G. W. PETER.

VENDING MACHINE.

APPLICATION FILED FEB. 9, 1910.

990,899.

Patented May 2, 1911.

3 SHEETS—SHEET 1.

Fig. 1

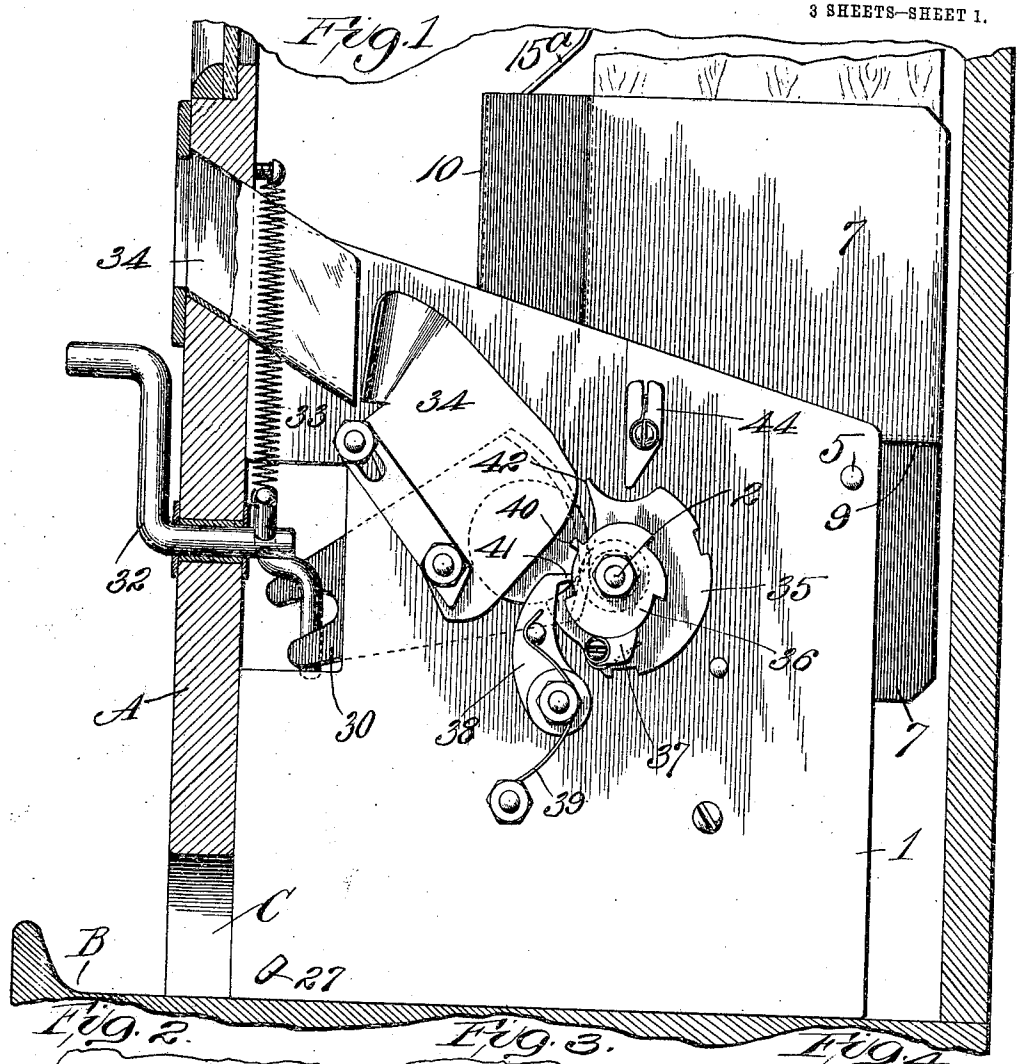


Fig. 2.

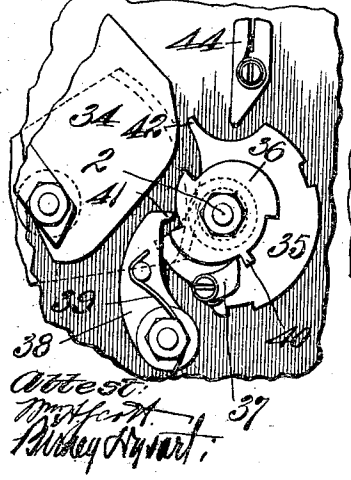


Fig. 3.

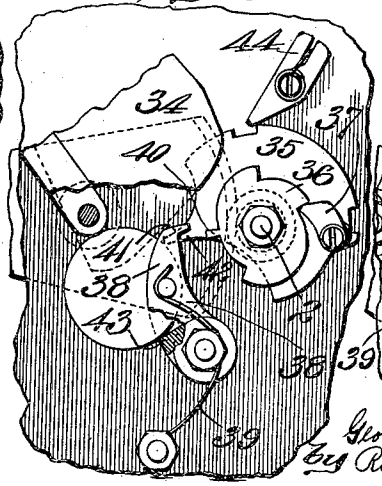
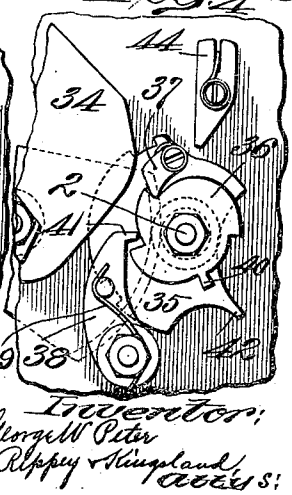


Fig. 4.



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3 SHEETS—SHEET 2.

Fig. 5.

Fig. 7.

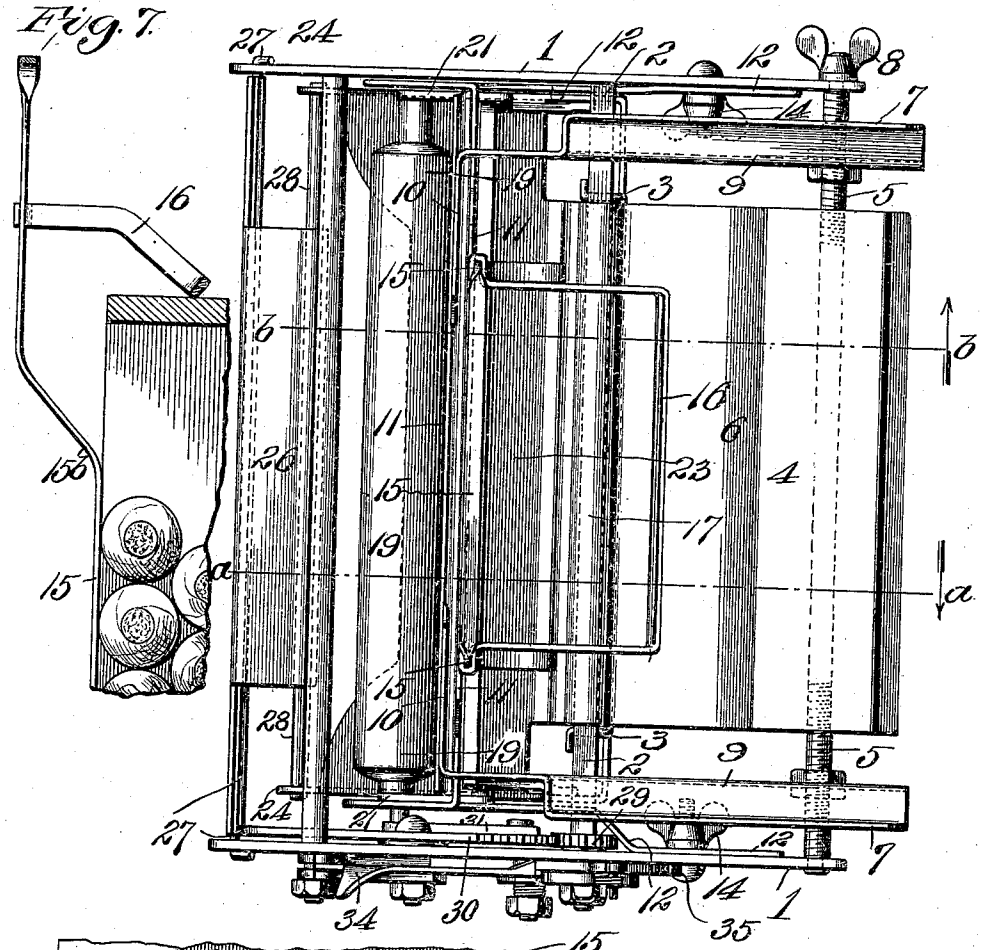
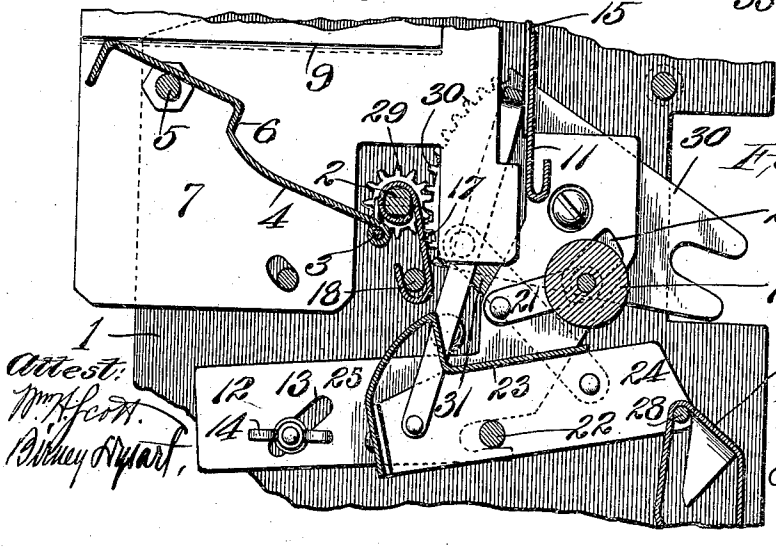


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 9

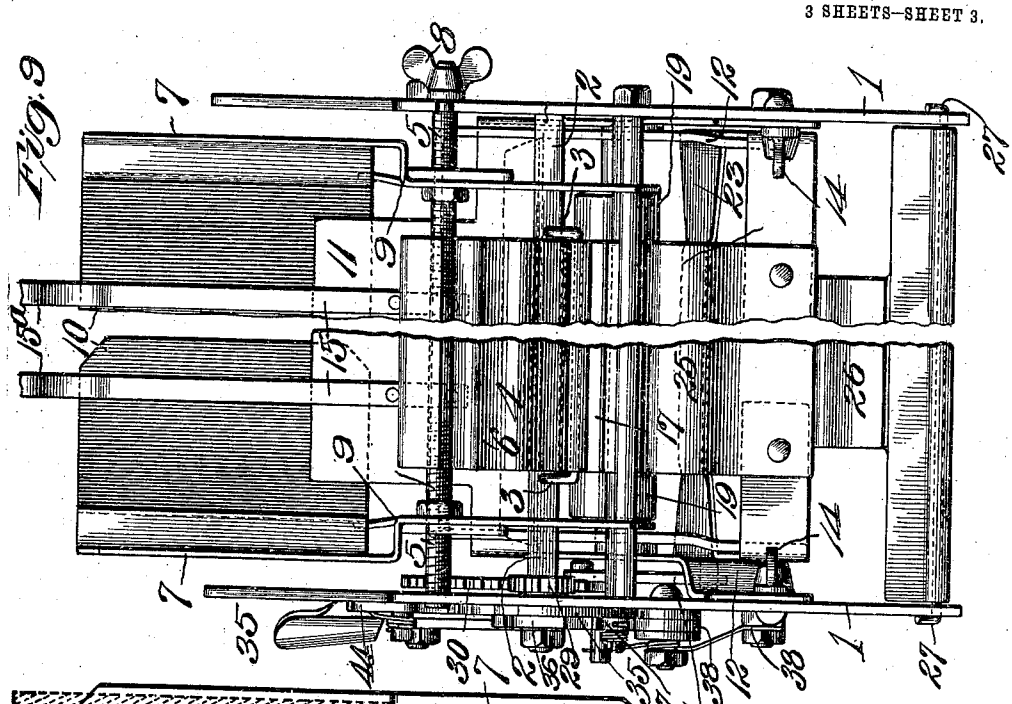
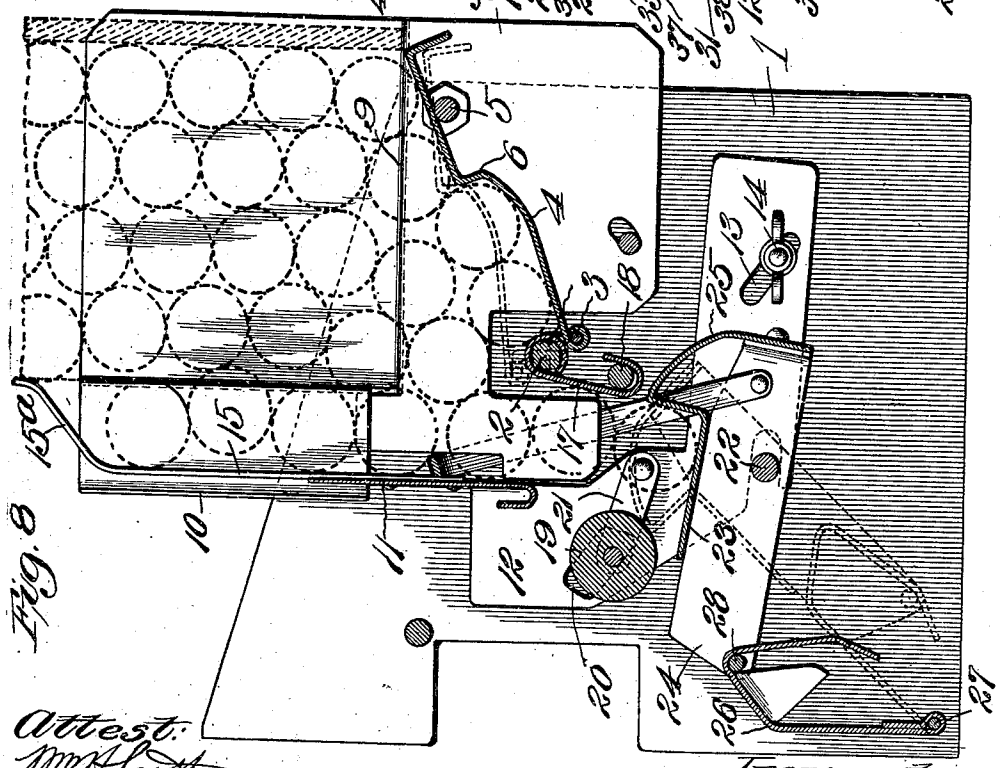


Fig. 8



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UNITED STATES PATENT OFFICE.

GEORGE W. PETER, OF ST. LOUIS, MISSOURI.

VENDING-MACHINE.

990,899. Specification of Letters Patent. Patented May 2, 1911.

Application filed February 9, 1910. Serial No. 542,967.

To all whom it may concern:

Be it known that I, GEORGE W. PETER, a citizen of the United States, residing at St. Louis, Missouri, have invented a new and useful Vending-Machine, of which the following is a specification.

This invention relates to vending machines, of that class comprising a hopper and a mechanically operable delivery mechanism, into which said hopper opens, and coin controlled mechanism controlling the operation of said delivery mechanism.

One object of the invention is to produce an improved vending machine of the type referred to, comprising a hopper composed of substantially vertical sides, and a substantially vertical front portion, in combination with a movable side between which and said front portion a passage is formed, and delivery mechanism arranged to receive the articles from said passage, and operable to deliver the articles so received outside of the machine.

Another object is to produce, in a machine of the character referred to, a device movable in more than one direction to agitate and advance the articles toward the delivery mechanism.

Another object is to embody in the hopper of the machine a side or bottom member, having one end pivotally supported, whereby said side or bottom may be moved both vertically and in direction of the delivery mechanism, whereby the articles supported by said side or bottom will be transported toward and forced into the delivery mechanism.

There are other objects and advantages to be attained by my present invention, which will appear from the following description, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional view of the case, containing my improved vending machine and illustrating the coin mechanism. Fig. 2 illustrates the normal or idle position of the coin mechanism. Fig. 3 illustrates the coin mechanism in operation, prior to completing the forward stroke of the delivery mechanism. Fig. 4 shows the adjustment of the coin mechanism at the completion of the forward stroke of the delivery mechanism. Fig. 5 is a plan view of the machine removed from the case. Fig. 6 is a sectional view on the line *a*—*a* of Fig. 5, looking in the direction indicated by the arrow. Fig. 7 is a detailed view of the retaining devices at the front side of the hopper. Fig. 8 is a sectional view on the line *b*—*b* of Fig. 5, looking toward the side of the machine indicated by the arrow. Fig. 9 is a broken rear view of the machine.

The operative mechanism or machine is contained within a case A, having a trough or receiving device B at its front side into which the articles are delivered or ejected through a passage C. The machine proper comprises a frame 1 composed of two substantially vertical sides. A shaft 2 is supported by the frame 1 and supports a bracket 3. A plate or strip 4 has its forward end pivoted upon the bracket 3 and extends obliquely upwardly and rearwardly therefrom, its rear side or edge resting upon a revoluble threaded rod or shaft 5. The plate 4, at a point rearwardly from the bracket 3, is bent as indicated at 6, to form an offset or shoulder. Said plate 4 constitutes one side or the bottom of the hopper and is operable to advance the articles toward the delivery mechanism. The side walls of the hopper comprise two substantially vertical plates 7, having a threaded engagement with the revoluble shaft 5. The threads on the shaft 5 at its opposite ends are oppositely arranged so that rotation of said shaft in one direction will move said plates 7 toward each other and rotation of said shaft in the opposite direction will move said plates farther apart, which may be readily understood by reference to Fig. 9.

A handle 8 is on one end of the shaft 5 and constitutes means for manual operation thereof. The plates 7 are formed preferably with shoulders or offsets 9 for supporting the vessel or receptacle from which the articles are delivered into the hopper and are adapted to support, for instance, a cigar box as indicated in Fig. 8. The front edges of the plates 7 are provided with inwardly extending portions 10. The front side or wall of the hopper comprises a substantially vertical plate 11, having at each end a portion 12 nearly parallel with the sides of the frame 1 and provided near their rear extremities with slots 13 extending obliquely

downwardly and rearwardly. Manually operable clamp devices 14 extend through said slots 13 and are adjustable effectively to hold the extensions 12 firmly in position, thereby properly supporting the plate 11. Between the lower edge of the plate 11 and the shaft 2 is a passage whereby the hopper communicates with the delivery mechanism. By releasing the binding devices 14, the plate 11 may be moved to different positions to vary the dimensions of the passage leading to the delivery mechanism, as may be required to accommodate cigars or other articles of different sizes.

A bail 15 has the lower ends of its arms secured to the plate 11, is deflected rearwardly as shown at 15^a (Fig. 8), and is deflected forwardly as shown at 15^b (Fig. 7). That part of the arms of the bail between these deflections constitutes an abutment to retain the articles such, for instance, as cigars, within the box or container. A bail 16 has its arms slidably clamped upon the arms of the bail 15, and is adjustable to engage with the top of the box or vessel, as shown in Fig. 7, to prevent oscillation or vibration of said box or vessel.

A plate 17 (Figs. 6 and 8) encircles the shaft 2, extends downwardly toward the delivery mechanism and embraces a rod 18. Said plate constitutes the rear wall of the passage or chute through which the articles pass to the delivery mechanism. The front of the passage or chute below the plate 11 is closed by a roller 19 the axis of which extends into oblique slots 20 in the side portions 12 of the front wall. The roller is retained in proper adjustment by two arms 21 pivotally connecting the axis of said roller with the said side portions 12. It is obvious that adjustment of the front wall 11 will also adjust the roller 19 coördinately therewith.

The delivery mechanism is operatively supported in position to receive the articles passing from the hopper through the passage or chute previously referred to. A shaft 22 is supported by the frame 1. A plate 23 of suitable shape to constitute a delivery device for the articles contained in the hopper, has vertical portions 24 pivotally mounted upon said shaft 22, said plate 23 has an arcuate portion 25. In idle position of the machine the plate 23 constitutes a support for the articles within the passage or chute as shown in Fig. 8. When operated to deliver articles, said plate assumes an oblique position as indicated by dotted lines in Fig. 8, and the arcuate portion 25 constitutes a closure for the lower end of the chute. In this way only such articles as are contained in or upon the delivery member 25 will be delivered, and upon return of the delivery device to idle position other articles will pass into or upon the delivery device. The passage C is normally closed by a plate 26 pivoted upon a rod 27 and operatively connected with the delivery device as shown at 28. When said delivery device is operated said plate 26 will be moved away from the outlet, to form a slide for guiding the delivered articles to the receptacle B.

The mechanism for operating the delivery mechanism is supported at one end of the machine. A pinion 29 (Fig. 6) is attached to the shaft 2 and is in mesh with a gear segment 30 pivotally supported by the frame of the machine. A link 31 connects the segment 30 with the delivery mechanism. In idle position the segment 30 is in its highest position and operation thereof will rotate the shaft 2, move the side 4 of the hopper upwardly and forwardly and will also actuate the delivery mechanism. A handle 32 (Fig. 1) is operatively connected with the front end of the segment 30 so that when said handle is properly manipulated the delivery mechanism will be operated to deliver articles from the machine. A strong spring 33 in connection with said handle is effective to return the parts to idle or normal position after each operation by the said handle.

As usual in machines of this type operation of the delivery mechanism is controlled by a coin inserted within a coin chute. Such a chute is shown at 34 (Fig. 1). A segmental plate 35 is attched to the end of the shaft 2 and a notched or toothed disk 36 is loosely mounted on said shaft 2. A pawl 37 carried by the plate 35 engages with the disk 36 so that when said shaft 2 is rotated forwardly the disk 36 will also be rotated. A pawl 38 is pivoted to the frame 1 and is actuated into contact with the periphery of the disk 36 by a spring 39. A tooth 40 on said disk 36 will engage against the hook 41 on the end of the pawl 38 and prevent further rotation of the shaft 2 until said pawl is disengaged therefrom as shown in Fig. 3. A coin of proper denomination when passed into the chute 34 will become seated within a concave portion of the plate 35 as shown in Fig. 1. After the coin has been positioned in this way operation of the handle 32 will cause a projection 42 on the plate 35 to push the coin downwardly upon a shoulder 43 on the pawl 38 and release said pawl from the disk 36 in the manner shown in Fig. 3. The delivery device 23 is operated at the same time and about the time that the article passes from the delivery device, the coin releases the pawl 38, the said pawl is then engaged again with the disk 36 by its spring 39 and the operative mechanism is returned to idle position by the spring 33. A device for requiring a full stroke of the mechanism at each operation is utilized in

connection with the plate 35. Said device comprises a spring-actuated pawl or arm 44 supported by the frame 1 and having its lower end arranged to ride upon the edge of said plate 35 when the shaft 2 is rotated. Notches are formed at intervals in the edge of said plate 35. At the end of each stroke or movement of the plate 35 the pawl or arm 34 becomes disengaged therefrom, in the manner shown in Figs. 1 and 4, permitting reverse operation and change of direction of movement of the mechanism before a full stroke is completed will be prevented by engagement of the member 44 with the plate 35.

The foregoing description is intended to be a brief description of one form of coin controlling mechanism. However I do not restrict myself to the employment of this or any other specific construction of coin controlling mechanism, for there are various species of such devices which may be employed in connection with my vending machine.

I do not restrict myself to specific features of construction in the vending machine, since it is obvious that there may be various alterations or modifications within the limits of equivalents, without departure from the spirit and scope of the invention. But

What I claim and desire to secure by Letters Patent of the United States is:

1. In a vending machine, a hopper, a roller and a plate forming a chute leading from said hopper, a device for advancing articles from said hopper to said chute, a handle, connections from said handle to said device, an oscillating plate constituting a delivery device closing the outlet of said chute, connections from said first-named connections to said delivery device, and a door plate operable by said delivery device.

2. In a vending machine, a hopper, a roller and a plate forming a chute leading from said hopper, pivoted links holding said roller, a delivery device below said roller and plate closing one end of said chute, a door plate pivotally connected with said delivery device, a handle, and link connections whereby said handle will operate said delivery device and thereby operate said door plate.

3. In a vending machine, a hopper, a rear wall and an adjustable front wall forming a chute leading from said hopper, means for holding said front wall in different adjustments effectively to increase or reduce or increase the dimensions of said chute, a plate for feeding articles from said hopper to said chute, an oscillating delivery plate arranged to receive articles from said chute, a case inclosing all of said parts mentioned, said case having an outlet passage, a door plate connected with said delivery plate and closing said outlet passage, and a handle for operating said first-named plate, said delivery plate and thereby said door plate, substantially as specified.

4. In a vending machine, a shaft, a pinion on said shaft, a gear element meshing with said pinion, a plate pivotally connected with said shaft, a delivery device below said shaft, a chute leading to said delivery device, means for changing the dimensions of said chute, a link connecting said gear element with said delivery device, a handle connected with said gear element whereby said element may be caused to rotate said shaft effectively to cause said plate to feed articles into said chute, and also to operate said delivery device, and a spring connected with said handle for returning the handle and the parts operated thereby to idle position, substantially as specified.

5. In a vending machine, a shaft, a plate pivotally connected with said shaft, a handle, gear devices entraining said handle with said shaft, a delivery device, a connection between said gear devices and said delivery devices, a case having an outlet passage from said delivery device, a door plate for closing said passage, and connections between said door plate and said delivery device, substantially as specified.

6. In a vending machine, a shaft, a plate pivotally connected with said shaft, gear devices entrained with said shaft, a delivery device, a link connecting said delivery device with said gear devices, a case inclosing all of said parts named, and having an outlet passage from said delivery device, a closure for said passage, a connection whereby said delivery device will operate said door plate, and a handle controlling said gear devices, substantially as specified.

7. In a vending machine, a shaft, a plate pivotally connected with said shaft, gear devices entrained with said shaft, a delivery device, a link connecting said delivery device with said gear devices, a case inclosing all of said parts named, and having an outlet passage from said delivery device, a closure for said passage, a connection whereby said delivery device will operate said door plate, a handle controlling said gear devices, and a lock device controlling said handle, substantially as specified.

8. In a vending machine, a hopper, an ejector in said hopper, gear devices entrained with said ejector, a delivery device, a rear wall and an adjustable front wall forming a chute from said ejector to said delivery device, means for holding said front wall in different adjustments effectively to increase or reduce the dimensions of said chute, a link connecting said gear devices and said delivery device, an outlet passage from said

delivery device, a door plate closing said passage, a connection between said delivery device and said door plate, a handle for actuating said gear devices, and a spring for returning said handle to idle position after operation.

In testimony whereof I have hereunto affixed my signature this 19th day of January, 1910, in the presence of two witnesses.

GEORGE W. PETER.

Witnesses:
J. D. RIPPEY,
FRANKLIN MILLER.