May 22, 1934. M. H. RICHARDSON ET AL 1,960,065

VENDING MACHINE

Filed March 16, 1931 4 Sheets-Sheet 1

Fig. 1

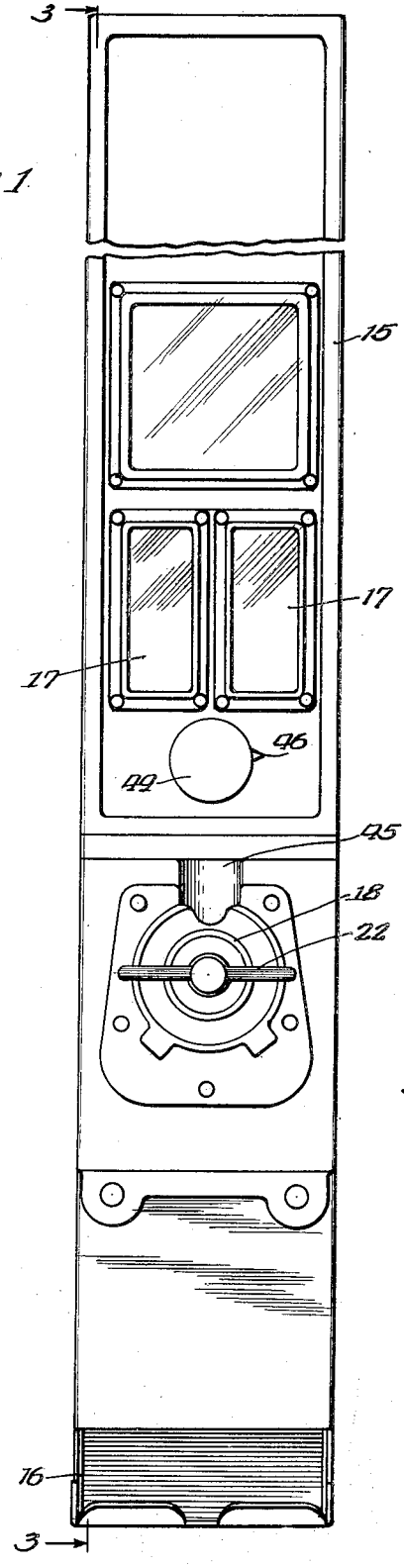
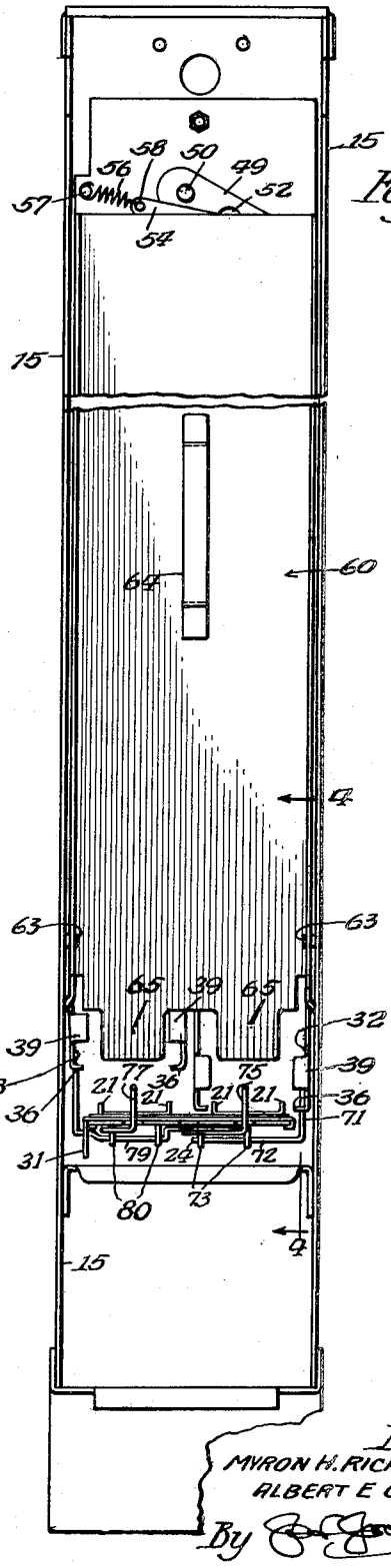


Fig. 2



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VENDING MACHINE

Filed March 16, 1931 4 Sheets-Sheet 2

Fig. 3

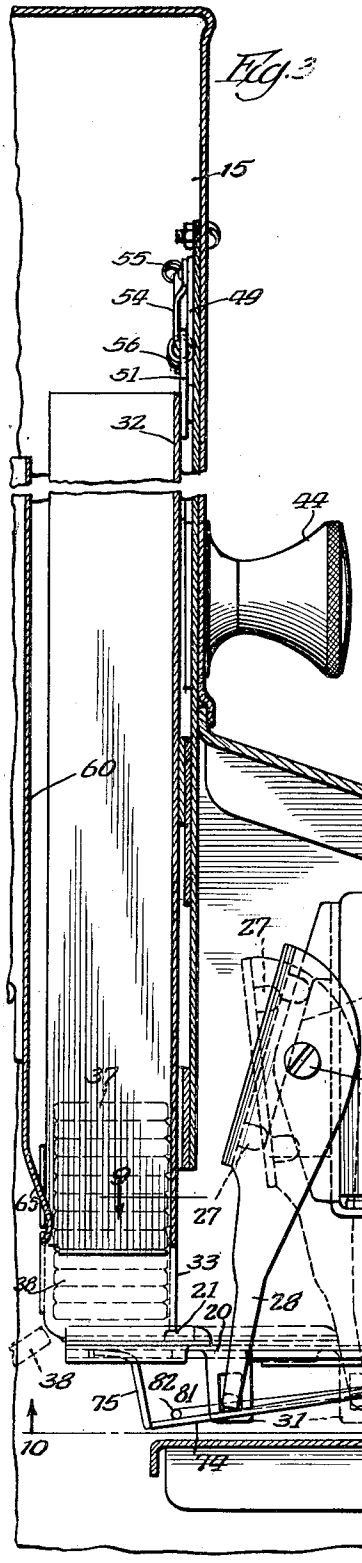


Fig. 4

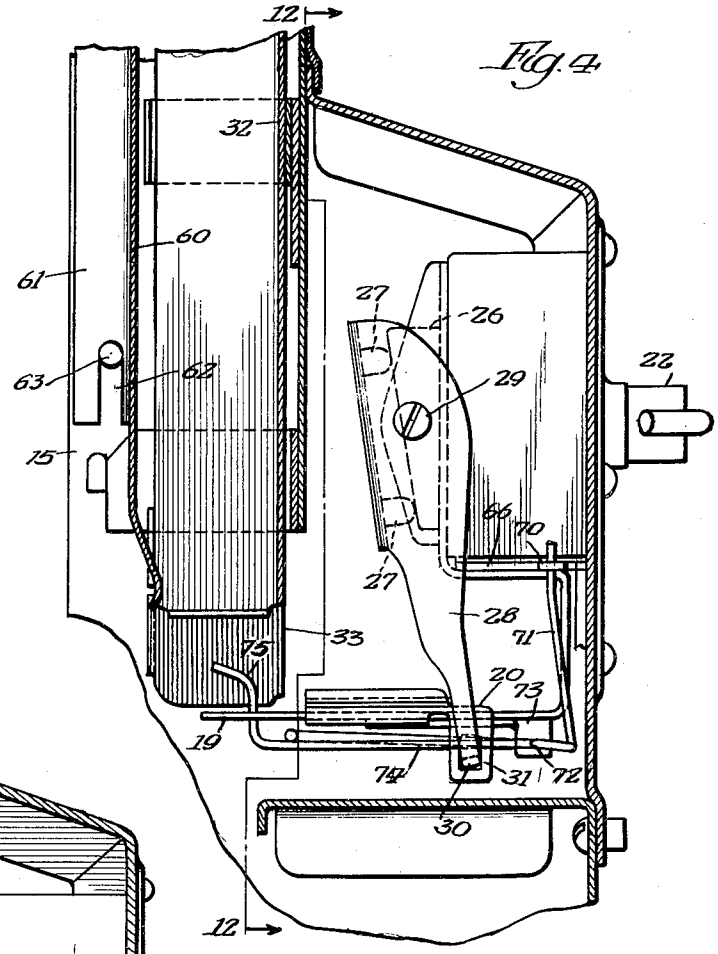
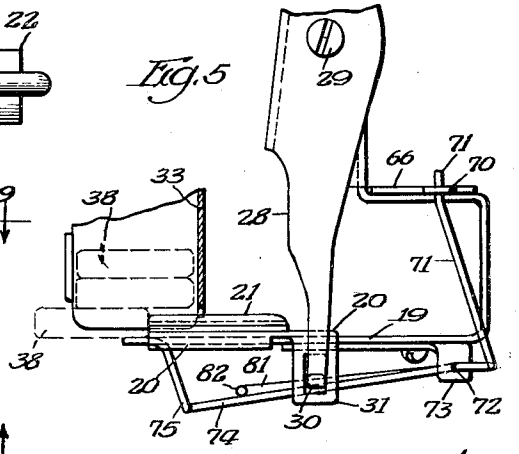


Fig. 5



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VENDING MACHINE

Filed March 16, 1931 4 Sheets-Sheet 3

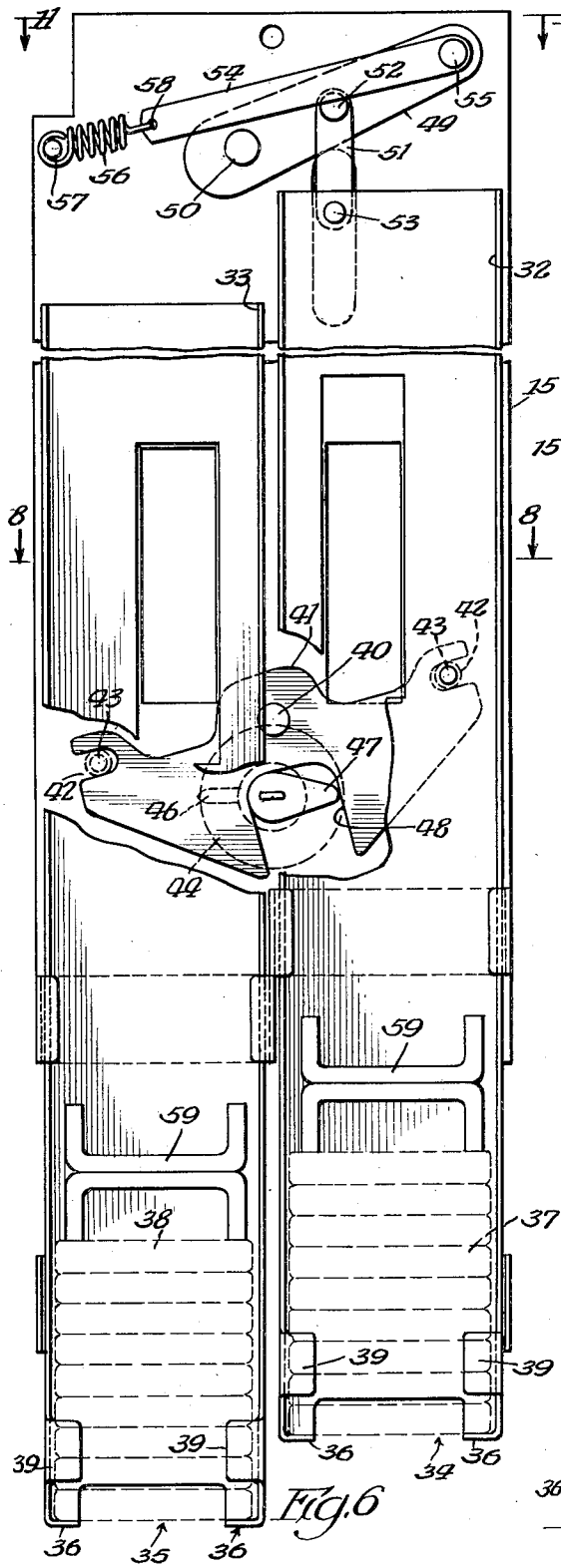


Fig. 6

Fig. 7

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VENDING MACHINE

Filed March 16, 1931 4 Sheets-Sheet 4

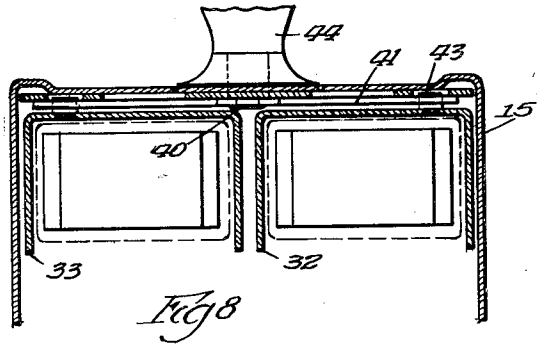


Fig. 8

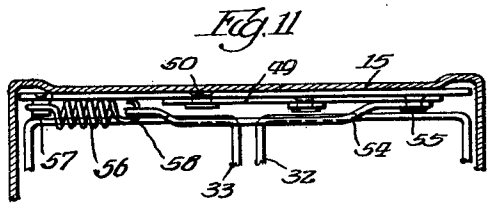


Fig. 11

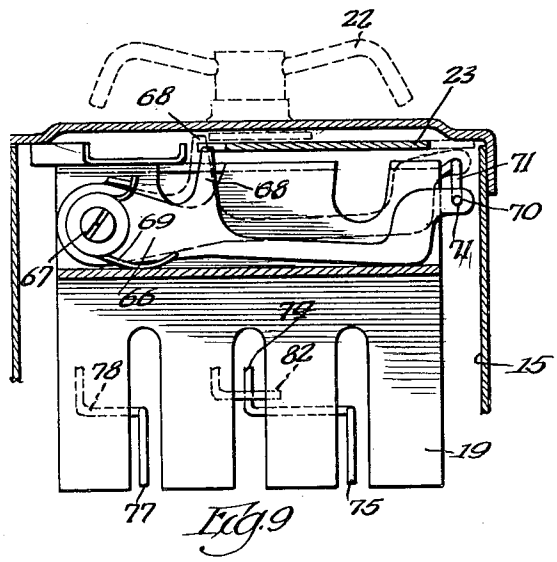


Fig. 9

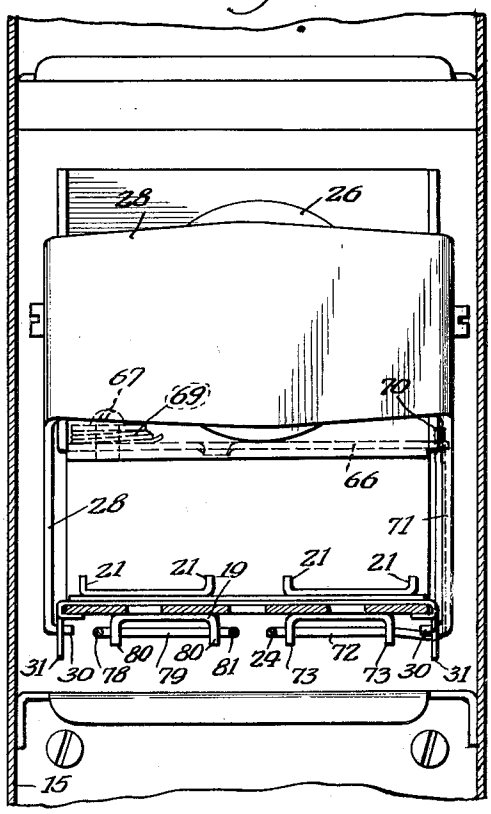


Fig. 12

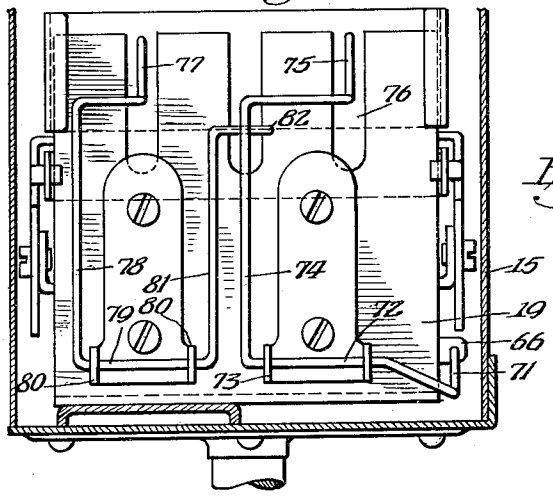


Fig. 10

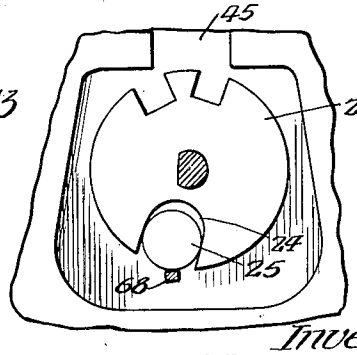


Fig. 13

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UNITED STATES PATENT OFFICE

1,960,065

VENDING MACHINE

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Application March 16, 1931, Serial No. 522,998

10 Claims. (Cl. 312—66)

This invention relates to improvements in vending machines of the type in which there is employed check controlled mechanism embodying means rendered active in the absence of articles in the container from which they are vended, for returning to the operator the inserted check, and in which machine there is also employed two containers for holding the articles, and an ejector controlled in its operation by the operation of the check controlled mechanism, and which ejector is common to the containers, and one of the objects of the invention is to provide in a machine of this character shiftable containers movable into and out of active position with respect to the ejector, and improved means whereby upon the movement of one of the containers into such active position the other container will be moved into an inactive position.

A further object is to provide improved means for initially and simultaneously moving the containers in opposite directions, one with respect to the other, and improved means whereby after a predetermined extent of movement of the containers by the selecting means, means will be automatically rendered active to further shift or move the containers in advance of and independently with respect to the shifting means, thereby rendering it impossible for an operator to so manipulate the machine as to obtain or eject articles from both of the containers on a single operation of the ejector.

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 front elevation of a machine of this character constructed in accordance with the principles of this invention.

Figure 2 is a rear elevation of the machine with the back removed, and with the machine empty.

Figure 3 is a sectional view taken on line 3—3, Figure 1, on an enlarged scale, and partly broken away.

Figure 4 is a detail sectional view taken on line 4—4, Figure 2, on the same scale as Figure 3.

Figure 5 is a detail view, partly in elevation, partly in section and partly broken away, of the ejecting mechanism.

Figure 6 is a rear elevation, partly broken away and with parts omitted, of the shiftable containers and the mechanism for moving them one with respect to the other.

Figure 7 is a view similar to Figure 6, with the parts in a different position.

Figure 8 is a sectional view taken on line 8—8, Figure 6.

Figure 9 is a sectional view taken on line 9—9, Figure 3.

Figure 10 is a view taken on line 10—10, Figure 3, looking in the direction of the arrows.

Figure 11 is a view taken on line 11—11, Figure 6.

Figure 12 is a sectional view taken on line 12—12, Figure 4, looking in the direction of the arrows.

Figure 13 is a detail view of the check carrying member.

Referring more particularly to the drawings the numeral 15 designates an enclosing casing which may be of any desired size and configuration, and is provided with a discharge outlet opening 16 for the articles to be vended. In the front of the casing is provided transparent openings 17 by means of which the articles in the container may be inspected, and 18 designates a check controlled mechanism.

Within the casing and at a suitable point, preferably above the bottom thereof, is a support 19 upon which is mounted a slide 20, having connected therewith upright projections 21 constituting ejectors, one or more of these projections 21 being provided for each of the containers, to be hereinafter described, for the articles.

The ejector 20 is adapted to be reciprocated in any desired or suitable manner and by means of any suitable coin controlled mechanism, suffice it to say that the coin controlled mechanism is provided with an actuating handle 22 which is located in a convenient position for the operator adjacent the front of the casing 15. The coin controlled mechanism embodies a check carrier 23 having a check seat 24 therein, adapted to receive and hold the check 25 so that when the check carrier 23 is inverted as shown in Figure 13, the check will be in a position to fall from the seat 24. The check controlled mechanism is also provided with a rotatable cam device 26 which is adapted to co-operate with spaced projections 27 on a member 28, which latter is pivotally supported as at 29 so that as the cam device 26 is rotated the member 28 will be rocked about its pivot 29 by the engagement of the cam device with the projections 27.

The member 28 is provided with ears or pro-

jections 30 which enter slots in the projections 31 carried by the ejector 20 for reciprocating the latter.

Arranged within the casing 15 are containers 32—33 which are of any desired size and are preferably arranged side by side and are mounted for longitudinal shifting movement in the casing, one with respect to the other. The containers 32—33 are preferably open at their bottom as at 34—35, and laterally and inwardly projecting ears 36 are provided adjacent the open bottom to form a support respectively for the articles 37—38 in the containers. Ears or projections 39 are provided adjacent the openings 34—35 and the supports 36, but spaced above the latter a sufficient distance to permit one of the articles from the respective containers to pass beneath the lower edges of the ears or flanges 39 to be ejected, but are spaced only a sufficient distance above the supports 36 so as to prevent more than one article from being ejected at one time. Obviously if it is desired to eject more than one article upon each operation of the ejector from each of the containers, the ears or flanges 39 will be correspondingly located.

Pivotally mounted upon any suitable support, preferably the rear face of the casing 15 and intermediate its ends as at 40, is a member 41 which is provided with slots or bifurcations 42 in each end thereof and in which bifurcations, lugs or projections 43 carried by the respective containers 32—33 project. This member 41 constitutes the support for the containers and when the member is rocked about its pivot 40 the containers 32—33 will be simultaneously shifted one with respect to the other and in a longitudinal direction.

The member 41 may be oscillated or rocked about its pivot 40 in any suitable manner, but preferably by means of a knob or handle 44, which projects through a suitable opening in the face of the container 15 and is arranged in any convenient position for the operator, but preferably in proximity to a coin receiving opening 45 of the coin controlled mechanism.

Connected with the knob or handle 44 is an indicator or pointer 46 which is also located in a position to be viewed by the operator. The knob or handle 44 is connected with the member 41 in any suitable manner, preferably by means of an arm 47 which operates in a bifurcated portion 48 of the member 41, with the result that when the knob or handle 44 is rotated, the arm 47 will be correspondingly rotated and this in turn operating upon the walls of the bifurcation 48 will rock the member 41 about its pivot 40, the pointer or indicator 46 indicating to the operator which of the containers 32—33 is shifted by the operation of the handle or knob.

This mechanism affords a means whereby the containers 32—33 may be selectively positioned with respect to the ejector to determine from which of the containers the article is to be vended.

Pivotally mounted upon a suitable support within the casing is an arm or lever 49 movable about a pivot 50. A link 51 is pivotally connected at one end as at 52 with the arm 49 and at its other end as at 53 with one of the containers, preferably the container 32. A second link 54 is pivotally connected as at 55 with the arm 49, remote from the pivot 50, and is anchored by means of a spring 56 to a fixed support, one end of the spring being secured as at 57 to a fixed support, while the other end of the spring 58 is connected with the link 54. The arm 49 is of such a length and the link 54 and pivot 50 are so arranged with respect to each other, that when the containers 32—33 are shifted longitudinally, the arm 49 will be rocked about its pivot and after a predetermined extent of movement of the containers in one direction or the other, the link 54 will pass over the center of the pivot 50 and thereby impart a sudden and further movement to the containers in the same direction, in advance of and independently with respect to the actuating handle 44. This is particularly advantageous because it insures that after the containers have been shifted to a predetermined position, the operator will lose control of the containers and they will be automatically shifted to a further extent in the same direction so as to cause the delivery end of only one of the containers to be moved into an active position with respect to the ejector, whereby an article may be ejected from such container, and the delivery opening of the other container to be moved to an inactive position with respect to the container beyond the control of the operator.

Arranged within each of the containers is a weight 59, which acts as a follower for the articles 37—38.

The backs of the containers 32—33 are preferably open so as to facilitate the insertion or replenishing of articles thereinto, and there may be provided a closure 60 provided with flanges 61 (see particularly Figure 4) having a bifurcation 62 at the bottom thereof, and these bifurcations 62 are adapted to receive lugs or projections 63 carried by the walls of the casing 15. The back 60 may also be provided with a handle 64 by means of which it may be placed in position and removed and the lower extremity of the back 60 is preferably provided with lips 65 which are adapted to pass between the flanges or ears 39 and to co-operate with the ears 39 to hold the articles from being displaced from the containers and to insure the delivery of only a predetermined number of articles upon each actuation of the ejector.

In order to insure the return of the check to the operator in the absence of articles in either one of the containers, there is provided an arm or member 66 (see particularly Figure 9) which is mounted for movement about an upright pivot 67. This member 66 is provided with a finger 68 adapted to be moved into a position (see Figures 9 and 13) so as to prevent the check 25 from dropping from the check seat 24 in the check carrier 23 when no article is in the container and to be moved out of such position to permit the check to fall out of the seat when there are articles in the container, thereby providing a means controlled by the articles in the container for returning or permitting the check to be delivered into the machine. A spring 69 tends normally to move the finger 68 into the position shown in Figure 13.

Connected to the free end of the member 66 as at 70 is an arm 71 which in turn is connected with a rock shaft 72 journaled in suitable bearings 73, and which bearings are preferably mounted upon the lower face of the support 19. Connected also with the rock shaft 72 is an arm 74 which is provided with an upwardly extending portion 75 located directly beneath one of the containers and this extremity 75 extends through an opening 76 in the support 19. The tendency of the

spring 69 is to move the arm 66 to the position shown in dotted lines in Figure 9, that is so that the finger 68 will be positioned under the check 25, as shown in Figure 13, but when one of the containers which is disposed above the end 75 of the arm 74 is lowered to the position shown in Figure 3 or 5, the articles in the container will engage and depress the end 75 of the arm 74 and rock the shaft 72 in its bearings so as to move the arm or member 66 against the stress of the spring 69 (see Figure 9) to the position shown in full lines, thereby permitting the check 25 to drop from the seat 24 when the check carrier is in the position shown in Figure 3. However, when there are no articles in the container above the end 75 of the arm 74, the arm 75 will not be depressed and the fingers 68 will be held by the spring 69 in the position shown in Figure 13.

Arranged beneath the other container is a projection 77 carried by an arm 78, which in turn is secured to a rock shaft 79 journaled in suitable bearings 80. To the rock shaft 79 is connected an arm 81 which is provided with a laterally deflected portion or extremity 82 which extends over and rests upon the top of the arm 74 so that when the container beneath which the end 77 of the arm 78 is located, is lowered, should there be any articles in this container the end 77 of the arm 78 will be depressed. This will rock the shaft 79 in the direction to cause the arm 81 to move in a manner that the lateral projection 82 resting upon the top of the arm 74 will depress the latter to rock the shaft 72 and thereby retract the member 66 against the stress of the spring 69 so that the check in the check carrier will drop from the seat 24 when the check carrier is in position, as shown in Figure 13.

Likewise when there are no articles in this particular container, the arm 78 will not be depressed and the check will be prevented from being delivered from its seat.

It will thus be seen that the check controlled mechanism is common to and is controlled by the articles in either one of the containers, and that by means of the operating handle or knob 44 the containers may be selectively positioned so that articles may be delivered from either one by the operator of the ejector 20.

If the knob or handle 44 is operated so as to move the containers into the position shown in Figure 7, that is with the discharge outlets of the containers in the same horizontal plane, and a check is inserted in the check receiving opening 48, if the handle 22 is operated, the check will not be delivered from the check carrier 23 by reason of the fact that the finger 68 will not be retracted. However, should the member 41 through the operation of the knob or handle 44 cause the containers to be longitudinally shifted one with respect to the other until the link 54 passes over the center of the arm 49, the spring 56 will impart a sudden and further movement to the containers in the same direction, and the operator will thereby lose control of the containers and one of them will be shifted to an active and the other into an inactive position with respect to the ejector.

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. In a vending machine an ejector for the articles, means for actuating the ejector, a plurality of containers for the articles to be vended, said containers being simultaneously shiftable in opposite directions, and means for selectively positioning the containers with respect to the ejector, the last said means operating to move one of the containers into active position, while the other container is being moved out of active position with respect to the ejector.

2. In a vending machine an ejector for the articles, means for actuating the ejector, a plurality of containers for the articles to be vended, said containers being separate from each other and simultaneously shiftable in opposite directions, means for selectively positioning the containers with respect to the ejector, the last said means operating to move one of the containers into active position, while the other container is being moved out of active position with respect to the ejector, and means rendered active by the shifting of said containers, whereby after a predetermined extent of movement the containers will be shifted independently of and with respect to the second recited means.

3. In a vending machine an ejector for the articles, means for actuating the ejector, a plurality of containers for the articles to be vended, said containers being separate from each other and simultaneously shiftable in opposite directions, means for selectively positioning the containers with respect to the ejector, the last said means operating to move one of the containers into active position, while the other container is being moved out of active position with respect to the ejector, and means for causing the containers to be moved in advance of and independently with respect to the second recited means after the movement of the containers has been started by the second recited means.

4. In a vending machine, a plurality of containers arranged in proximity to each other and mounted for longitudinal shifting movement one with respect to the other, an ejector common to the containers, means for actuating the ejector, and means for simultaneously shifting the containers for selectively positioning one of the containers with respect to the ejector to have the articles delivered therefrom, while the other container is shifted into an inactive position with respect to the ejector.

5. In a vending machine, a plurality of containers arranged in proximity to each other and mounted for longitudinal shifting movement one with respect to the other, an ejector common to the containers, means for actuating the ejector, means for simultaneously shifting the containers for selectively positioning one of the containers with respect to the ejector to have the articles delivered therefrom, while the other container is shifted into an inactive position with respect to the ejector, and means automatically rendered active after a predetermined extent of movement of the containers, for causing the containers to be further moved in the same direction as when moved by the second recited means and to pass out of the control of the second recited means.

6. In a vending machine, a plurality of containers arranged in proximity to each other and mounted for longitudinal shifting movement one with respect to the other, an ejector common to the containers, means for actuating the ejector, means for simultaneously shifting the containers

for selectively positioning one of the containers with respect to the ejector to have the articles delivered therefrom, while the other container is shifted into an inactive position with respect to the ejector, the said means which is automatically rendered active, embodying a pivotally mounted arm connected with one of the containers, and a spring anchored to a fixed support and connected with said arm, said spring movable to one side or the other of the center of the pivot of the arm when the arm is rocked about its pivot.

7. In a vending machine, a pair of longitudinally movable containers for the articles to be vended, an ejector common to the containers, means for actuating the ejector, a member pivotally mounted intermediate its ends and connected with each of the containers, and an actuator for rocking the member about its pivot for longitudinally and simultaneously shifting the containers in opposite directions, whereby when one of the containers is selectively moved into an active position with respect to the ejector the other container will be moved out of such position.

8. In a vending machine, a pair of longitudinally movable containers for the articles to be vended, an ejector common to the containers, means for actuating the ejector, a member pivotally mounted intermediate its ends and connected with each of the containers, an actuator for rocking the member about its pivot for longitudinally and simultaneously shifting the containers in opposite directions, whereby when one of the containers is selectively moved into an active position with respect to the ejector the other container will be moved out of such position, and means other than said member and actuator operating at a predetermined time in the shifting movement of the containers for moving the containers independently thereof and out of the control of said actuator and member.

9. In a vending machine, a pair of longitudinally movable containers for the articles to be vended, an ejector common to the containers, means for actuating the ejector, a member pivotally mounted intermediate its ends and connected with each of the containers, an actuator for rocking the member about its pivot for longitudinally and simultaneously shifting the containers in opposite directions, whereby when one of the containers is selectively moved into an active position with respect to the ejector the other container will be moved out of such position, and means for insuring the delivery of only a predetermined number of the articles from either container upon each actuation of the ejector.

10. In a vending machine an ejector for the articles, means for actuating the ejector, a plurality of containers for the articles to be vended, said containers being separate from each other and simultaneously movable in opposite directions, and means for selectively positioning the containers with respect to the ejector, the last recited means operating when one of the containers is moved into active position to cause another of the containers to be maintained against movement into active position.

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