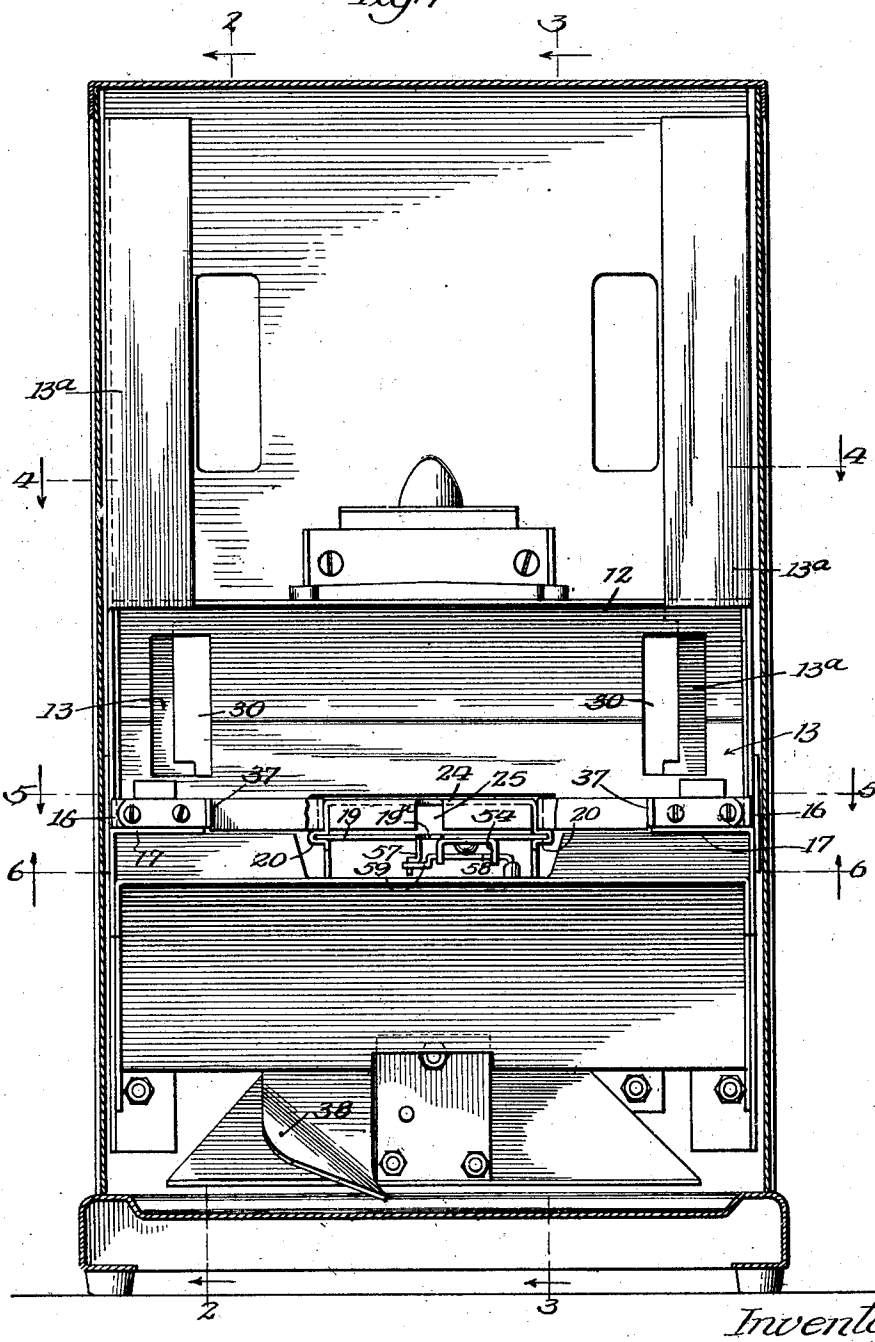
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VENDING MACHINE

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Fig. 1



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VENDING MACHINE

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Fig 2

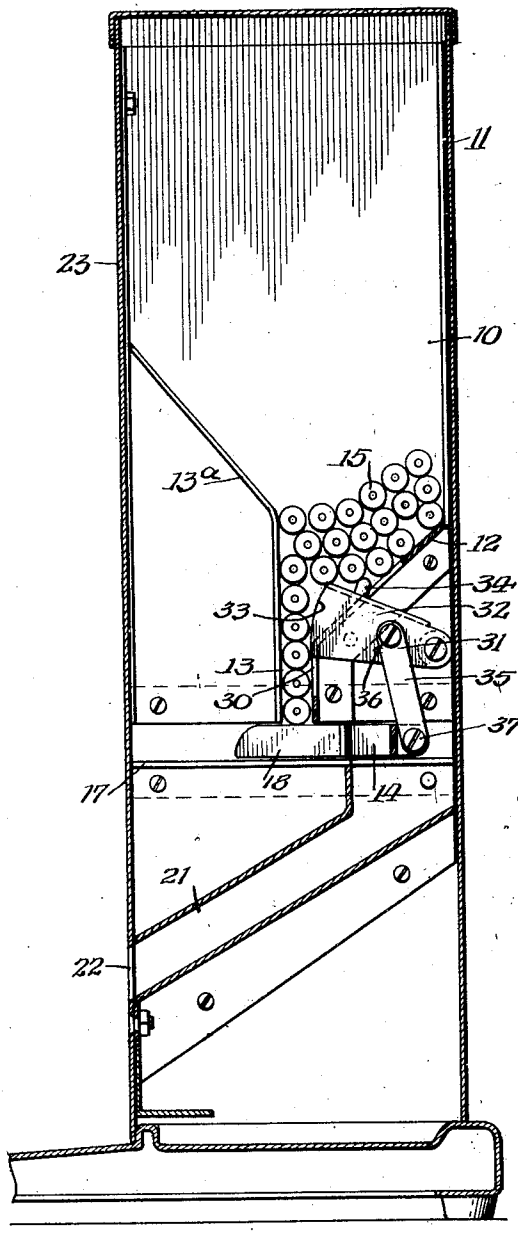
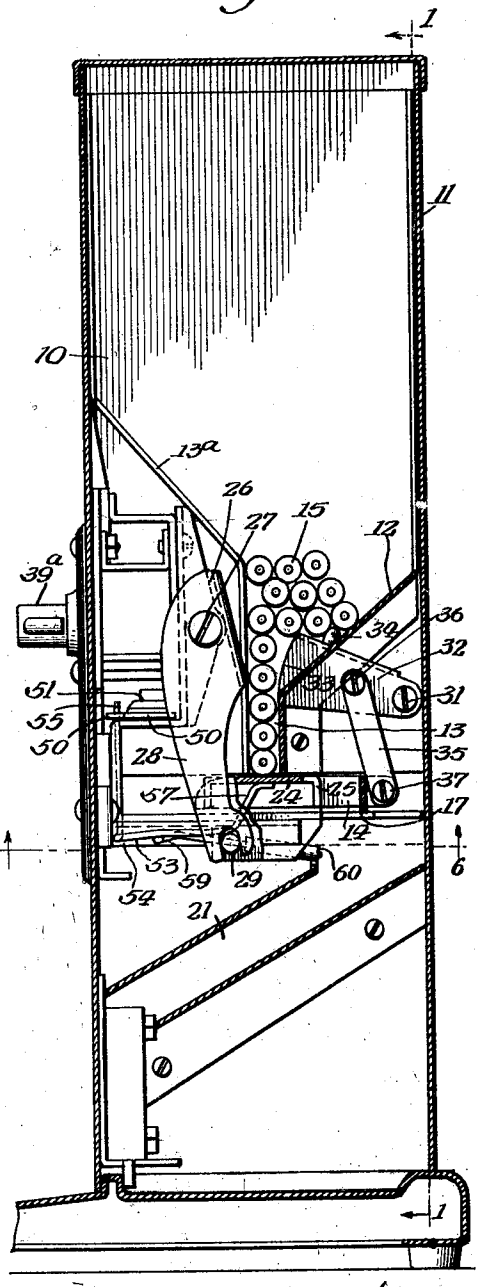


Fig. 3



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VENDING MACHINE

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Fig. 4

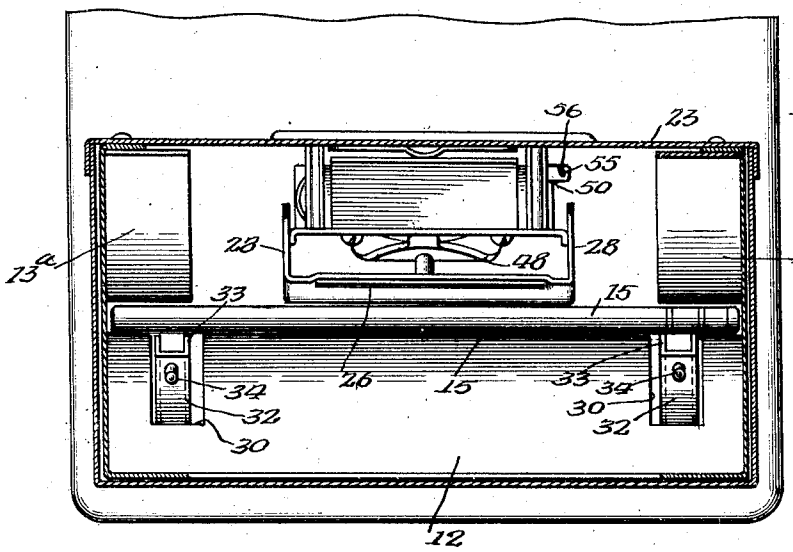
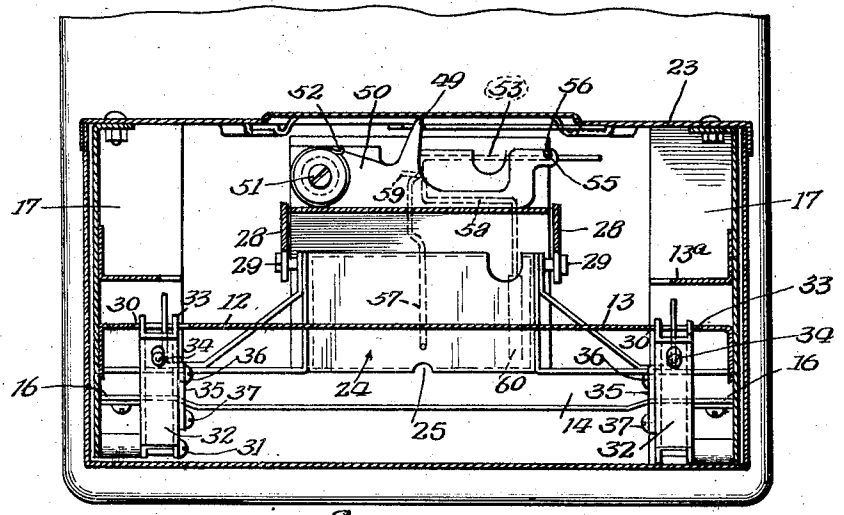


Fig. 5



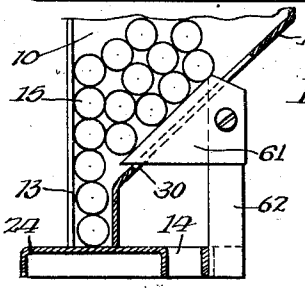


Fig. 9

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VENDING MACHINE

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Fig. 6

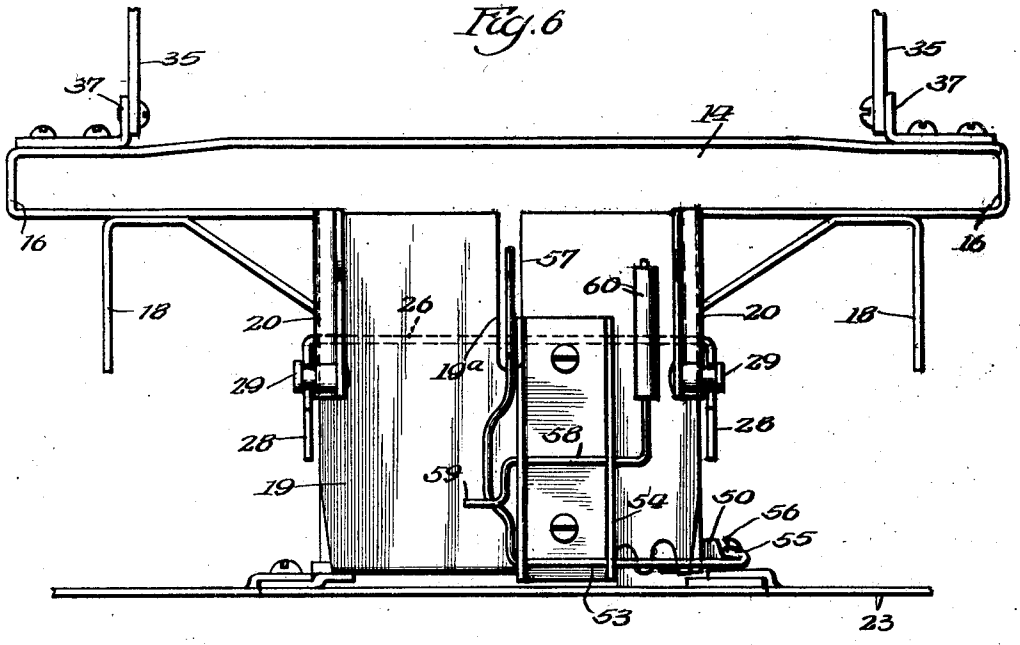


Fig. 7

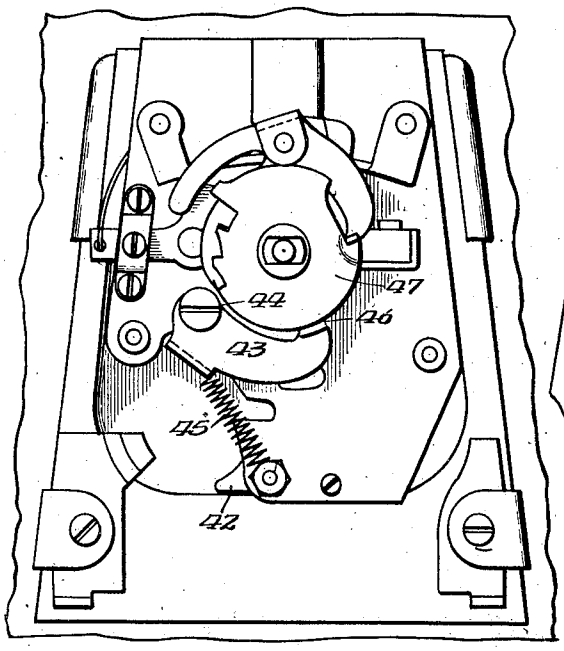
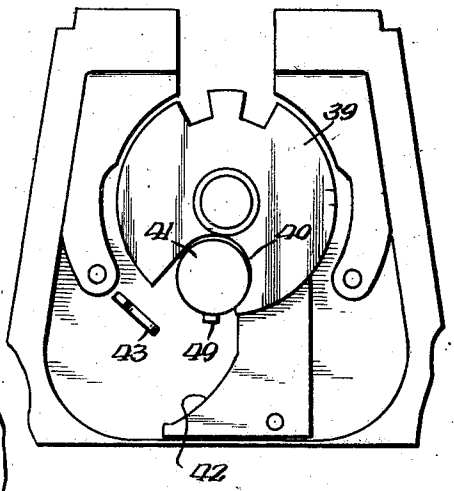


Fig. 8



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1,767,112

UNITED STATES PATENT OFFICE

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VENDING MACHINE

Application filed June 20, 1927. Serial No. 199,944.

This invention relates to improvements in vending machines, particularly adapted, though not necessarily limited in its use for vending long articles such as pencils and the like, and one of the objects of the invention is to provide a machine of this character having improved means for agitating the articles to prevent them from becoming jammed in the container and to cause them to be regularly and properly positioned or arranged in a delivery chute for delivery when a proper check is deposited in the machine, and in which machine the articles will be constantly maintained in a horizontal position.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention, and in which

Figure 1 is a rear elevation of the machine as taken on line 1—1, Figure 3, with parts removed and parts broken away.

Figure 2 is a vertical, longitudinal, sectional view through the machine and as taken on line 2—2, Figure 1.

Figure 3 is a vertical, sectional view taken on line 3—3, Figure 1, with parts omitted and parts broken away.

Figure 4 is a detail, horizontal sectional view taken on line 4—4, Figure 1.

Figure 5 is a horizontal, sectional view taken on line 5—5, Figure 1.

Figure 6 is a view taken on line 6—6, Figure 1, looking in the direction of the arrows and with parts omitted.

Figure 7 is a rear elevation of a portion of the check controlled mechanism.

Figure 8 is a detail elevation of a portion of the check controlled mechanism with parts omitted and showing the check carrier.

Figure 9 is a detail view partly in elevation and partly in section of a modified form of agitator.

Referring more particularly to the drawings the numeral 10 designates generally a container which is arranged within a suitable casing having a removable back 11.

The container is preferably located at the top of the casing and is provided with an inclined bottom 12 which terminates in a delivery chute 13, the latter being preferably arranged uprightly, and the chute 13 terminates within the machine.

Arranged to reciprocate beneath the bottom of the chute is an ejector which is provided with an open chamber 14 adapted to be brought into register with the end of the chute 13 to receive the articles 15 from the container.

The ends 16 of the ejector engage and reciprocate upon guides or supports 17 and projecting forwardly from the ejector are members 18 which also move upon the guides 17. These members 18 are also reciprocable beneath the bottom of the chute 13 and serve as a means for assisting in supporting the articles in the container when the ejector is moved rearwardly so as to deliver the article from the container.

Projecting beneath the ejector is a member 19 which is preferably disposed centrally of the ejector and is supported in any suitable manner. The ejector is provided with guides 20 (see particularly Figure 1) which receive the edges of the member 19, and this member 19 serves as a closure for a portion of the bottom of the chamber 14 to prevent the article from dropping through the chamber while the ejector is being moved to position the chamber 14 over a delivery chute 21, which latter has communication with an opening 22 through the front 23 of the casing.

Carried by the ejector is a shield 24 having an opening 25 in the rear thereof which has communication with the chamber 14 (see Figures 1 and 3), for a purpose to be hereinafter set forth.

The ejector is adapted to be reciprocated upon the guides 17 by means of a member 26 which is pivotally mounted intermediate its ends as at 27 to be rocked back and forth in a manner to be described. The member 26 is provided with spaced arms 28 which extend over the sides of the shield 24 to engage lugs

or pins 29 carried by the ejector whereby when the member 26 is rocked about its pivot the ejector will be correspondingly reciprocated.

The container 10 is provided in the bottom 12 thereof with openings 30 preferably arranged adjacent the extremities of the container and pivotally mounted by one end as at 13 upon a suitable support adjacent each of the openings 30 is an agitator member 32 that is of a size and shape to be projected into the container 10 through the opening 30 and to be withdrawn therefrom. The forward edge 33 of the agitator co-operates with one of the walls of the chute 13 to direct the articles 15 into the chute and a lug 34 may be provided on the agitator to project above the top thereof, and which lug is adapted to enter between the articles 15 to agitate or separate them.

As the ejector is reciprocated the agitator member 32 is moved about its pivot 31, and to that end there is provided a link 35 which is pivotally connected by one end as at 36 to the member 32 and is pivotally connected by its other end as at 37 to the ejector so that the ejector when it is moved forwardly and backwardly will move in a horizontal plane and through the medium of the link connection 35 the agitator member 32 will be moved about its pivot and forced into the container and then withdrawn therefrom.

The link 35 is of such a length and is connected with the ejector and agitator member 32 in such a manner that the agitator member will be given an up and down movement in each direction of movement of the ejector. That is, when the ejector is moved forwardly the agitator member will be raised and lowered and when the ejector is moved rearwardly the agitator member will also be given an up and down movement about its pivot, thereby effectively agitating the contents of the container.

This agitator member will insure the articles being properly positioned in the chute and will prevent them from becoming jammed in the container.

When the articles are delivered from the chute 13 they will drop into the chamber 14, the latter being closed by the member 19 and when the ejector is moved to the position shown in Figures 2 and 3, so that the chamber 14 will allow the article to drop into the chute 21 the shield 24 will serve as a closure to the bottom of the chute 13 and thereby support the articles during a portion of the movement of the ejector to a delivering position. The arms or members 18 will also serve to support the articles in the chute 13.

When the articles are delivered through the chute 21 they will engage a deflector 38 (see particularly Figure 1), which is arranged across the outlet opening of the casing and this deflector 38 operates to twist an article lengthwise so that one end thereof will be projected through the delivery opening in advance of the other end.

Any suitable means may be provided for reciprocating the ejector but there is preferably shown a check controlled mechanism which latter may be of any desired configuration and construction, but coin controlled mechanism suitable for this purpose is disclosed in United States patent to Alfred D. Antoine, No. 1,452,721, issued April 24, 1923, and which check controlled mechanism embodies a carrier 39 having a check seat 40 therein. The check carrier is adapted to be actuated by means of a suitable handle 39a located on the outside of the case and the carrier 39 is adapted to be rotated when a proper check is inserted in the mechanism until the carrier has assumed the position shown in Figure 8, at which time and under normal conditions the check 41 is adapted to be delivered from the check carrier upon a support 42.

When the check rests upon the support 42 it engages a locking or retaining element 43 of the check controlled mechanism so that when the check carrier 39 is reversed in its direction of rotation a portion of the wall of the check seat will engage the edge of the check 41 to force the check from the support 42 against the element 43 to swing the latter about its pivot 44 against the stress of a spring 45, thereby moving the portion 46 of the element 43 into a position that it will be rendered inactive with respect to the ratchet disc 47 to release the latter and thereby permit of the further operation of the check carrier 39 and with it a cam 48. The cam 48 is connected with the disc 47 in any suitable manner so that when the disc 47 is rotated the cam will be rotated. This operation of the check controlled mechanism constitutes no part of the present invention, as it is fully disclosed in the patent heretofore referred to.

Suffice it to say that when the cam 48 is rotated the member 26 will be oscillated about its pivot 27 and thereby impart to the ejector a reciprocating movement.

Arranged adjacent the path of movement of the check 41 in the check carrier 39 (see particularly Figures 5 and 8) is a projection 49 which is carried by a member 50, the latter being pivotally mounted at one end as at 51, and a spring 52 tends normally to hold the projection 49 in a position that when the check carrier 39 is rotated to invert the check seat 40 to discharge the check 41 therefrom, the projection 49 will retain the check in the seat 40 and prevent it from being discharged.

The shifting of the member 50 to retract the projection 49 is controlled by the supply of articles 15 in the container 10 so that when the container is empty the check inserted in

the check carrier will be returned to the operator.

To that end there is provided a member 53 journaled in a suitable bearing 54. One end of the member 53 is bent upwardly as at 55, and the extremity of the upwardly bent portion engages in a notch or seat 56 in the free extremity of the member 50.

A portion of the other end of the member 53 is bent upwardly as at 57 so that the extremity thereof will pass through an opening 19[a] in the member 19 and project beneath the shield 24 and in alinement with the end of the chute 13.

Another member 58 is pivotally mounted in the bearing 54 and one end 59 of the member 58 passes beneath the end 57 of the member 53 and is shaped to form a crank, as shown more clearly in Figure 6.

To the other end of the member 58 is connected a weight 60.

The normal tendency of the weight 60 is to rock the crank 59 so as to raise the extremity 57 of the member 53 to a position that when the shield 24 is shifted the extremity of the end 57 of the member 53 will pass through the opening 25 in the shield 24 and will be exposed to the articles 15 in the chute 13. The weight of the articles upon the end 57 of the member 53 will rock the member 53 against the stress of the weight 60, this will also shift the member 50 against the stress of the spring 52 to withdraw the projection 49 so that when the check carrier 39 is then rotated with the check 41 in the seat 40, the check 41 will, when the seat 40 is inverted drop out of the seat on to the support 42.

Should there be no articles in the container 10 or chute 13 the end 57 of the member 53 will be held in its elevated position by means of the weight 60 on the member 58, and the check 41 will then be held against displacement from the seat 40 of the check carrier 39, with the result that when the check carrier 39 is rotated backwardly the check will be returned to the operator.

The extremity 57 of the member 53 when it passes through the opening 25 in the shield 24 will extend across the chamber 14, so that when the article drops into the chamber 14 the end 57 of the member 53 will be depressed. It is of course to be understood that the weight 60 is such that it will not interfere with the rocking of the member 53 by one of the articles passing into the chamber 14 from the chute 13.

In the form of the invention shown in Figure 9, the agitator 61 is rigidly supported by the ejector by means of the upright 62 and the agitator is adapted to be moved into the container 10 through the opening 30 in the inclined bottom 12, and the surface 63 engages the articles 15 above the chute 33 so as to agitate and separate them while the surface 63 will co-operate with one of the walls of the chute 13 to direct the articles into the chute.

In both forms of the invention one of the agitators is provided adjacent each extremity of the container.

The walls of the container and of the chute 13 opposite to the inclined bottom 12 are preferably formed by members 13[a] arranged adjacent the ends of the container and chute and the members 13[a] are preferably of a width substantially equal to the width of the guides 17.

While the preferred forms of the invention have been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A vending machine embodying a container for the articles, a delivery chute, a reciprocable ejector for ejecting the articles, an agitator pivotally mounted by one end, the free end of the agitator being movable into and out of the container, an operative connection between the ejector and agitator for rocking the latter as the ejector is reciprocated, and a projection extending above the agitator for assisting in separating the articles in the container.

2. A vending machine embodying an elongated container for the articles, a delivery chute for receiving the articles in a horizontal position, a reciprocable ejector, agitators pivotally mounted by one end at the ends of the container, an operative connection between the agitators and ejector for rocking the agitators as the ejector is reciprocated, and a projection extending above the top of each of the agitators for assisting in separating the articles in the container.

In testimony whereof we have signed our names to this specification, on this 16th day of June, A. D. 1927.

ALFRED D. ANTOINE.
ALBERT E. GEBERT.