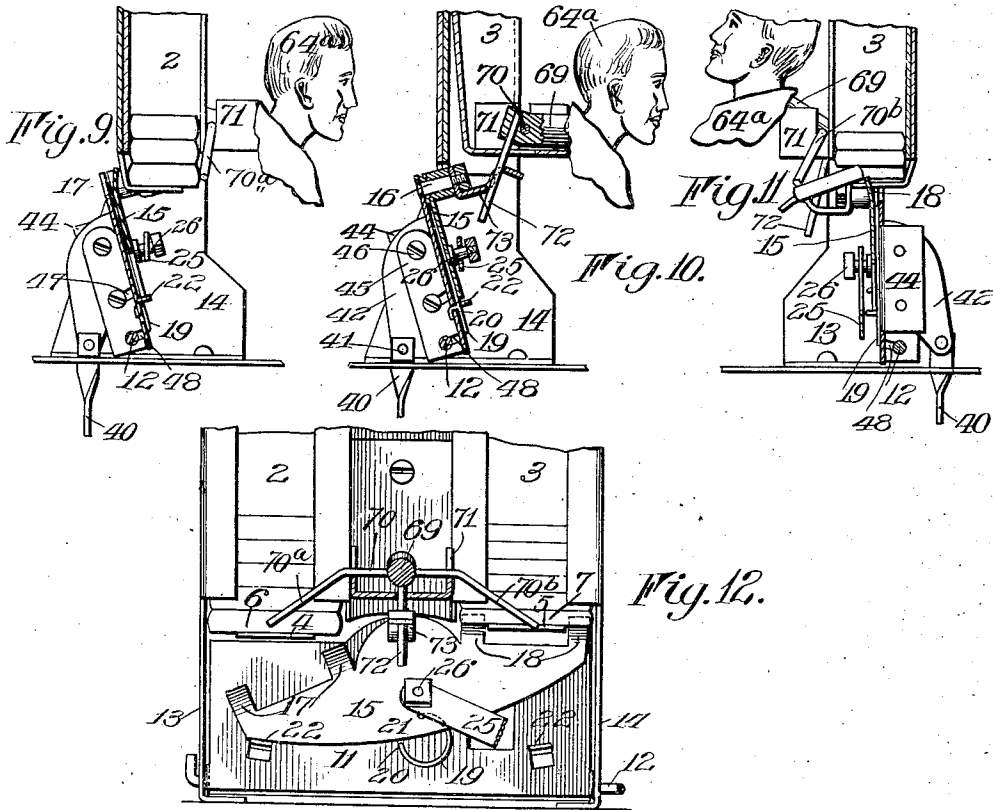
John J. M. Loney
Rowland

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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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CHECK-CONTROLLED VENDING-MACHINE.

945,488.

Specification of Letters Patent.

Patented Jan. 4, 1910.

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To all whom it may concern:

Be it known that I, WALTER B. PULVER, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Check-Controlled Vending-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to improvements in vending machines and more especially to that class wherein automatic mechanism is employed for delivering the goods which is controlled in its operation by the deposit of a coin of the proper denomination, and it has for its object to provide a delivering mechanism for a machine of this character that enables the employment of a plurality of goods-holders from which the goods may be delivered through the operation of a selecting device which is so controlled by the insertion of the coin that goods from the desired holder will be delivered to the purchaser.

To these and other ends my invention consists in certain features of construction and arrangement to be hereinafter more fully explained, the novel features being pointed out in the claims hereunto annexed.

In the drawings: Figure 1 is a front elevation of a vending machine embodying my invention, showing it removed from its case. Fig. 2 is a rear elevation of the same, parts being omitted. Fig. 3 is an end view of the device looking toward the right, Fig. 1. Fig. 4 is a fragmentary sectional view taken vertically through the left-hand goods-holder looking toward the right. Fig. 5 is a similar view taken centrally between the goods holders. Fig. 6 is a fragmentary front view with parts removed, showing the selecting device. Fig. 7 is a fragmentary vertical sectional view showing the coin chute. Fig. 8 is a detail sectional view of the goods ejector and contiguous parts. Figs. 9 and 10 are fragmentary sectional views taken vertically through the left-hand holder and through the center between the holders, showing the goods ejector in position in readiness

to operate. Fig. 11 is a similar view taken vertically through the right-hand holder and looking toward the left, showing a package of goods while being ejected, and Fig. 12 is a front elevation of the ejecting mechanism and selector carried thereby showing the latter in position for ejecting a package of goods from the left-hand package holder.

The same numerals of reference designate similar parts in the several views.

A vending machine embodying my various improvements comprises in the present instance a main frame or base 1 supporting the goods containers or holders 2, 3, respectively, the lower ends of which are provided with the rests or supports 4, 5, respectively leading to the discharge apertures 6, 7 formed in the front of each holder. These holders or containers are preferably mounted on an upper stage or platform 8, through which the delivery chute 9 leading from the discharge apertures 6, 7 in the goods holders to the hopper 10, passes.

Beneath the goods holders or containers is mounted the delivery mechanism, embodying in the present instance a laterally swinging plate or carrier 11, pivotally mounted on the pivot pin 12 which is supported in the side plates 13 and 14 in such manner as to permit a forward and rearward motion of said carrier plate. Upon this swinging plate is mounted a selector embodying in the present instance a swinging member 15 pivoted upon the pivot pin 16 and so arranged that when said member is swung into one position, the fingers or projections 17—17 upon one end thereof will engage at each side of the support 4 at the lower portion of the holder 2, projecting upwardly therefrom to engage the rear edge of a package of goods and move it forwardly through the discharge aperture 6 as the ejecting or discharging mechanism is moved forwardly. A similar relation will be established when the plate 15 is swung in the opposite direction between the projections or fingers 18 and the support 5 at the bottom of the container or holder 3, and in order to insure the proper position of the selector in both positions, a spring 19 may be provided, one end of which rests in an aperture 20 in the plate 11 and the opposite

end rests in the aperture 21 formed in the swinging plate or selector 15 preferably at a point that will be immediately in line with the pivot pin 16 and the aperture 20 when the selector occupies a position midway of its two positions, at which time the action of the spring will be neutralized; but when the selector is moved beyond this central position, the action of the spring will tend to complete its motion to bring the ejector fingers 17 or 18 into position to deliver a package from their corresponding holder, the motion of the selector in either direction being limited by the stops 22—22 that are preferably formed on the swinging or oscillatory plate 11. If desired, a retaining arm 23 may be provided upon the oscillatory carrier plate 11 beneath each package or goods holder, the upturned end 24 of which is adapted to rest in front of the bottom package of the holder to prevent its discharge through its respective discharge aperture 4—5 while the parts remain in their normal position. In conjunction with a selector of this character, I employ a device for operating it that may be controlled by the purchaser in depositing his coin, and in the present embodiment, I have illustrated such a device comprising a rod or arm 25 pivotally attached as at 26 to the swinging plate or selector 15 at a point preferably intermediately of the pivot 16 and the point of attachment 21 of the operating spring 19, the opposite end of this arm being similarly attached at 27 to the arm 28 of the oscillatory member 29, the latter being mounted upon the pivot pin 30, and carrying at its forward portion a striking plate 31, which is arranged immediately in rear of the coin plate 32 in which are formed the coin slots 34, 34^a. While the parts rest in their normal position, either the arm 31^a or the arm 31^b of the striking plate will partially close its corresponding coin slot 34 or 34^a respectively, and it will be retained in such position under the action of the spring 19. However, should a coin of the proper denomination be inserted into the slot that is partially obstructed by an arm of the striking plate, the passage of the coin will dislodge the said arm therefrom causing the member 29 connected thereto and carrying the arm 28 to be tilted on its pivot 30, and as the operating arm 25 is connected to this oscillatory arm 28, the motion of the latter is imparted to the movable selector 15, causing it to swing into such a position that the ejector fingers 17—17 or 18—18 thereon will move into position to eject the package from the desired holder. In practice it is preferable to arrange the coin slots 34, 34^a in the same corresponding relation as that of the package or goods holders, for the reason that such an arrangement enables the pur-

chaser to readily understand that when a coin of the proper denomination is inserted into the right hand coin slot 34^a, a package of goods will be delivered from the right hand package container or holder, and vice versa with the opposite left-hand slot.

In order to render the device automatic in its operation, I usually employ operating mechanism that is automatically set into operation by a coin after it has been passed through the desired coin slot by the purchaser, which mechanism being connected to the swinging or oscillating plate 11 will cause a package to be delivered from the desired holder, and this mechanism as shown in the present embodiment comprises a clock motion or train operated by a spring 35 connected to the main driving wheel 36 which gears with the wheel 37 carrying the lever operating cam 38, and also the eccentric 39 to which latter is connected the rod 40 attached to the pin 41 carried by the plate 42. This plate 42 is provided with a pair of slots 43—43 of a predetermined length and width in order to permit the said plate to enter between the clamping plates 44, 45 and enable it to be adjusted within a wide range of positions without interfering with the clamping screws 46. The outer plate 45 is preferably provided with a slot 47 for the lower screw 46, and a similar slot 48 whereby said plate may be caused to swing about the upper screw 46 by loosening the lower one, and thereby cause the lower slot 48 to disengage itself from a flattened or reduced portion formed in the pivot pin 12, thus enabling the latter to be readily withdrawn longitudinally in order that the swinging plate 11 carrying the selector and other parts, may be expeditiously removed.

Such an arrangement as above described will operate in the following manner in delivering a package: Assuming that the wheel 37 is set in rotation by the clock train it will be readily perceived that the eccentric during its rotation will cause the connecting rod 40 to reciprocate and as this connecting rod is connected to the pivoted carrier plate 11 by means of the plates 44 and 45, the reciprocatory motion of the latter will impart an oscillatory motion to the carrier plate 11 carrying the selector, causing it to move first forwardly bringing the ejector fingers 17—17 into engagement with the lowest package in the corresponding holder or container and causing it to move forwardly through the discharge aperture 3 or 4 in the holder and into the package delivery chute 9 from whence it passes into the hopper 10 where it becomes accessible to the purchaser, continued motion of the eccentric 39 causing the carrier plate to be retracted into its normal position so that the selector 15 may be freely moved in order to bring the ejector fingers into

position in readiness to eject a package of the desired variety from its holder in the next succeeding operation of the eccentric. The operation of the eccentric is controlled in the present instance by the arresting device 49 so arranged as to move into the path of the arm 50 carried by the spindle 51 connected to the wheel 37 through the wheel 52 and thereby arrest the motion of the eccentric; and as this arrester is carried by the lever 53 and as this lever is pivoted at 54, it will be obvious that when the opposite end 55 is depressed, the said arresting device will be moved out of the path of the arm 50, permitting it to rotate and with it the eccentric 39 and the cam 38, the rotation of the latter causing the spiral surface thereof to bear upon the rest 56 upon the lever and consequently cause the latter to continue its downward motion until the coin which rests upon the coin plate 57 of the lever is ejected from its position by moving into contact with the ejector 58, and when the highest point of the cam 38 has passed over the bearing portion 56 the lever carrying the arresting device 49 is immediately returned to its normal position under the influence of the spring 59, thereby causing the arresting device 49 to move into the path of the arm 50 and thus arrest the motion of the clock train when the eccentric has moved the package ejecting mechanism forwardly to eject a package from its holder and retracted it to its normal position ready for the next succeeding operation. This operating mechanism is arranged to be set in motion by a coin, which enters either coin slot 34, or slot 34^a operating the striking plate 31 causing it to shift the selector 15, and thence continuing along the coin chute 60 from which it is discharged into the trough 61 down which it rolls and drops through the guide 62 and thence upon the coin plate 57 of the releasing lever 53, spurious objects possessing magnetic properties being attracted by the magnet 63 and thereby diverted from their normal course to prevent their falling upon the coin plate of the lever.

In the present embodiment of my invention I have illustrated an automaton that may be conveniently located between the package holders or containers 2 and 3, and which can be so arranged as to be operated directly by the delivering mechanism, that form thereof illustrated in Figs. 1 and 5 of the drawings embodying preferably a head 64 pivotally supported by the pin 65 in the support or holder 66 which latter occupies a relatively fixed position between the package holders, an operating arm 67 attached to the pivotally movable automaton being so arranged as to lie in the path of the projection 68 or other part of the movable carrier 11, whereby when said portion

advances forwardly, it will engage the operating arm 67, consequently moving it forwardly and causing the automaton to raise its head, the return motion of said carrier permitting said automaton to resume its normal position thereby performing a bow or other appropriate salutation.

A somewhat modified form of automaton is shown in Figs. 9 and 11 inclusive, wherein the head 64^a is supported by an extension 69 which is pivoted by the pin 70 to the relatively fixed support 71, the said pin 70 being provided with the two laterally extending arms 70^a and 70^b which extend downwardly and across the discharge apertures 6 and 7 of the package containers, thereby normally preventing the discharge of the packages therefrom unless the discharging mechanism is in motion. In this instance the automaton is operated by the downwardly extending arm 72 which is connected to the extension 69 and coöperates with an operating projection 73 carried by the reciprocating carrier 11 of the delivering mechanism.

A vending machine embodying my invention enables a device of this character to be produced having a plurality of goods or package containers each of which may be supplied with a particular variety of goods, and a selecting device that is automatically operated by the insertion of the coin by the purchaser whereby the particular variety or kind of goods will be delivered by an automatically operating delivering mechanism; and while my invention is capable of being employed effectively in various forms, that form hereinbefore described is particularly desirable, as it is made up of comparatively few parts that may be readily assembled and repaired, and which are easily and positively operated and not subject to derangement as a result of careless or reckless use.

I claim as my invention:

1. In a vending machine, the combination with a plurality of receptacles adapted to contain the articles to be vended, of delivery devices embodying a selector carrying a plurality of ejecting devices and having a movement to carry the different ejecting devices into and out of coöperating relation with different receptacles and a movement to cause the positioned ejecting device to engage and eject an article from the selected receptacle, and means for setting said selector to deliver an article from the receptacle selected by the purchaser.

2. In a vending machine, the combination with a plurality of goods receptacles, of a delivery carrier movable past the discharge ends of the receptacles, a selector mounted on the carrier and movable thereon in a direction transversely of the movement of the carrier, and ejecting devices on the selector

adapted to be moved into position by the setting of the selector to eject the goods from the receptacle selected by the purchaser.

3. In a vending machine, the combination with a plurality of receptacles, of a swinging carrier operating past the receptacles, a selector movably mounted thereon in a plane transverse to the plane of movement of the carrier and having ejecting devices thereon, and means for operating said selector to move said ejecting devices into position to engage and eject an article from the desired receptacle.

4. The combination with a plurality of receptacles, of a movable carrier, a selector pivotally mounted thereon and provided with separate ejecting devices which are carried and adapted to be positioned by the selector so as to deliver an article from the desired receptacle during the motion of said carrier, and means for operating said selector.

5. The combination with a plurality of receptacles each having a support at its lower end from which the articles are to be discharged, of a movable carrier, and a selector carried thereby having separate ejectors each adapted to engage an article upon its support and eject it from its receptacle, and means under control of the purchaser for operating the selector to bring the ejector into position to deliver an article from the desired receptacle.

6. The combination with a plurality of receptacles each having a support at one end from which the articles are to be discharged, of a carrier, and a selector movably mounted thereon and provided with a plurality of ejectors each embodying a pair of fingers or projections arranged to engage the article at each side of its support and eject it therefrom during the operation of the carrier, and means for operating the selector to position the corresponding ejector for delivering an article from the desired receptacle.

7. The combination with the goods receptacles, a carrier movably mounted in proximity thereto, and a selector having ejecting devices coöperating therewith for ejecting the articles from their respective holders, of an actuating device for said selector embodying a movable plate, and a connection interposed between it and the selector for controlling the operation of the latter.

8. The combination with the goods receptacles, a carrier, and a selector movably mounted thereon and provided with ejectors for ejecting the articles from their respective receptacles, of a spring acting upon said selector to yieldingly retain the ejectors thereof in operative position.

9. The combination with the receptacles, a movable carrier, and a selector pivotally mounted thereon and provided with ejecting

devices arranged to be moved into position to deliver an article from their respective receptacles, of a spring interposed between said carrier and selector and operating to move each ejecting device into operative position with its corresponding receptacle when moved toward such relation therewith.

10. In a vending machine, the combination with a plurality of receptacles adapted to contain articles to be vended, of a delivery device embodying a selector, means for setting the selector to deliver an article from the receptacle selected by the purchaser, a motor operating the delivery device, an arresting device for the motor, and means for releasing the motor after the selector has been set.

11. The combination with a goods receptacle having a discharge aperture formed in the lower portion thereof, of a movable delivery mechanism located adjacent the discharge aperture carrying ejectors for discharging an article through said aperture during its operation, and also carrying a retaining device obstructing the discharge aperture while the delivery mechanism rests in its normal position to prevent the passage of articles therethrough.

12. The combination with a goods receptacle having a discharge aperture formed in the lower portion thereof, of a movable carrier mounted in proximity to said aperture, devices carried thereby for ejecting articles through said aperture, and a retaining finger carried by the carrier and arranged to obstruct said discharge aperture while the carrier rests in its normal inoperative position.

13. In a vending machine, the combination with a goods receptacle, of a pivoted carrier having ejecting devices for discharging the articles from said receptacle, during its operation, a motor for imparting reciprocatory motion to the carrier, and an adjustable connection between the carrier and motor embodying a pair of clamping plates carried by one member and an adjusting plate connected to the other and arranged to be secured between the clamping plates.

14. In a vending machine, the combination with the goods receptacle and the delivering device mounted upon a removable pivot pin in proximity to the receptacle, of a relatively fixed portion carried by said device and a movable clamping plate secured to the relatively fixed portion and having a slot formed therein arranged to engage a stop upon the pivot pin to prevent its removal, and an adjustable plate adapted to be clamped in the desired adjusted position between the fixed portion and the clamping plate, and having a connection with the delivery operating motor.

15. In a vending machine, the combina-

tion with a goods receptacle, and a movable
delivery device for ejecting the articles
therefrom, of an automaton pivotally mount-
ed in proximity to said movable device, an
5 operating extension or projection connected
thereto and cooperating with the movable
device during its operation to cause the mo-
tion of the automaton, and retaining fingers

carried by the automaton normally prevent-
ing the delivery of articles from the recep- 10
tacle.

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Witnesses:

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