March 28, 1933. M. H. RICHARDSON ET AL 1,903,067

VENDING MACHINE

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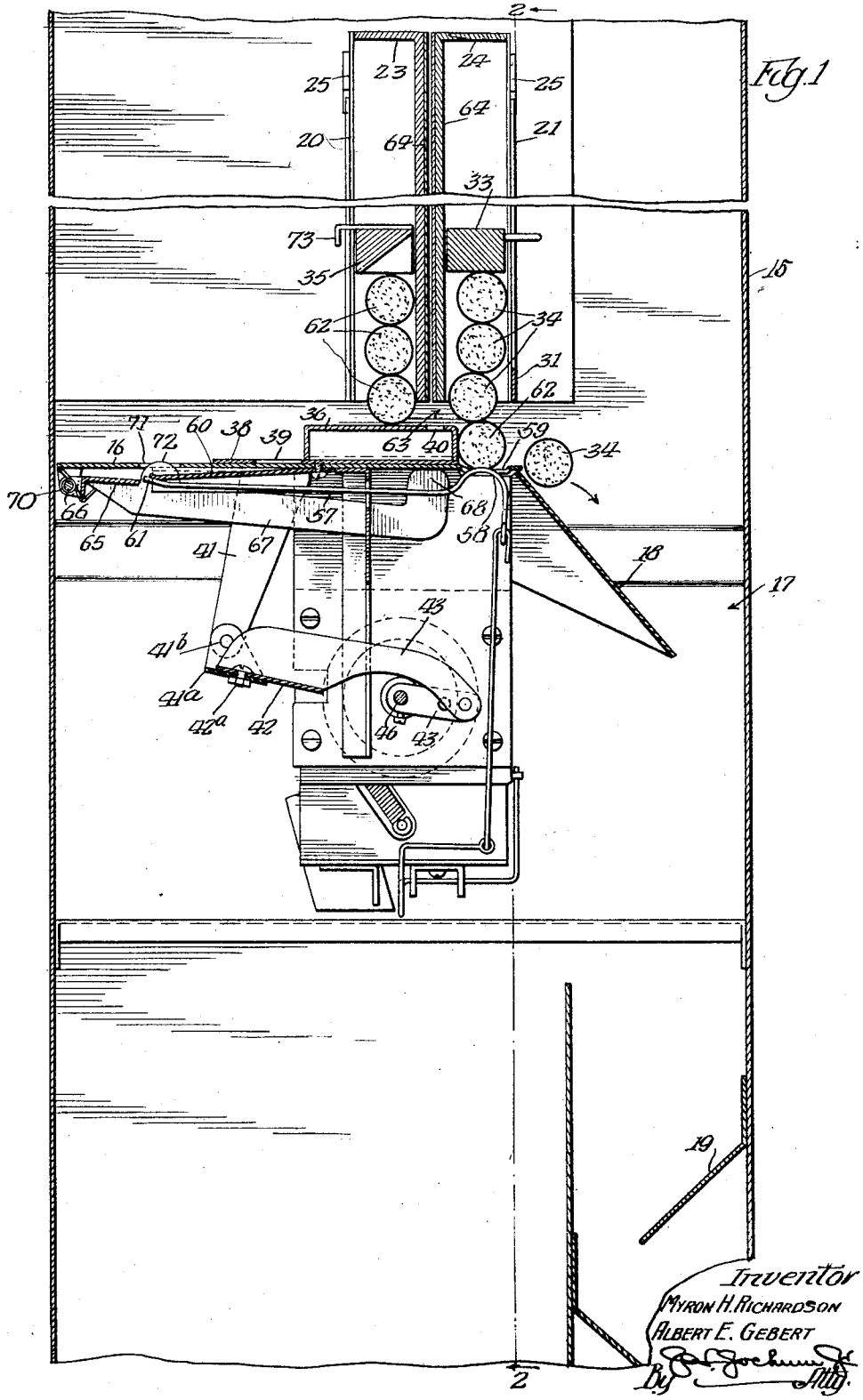


Fig. 1

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VENDING MACHINE

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Fig. 3

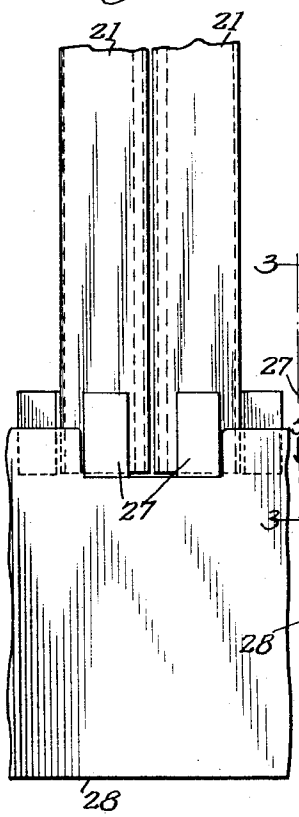


Fig. 2

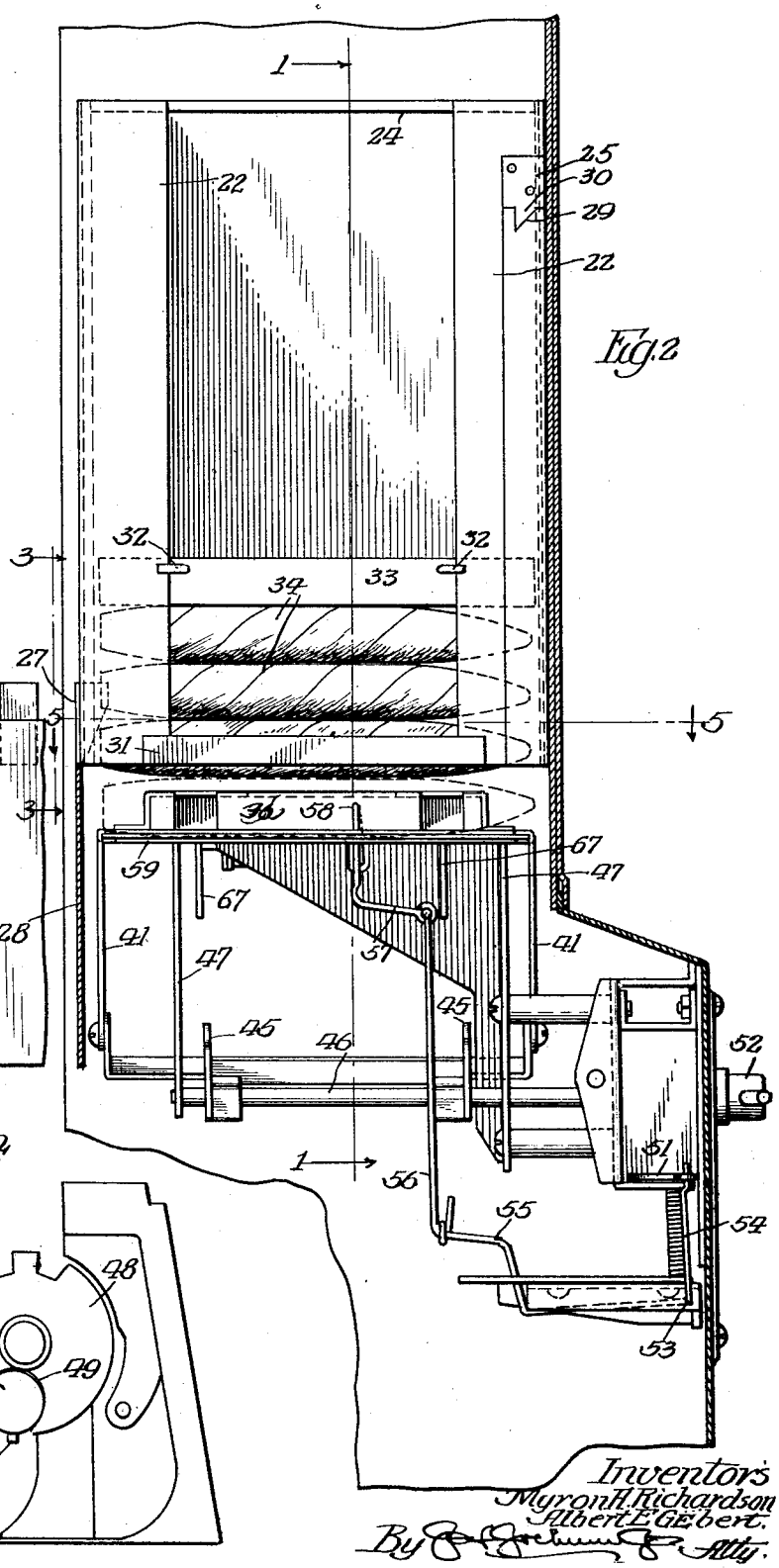


Fig. 4

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Fig. 5

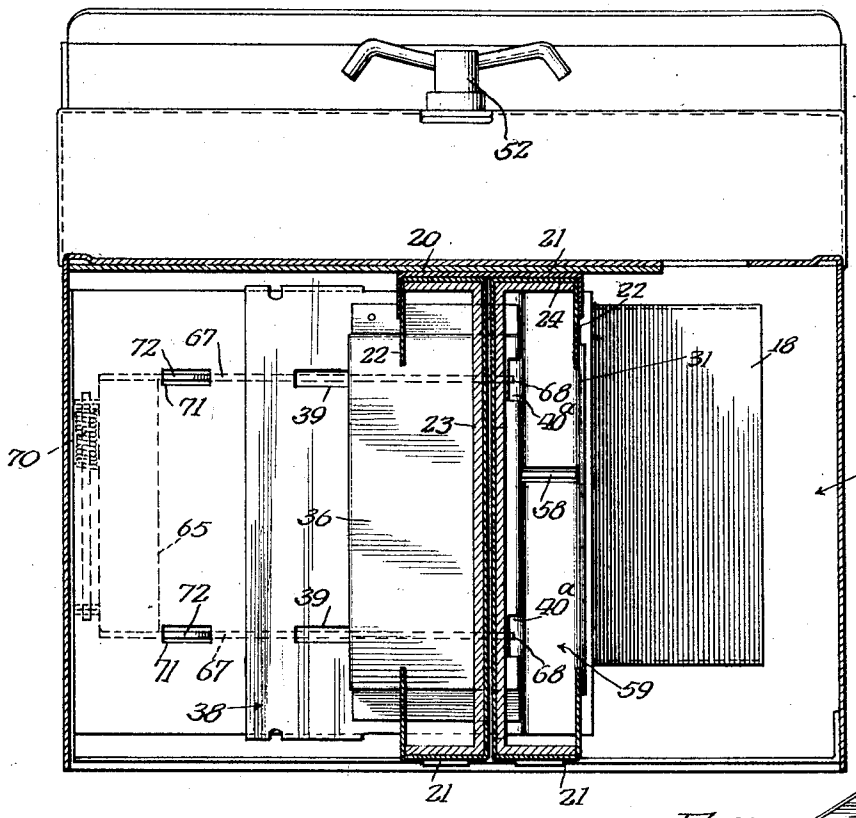


Fig. 6

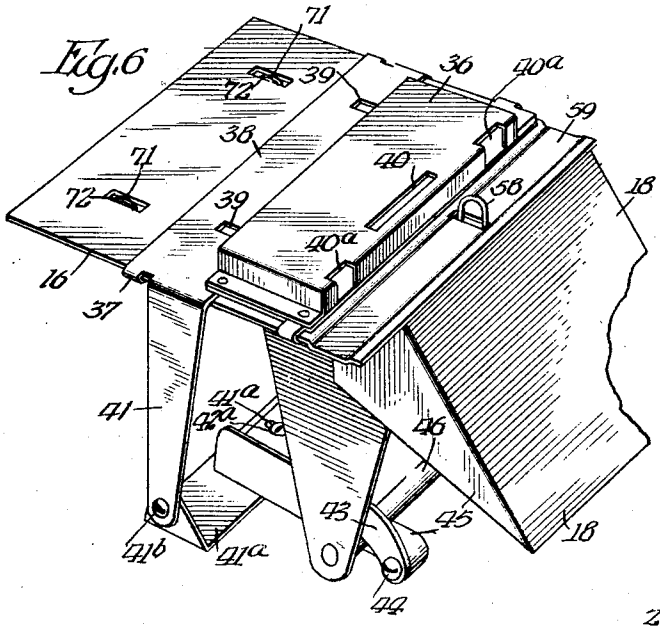
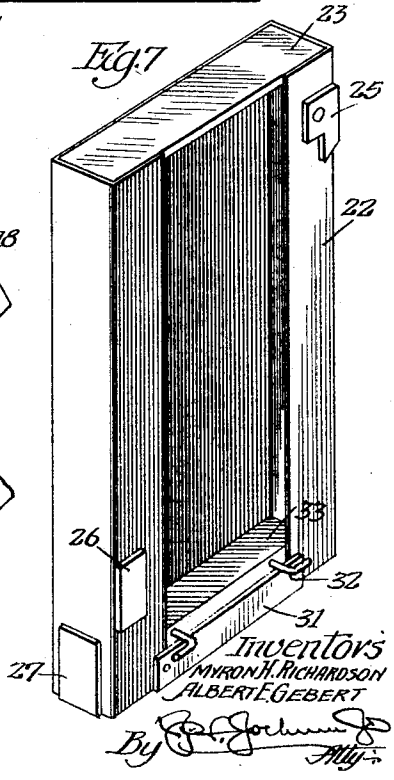


Fig. 7



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VENDING MACHINE

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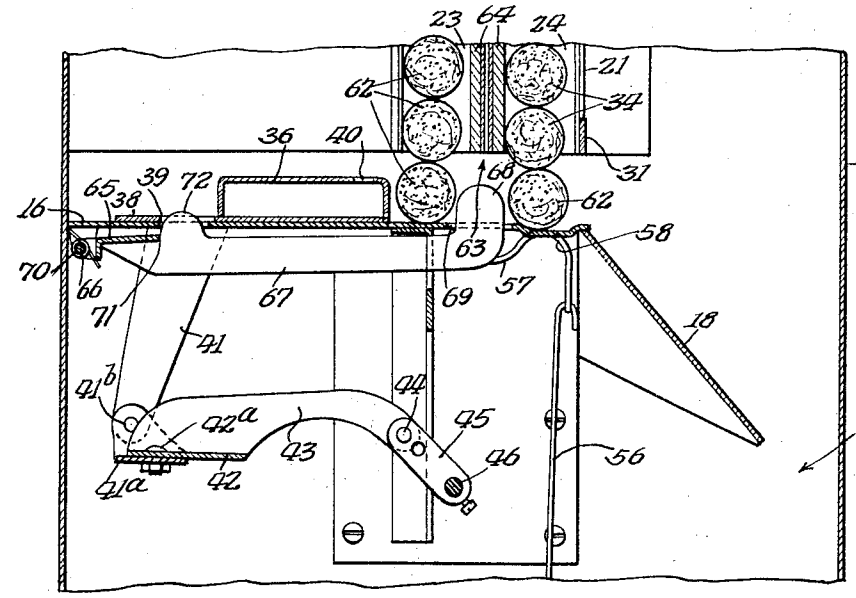


Fig.8

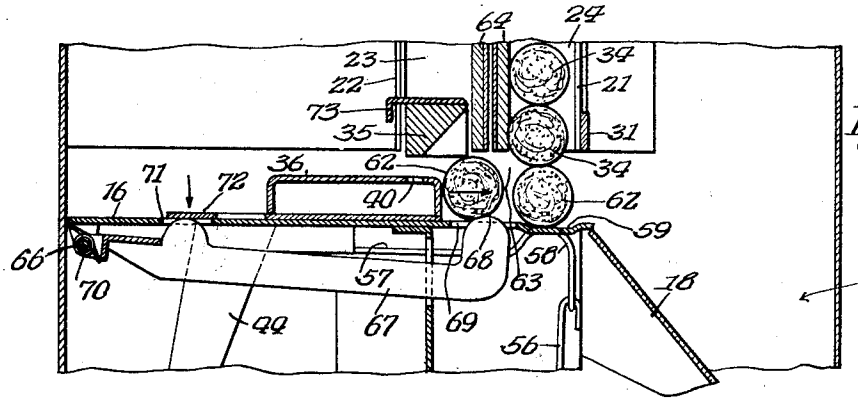


Fig.9

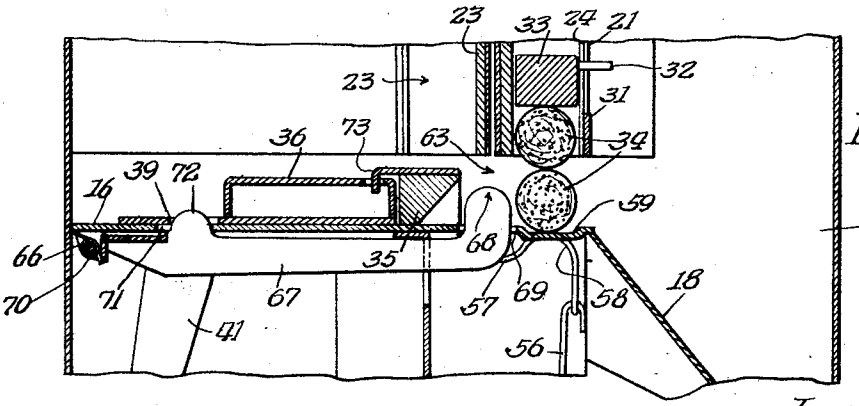


Fig.10

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Patented Mar. 28, 1933 1,903,067

UNITED STATES PATENT OFFICE

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VENDING MACHINE

Application filed June 29, 1929. Serial No. 374,873.

This invention relates to improvements in vending machines particularly adapted, though not necessarily limited in its use, to machines of the check controlled type, and one of the objects of the invention is to provide an improved machine of this character by means of which the articles may be vended from their original container, the machine being adapted to receive the goods in their original package or container and then separately dispense them upon the successive operations of the machine.

A further object is to provide improved means for holding a plurality of containers in proximity to each other from which the articles may be delivered to exhaust the supply in one container before they are dispensed from the other container, and improved means whereby the subsequently dispensed articles from one container will serve as a portion of the ejecting means for ejecting a previously delivered article from the same container.

A further object is to provide improved means for maintaining the articles that are in position to be delivered, separated from each other, so that they will not jam the machine and so that only one, or a predetermined number of articles, according to the condition for which the machine is set, may be delivered upon each operation of the ejecting means.

To the attainment of these ends and the accomplishment of other news 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 vertical sectional view partly in elevation, partly in section, partly broken away and with parts omitted, and as taken on line 1—1, Figure 2, of a machine of this character constructed in accordance with the principles of this invention and showing the ejecting means in one position.

Figure 2 is a sectional view taken on line 2—2, Figure 1.

Figure 3 is a detail view partly in elevation and partly broken away and as taken on line 3—3, Figure 2.

Figure 4 is a detail view of a portion of the check controlled mechanism.

Figure 5 is a horizontal sectional view taken on line 5—5, Figure 2.

Figure 6 is a detail perspective view, partly broken away of a portion of the mechanism showing the ejector.

Figure 7 is a perspective view of one of the holders into which a container holding the articles to be dispensed is placed, and which holder is then placed in the machine.

Figure 8 is a view similar to Figure 1 with parts omitted, showing the ejecting mechanism in one position.

Figure 9 is a view similar to Figure 8 showing the ejecting mechanism in another position.

Figure 10 is a view similar to Figure 8, showing the parts in still another position.

Referring more particularly to the drawings the numeral 15 designates a suitable housing or casing which may be of any desired size and configuration, and secured therein intermediate the top and bottom thereof to extend partially thereacross, is a support or platform 16 which terminates short of one wall of the casing to provide a chute 17 through which the articles are delivered to the operator through an opening in the front of the machine.

A baffle 18 may also be provided which is connected with the platform 16 and extends into the chute 17 to terminate in proximity to one wall thereof and another baffle 19 arranged in staggered relation to the baffle 18 may also be provided so as to prevent the insertion of an implement into the machine through the chute 17 and thereby the unlawful removal of the articles from the machine.

Arranged within the casing and above the platform or support 16 are suitable guides 20—21 which terminate short of the platform 16. Frames 22 are also provided and into each one of which frames an original container 23—24 is placed. One end, the lower end of each of the original containers is re-

moved before the same is placed in the respective frames 22.

The frames 22 may each be provided with shoulders 25, 26 and 27 for holding the frames in position. The shoulder 25 preferably engages over the tops of the guides 20—21 while the shoulders 27 engage and rest upon the top of a partition 28. If desired the upper edge of the guide 22 may be recessed as at 29 to receive a portion 30 of the shoulder 25.

Extending across the bottom of one of the frames 22 is a member 31 which acts as a stop to be engaged by pins or projections 32 on a weight 33 that is movable in the container 24 and which weight rests upon the articles 34, as shown more clearly in Figure 7, to prevent the weight 33 from falling down into the path of movement of the ejector after the articles have all been dispensed from the container 24.

The bottom of the other frame 22 is open so that a weight or follower 35 which is movable in the container 23 will pass through the bottom of the container, for a purpose to be hereinafter set forth.

An ejector 36 is slidably mounted upon the platform 16 and may be connected therewith in any suitable manner preferably by flanging portions 37 of the ejector over the edges of the platform 16.

The ejector is provided with a portion 38 having openings 39 therethrough and the front edge of the ejector is preferably provided with a recess 40, for a purpose to be set forth.

Depending from the ejector are arms 41 which are connected by a member 42 and connected with the member 42 are arms 43, which latter are connected by means of connecting devices 44 with arms 45 on an oscillatable shaft 46 and which shaft is journaled in suitable bearings 47 so that when the shaft is oscillated the ejector 36 will be moved backwardly and forwardly upon the platform or support 16.

Any suitable means may be provided for oscillating the ejector, but preferably check controlled mechanism of the type and construction as disclosed in United States patent to Alfred D. Antoine, No. 1452721, issued April 24, 1923, and which check controlled mechanism embodies a check carrier 48 having a check seat 49 to receive the check 50, and a member 51 that is adapted to be withdrawn so as to permit the check 50 to drop out of the seat 49 when the element 48 is turned by means of the handle 52 to the position shown in Figure 4. This member 51 is shifted by means of a rock shaft 53 having a portion 54 connected with the member 51 and having another portion 55 connected with a link 56, which in turn is connected with a member 57, a portion 58 of which member projects above a seat or depression 59 formed in the platform or support 16. The seat or depression 59 prevents the article from rolling from the platform and also prevents the article from being shaken from the platform in the event the machine is tilted. When the article is resting in the seat 59, the portion 58 of the member 57 will be depressed and the member 51 will be withdrawn to permit the check to drop from the seat 49 to operate the mechanism and thereby reciprocate the ejector 36.

When, however, no article is resting in the seat 59, the member 58 will not be depressed and the member 59 will not be withdrawn therefrom and the check will be returned to the operator and the ejector will not be reciprocated, all as described in the aforesaid patent.

A spring 60 is preferably provided which bears upon a portion 61 of the member 57 and tends normally to hold the portion 58 of the member 57 projected above the bottom of the seat 59.

One end of the containers is removed and the container is placed within the respective frames 22 and the frames are in turn placed within the guides or holders 21 with the open portions of the containers lowermost so that when the containers are in position the articles 34 in the container 24 and the articles 62 in the container 23 will rest upon the platform or support 16, one of the articles engaging and depressing the portion 58 of the member 57.

In this position and assuming the parts to be in the position shown in Figure 8, it will be seen that there is a space 63 between the containers 23 and 24 formed by the bottoms 64 of the containers and which space if allowed to remain, would receive one of the articles from one of the containers each time the ejector 36 is retracted, with the result that the machine would become jammed or more than the predetermined number of articles would be delivered upon the next forward movement of the ejector.

In order therefore to insure the proper positioning of the articles to be delivered from the machine and to prevent jamming as well as prevent the delivery of more than the predetermined number of articles, there is provided a member 65 which is pivotally supported as at 66 and is provided with spaced arms 67, the end of the arms being bent upwardly as at 68 to form fingers adapted to project through openings 69 in the platform or support 16. A spring 70 may be provided which tends normally to raise the fingers 68 above the platform 16 into the space 68 beneath the bottom 64 of the containers and between the two articles which are resting upon the support or platform 16.

The arms 67 are also provided with projections 72 adapted to pass through openings 71 in the platform or support 16 at the same

time that the fingers 68 are projected above the platform and these projections 72 will also extend through the openings 39 in the ejector 38 when the openings are in register with the openings 71 and in a position over the projections 72. This will happen when the ejector 36 reaches the limit of its rearward movement as shown more clearly in Figure 8 of the drawings.

When the ejector 36 is moved forwardly from the position shown in Figure 8 to the position shown in Figure 9, the portion 38 of the ejector will pass over the projections 72 on the arms 67 to depress the arms 67 and with them the fingers 68 against the stress of the spring 70 so that the fingers 68 will be moved out of the path of advancing movement of the article 62 from the container 23 by the ejector 36, as will be seen in Figure 1 of the drawings.

Upon the return movement of the ejector 36, that is the movement of the ejector 36 from the position shown in Figure 1 back to the position shown in Figure 8, the fingers 68 will be held depressed so as not to interfere with the movement of the ejector until the slots 39 in the portion 38 of the ejector have assumed positions to permit the projections 72 on the arms 67 to pass therethrough, at which time the arms 67 will move to the position shown in Figure 8.

Thus it will be seen that the arms 67 and fingers 68 will be controlled in their movement by the operation of the ejector 36.

The weight or follower 38 which is movable in the container 23 is provided with an extension 73 preferably in the form of a hook which is adapted to enter the opening 40 in the ejector 36 to form an extension of the ejector, as shown more clearly in Figures 9 and 10. This will occur after the last article 62 has been delivered from the container 23. As shown in Figure 9, the parts are in the position to discharge the last article from the container 23. After this article has been discharged and as the ejector 36 moves backwardly from the position shown in Figure 9 to the position shown in Figure 8, the weight or follower 35 will drop upon the platform or support 16 and at the same time the hook shaped portion 73 will engage in the opening 40 in the ejector 36 and the weight 35 and ejector 36 will then be connected together, the weight forming an extension to the ejector. This is necessary inasmuch as during the vending of the articles when the articles the in both containers, the articles in the container 23 co-operate with the ejector 36 to form an extension and as a means for discharging or delivering a previously placed article which has been delivered from the container 23.

When the containers are first placed in the machine and are filled with the articles, the first operation of the machine will deliver one of the articles from the container 24 through the medium of one of the articles 62 from the container 23, as shown in Figure 1. This operation will place one of the articles 62 beneath the articles 34 so that in a subsequent operation of the machine and in the operations as shown in Figures 8 and 9, the articles from the container 23 will be ejected first and beneath the articles 34 in the container 24 until all of the articles in the container 23 have been dispensed, as shown in Figure 9. The weight or follower 35 will then drop into a position to become attached to the ejector 36 so that in the subsequent operations of the machine (see particularly Figure 10) the articles 34 from the container 24 will then be vended.

The member 42 is preferably connected to the arms 41 through the medium of a member 41^a and which member 41^a is in turn pivotally connected to the arm 41, as at 41^b, the member 42 being secured to the member 41^a preferably by means of fastening devices 42^a engaging in slots in the member 41^a (not shown), so as to permit of the necessary adjustment between the parts and the proper throw or movement of the ejector 36 with respect to the movement of the arms 43.

Obviously and in order that the articles being vended may be visible during the vending thereof, a suitable window (not shown) may be provided in alinement with the space 63 beneath the containers 23—24 and above the platform 16.

While the preferred form of the invention has 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 means for holding a pair of containers having therein the articles to be vended, said containers being open at their bottom, a platform beneath the containers to receive the articles therefrom, means fixed against bodily movement with relation to the containers and projectable above the platform between the articles from the two containers for maintaining the articles separated, an ejector for ejecting the articles, and means whereby the last said means will be responsive in its operation to the actuation of said ejector.

2. A vending machine embodying a pair of containers for the articles, a support extending beneath both containers to receive the articles from the containers, an ejector reciprocable above the support, a pivotally mounted member beneath the support, a formation on said member adapted to be projected above said support for holding one of the articles on the support against displace-

ment, means for moving the said member in one direction, and means connected with said member and adapted to be positioned in the path of movement of a part of the ejector to move said member below the support.

3. A vending machine embodying a container for the articles, a support to receive the articles from the container, an ejector reciprocable above the support, a pivotally mounted member beneath the support, spaced formations on said member both adapted to be projected above said support, one of said formations operating to hold an article on the support against displacement, and means tending normally to move said member to cause the last said formation to project into the path of delivery movement of an article on the support, the said ejector operating to engage the other of said projections to withdraw the first said formation out of the said path of movement of the article on said support.

4. A vending machine embodying means for holding two original containers having therein the articles to be vended, the bottoms of said containers being open, a support beneath the containers for receiving and holding the articles therefrom, means projectable into a space between the articles that are delivered from the two containers for maintaining them separated, an ejector for ejecting the articles from the support, and means operable at a predetermined time in the cycle of operation of the machine for withdrawing the second recited means.

5. A vending machine embodying a plurality of containers having therein the articles to be vended, a support for receiving the articles from the containers, an ejector operable to dispense the articles from one container in advance of the articles from the other container, a follower in the container from which the articles are first dispensed, means automatically connecting said follower with said ejector to form an extension thereof for ejecting the articles from the other of said containers, and means controlled by the operation of said ejector for maintaining the articles from the two containers separated.

6. A vending machine embodying a plurality of containers having therein the articles to be vended, a support beneath both of the containers and upon which the articles are delivered from the containers, an element projectable into the space between the articles resting upon the support for maintaining them separated, means tending normally to so position said element, an ejector for ejecting the articles from said support, means for actuating said ejector, and means responsive to the actuation of said ejector for withdrawing said element against the stress of the said positioning means.

7. A vending machine embodying a plurality of containers having therein the articles to be vended, a support upon which the articles are delivered from the containers, an element projectable into the space between the articles from the two containers for maintaining them separated, means tending normally to so position said element, an ejector for ejecting the articles from said support, means for actuating said ejector, means responsive to the actuation of said ejector for withdrawing said element against the stress of the said positioning means, said ejector operating to eject all of the articles from one container in advance of the articles from the other container, and means automatically rendered active to adapt said ejector to eject the articles from the other of said containers.

8. In a vending machine, means for holding two supplies of articles to be vended, a support beneath both of the supplies for receiving and holding articles therefrom, means projectable into a space between the articles that are delivered from the two supplies and which are resting upon said support for maintaining them separated, an ejector for ejecting the articles from the support, and means operable at a predetermined time in the cycle of operation of the machine for withdrawing the second recited means.

In testimony whereof we have signed our names to this specification on this 19th day of June, A. D. 1929.

MYRON H. RICHARDSON.
ALBERT E. GEBERT.