

Nov. 29, 1932.

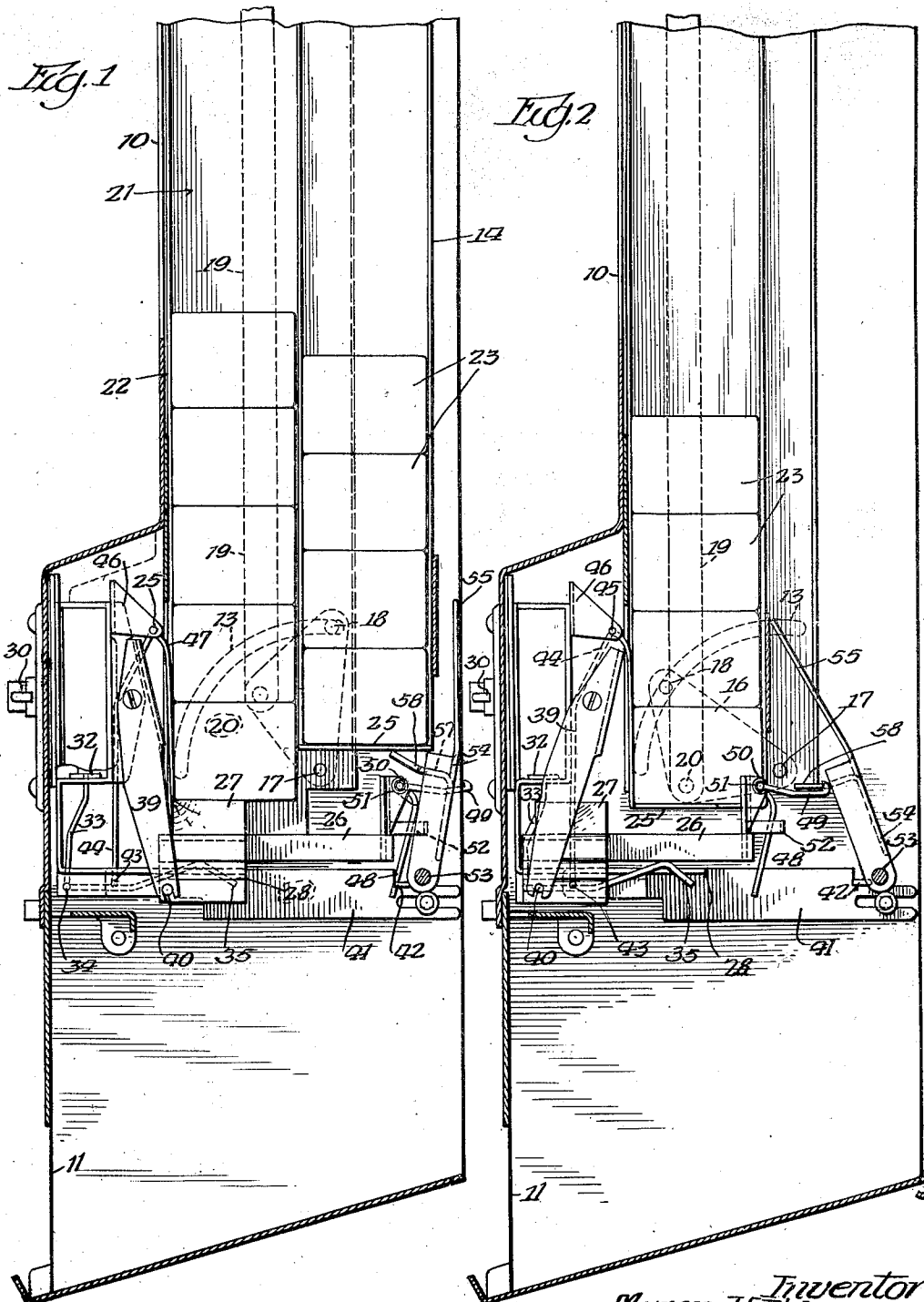
M. H. RICHARDSON

1,889,109

VENDING MACHINE

Filed March 19, 1930

3 Sheets-Sheet 1



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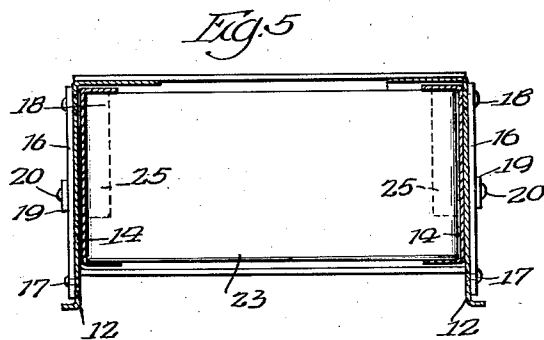
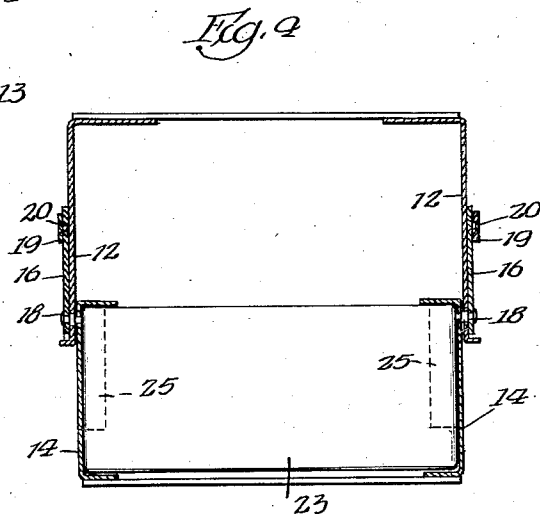
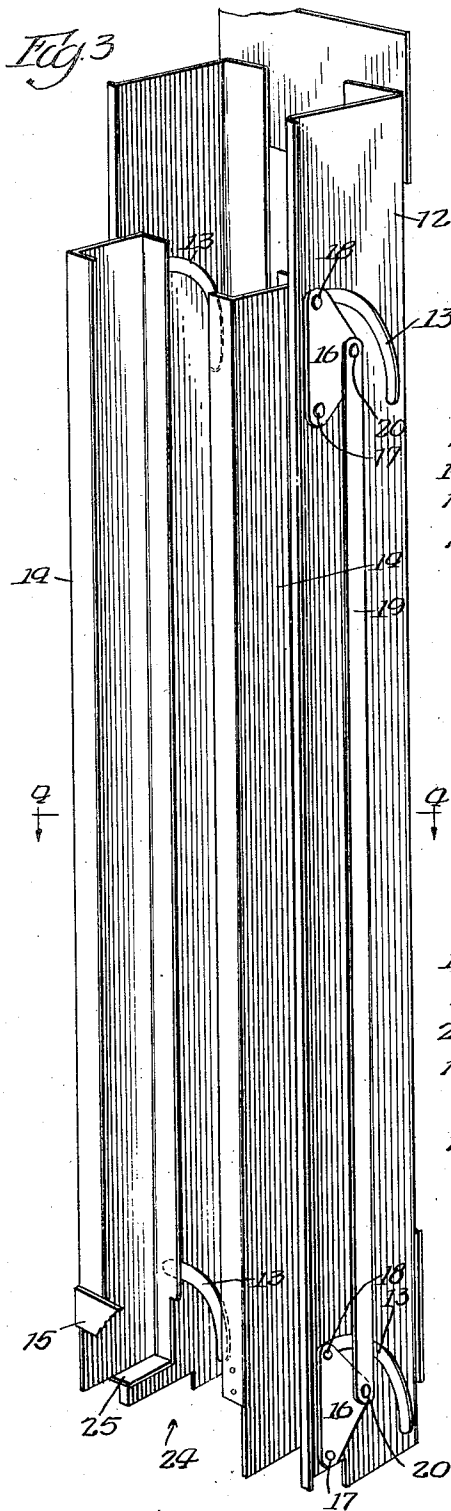
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Filed March 19, 1930

3 Sheets-Sheet 2



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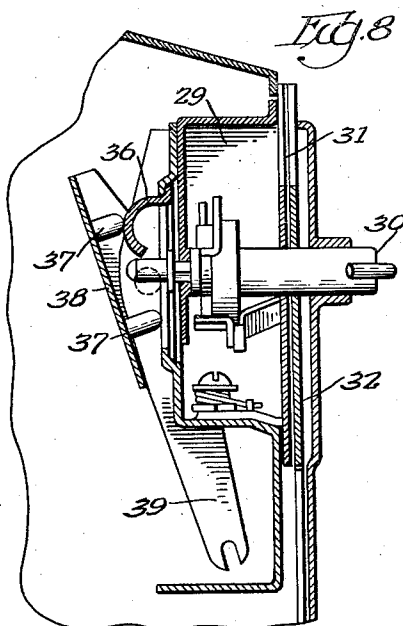
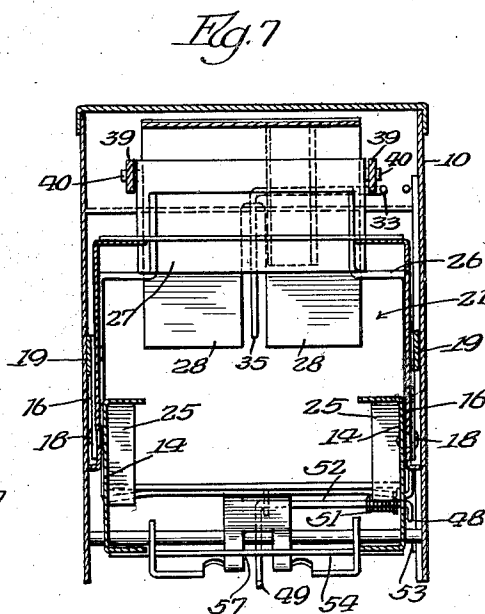
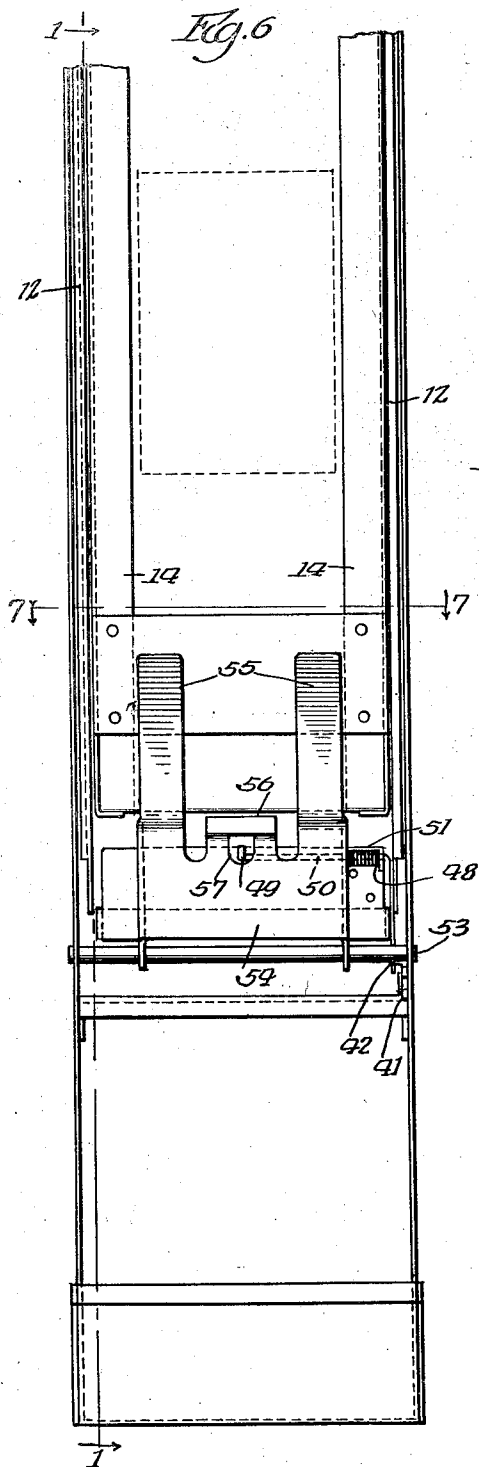
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VENDING MACHINE

Filed March 19, 1930

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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VENDING MACHINE

Application filed March 19, 1930. Serial No. 437,211.

This invention relates to improvements in vending machines of the type in which there is maintained a plurality of supplies of articles, one preferably arranged in advance of the other, the articles being completely delivered or dispensed from one of the supplies in advance of the articles from the other supply.

In my co-pending application Serial No. 437,210 filed March 19, 1930, there is shown and described a machine of this general character in which a container for holding one of the supplies is pivotally mounted by one end in a manner that when the articles are exhausted from the first supply the container will be automatically swung about its pivot to place the open delivery end thereof in a position to deliver the articles therefrom into a position to be ejected by the same ejector.

In the present form of the invention the container for holding the second or additional supply of articles is mounted adjacent the space occupied by the articles of the supply first to be vended and is adapted to be bodily shifted from such position into and so as to occupy the space from which the first supply has been vended, means being provided to maintain the container in an upright position during the shifting thereof.

A further object is to provide an improved machine of this character embodying an ejector mechanism and means whereby at a predetermined time in the cycle of operation of the machine or under predetermined conditions the ejector will be operatively connected with the container to bodily shift the latter upon a subsequent 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 detail vertical sectional view of a portion of a machine of this character constructed in accordance with the principles

of this invention and showing the parts in one position.

Figure 2 is a view similar to Figure 1, with the parts in another position.

Figure 3 is an enlarged detail perspective view of the shiftable container.

Figure 4 is a detail sectional view taken on line 4—4, Figure 3.

Figure 5 is a view similar to Figure 4, with the parts in a different position.

Figure 6 is a rear elevation of a portion of the machine with the back of the casing removed.

Figure 7 is a sectional view taken on line 7—7, Figure 6.

Figure 8 is a detail view partly in elevation and partly in section, of a coin controlled mechanism suitable for operating the device.

Referring more particularly to the drawings the numeral 10 designates generally an enclosing housing of any desired size and configuration, having a delivery opening 11 through which the articles to be vended are dispensed.

Within the housing 10 is arranged a casing 12 of any suitable size and configuration, and is adapted to be removably secured in position in any suitable manner.

The housing 10 preferably consists of up-rights or sides having arcuate slots 13 therein spaced from each other lengthwise of the sides and arranged in the casing 12 is a supplemental casing preferably consisting of sides or uprights 14 connected together in any suitable manner such as by means of a cross bar or member 15, so that the sides 14 will move in unison.

Members 16 are pivotally mounted upon the sides of the casing 12 as at 17 and these members 16 are connected with the respective sides of the supplemental casing by means of fastening devices 18, such as bolts, rivets or the like which pass through the slots 13, the members 16 being arranged on the outside of the sides 12 while the members 14 of the supplemental casing are arranged on the inside thereof.

The members 16 adjacent the sides of the casing 12 are connected by means of a link

19 through the medium of a pivot 20 connecting the respective ends of the link with the members 16.

One set of these members 16 and link 19 is arranged on each side of the supplemental casing, and it will be manifest that when the members 16 are rocked about their pivots 17 the rivets or bolts 18 will travel in the slots 13 and by reason of the link connection 19 between the members 16 the supplemental casing will be bodily shifted about the pivots 17 from one position to another according to the direction of movement of the members 16.

When the container is in the position shown in Figure 1, there will be formed in advance thereof a container or holder 21 in which articles 22 to be vended are stored and within the container 14 a second series of articles 23 are also stored, the lower end of the container 14 being open as at 24 and provided with inwardly projecting flanges 25, which serve as a support for the articles 23.

Mounted within the housing 10 is a slidable frame 26 having connected therewith an ejector 27, and the ejector 27 moves over a platform or support 28, the latter being in a position to receive the articles directly thereabove when the ejector 27 is moved to the position shown in Figure 2, so as to allow the articles to drop upon the support 28.

Any suitable means may be provided for reciprocating the ejector, such as a coin controlled mechanism designated generally by the reference numeral 29 having an operating handle 30 provided with a coin disc 31 adapted to receive the coin and carry it into the machine, the coin being held against being discharged into the pocket 31 by means of a spring controlled finger 32 to which is connected an arm 33 of a rock shaft 34, and to which shaft 34 is connected another arm 35 adapted to project above the support or platform 28 when the ejector is moved out of the way so that any of the articles falling upon the support 28 will depress the arm 35 to shift the finger 32 and allow the coin to drop from the coin pocket 31.

This coin controlled mechanism, however, is of the ordinary and well known construction and forms no part of the present invention. Suffice it to say, however, that there is associated with the coin controlled mechanism a cam 36 which is adapted to engage projections 37 on a pivotally mounted member 38 shaped to form arms 39, the arms being connected to projections 40 on the slide 26 for reciprocating the latter.

A slide 41 is mounted upon a suitable support and is provided with a lateral projection 42, and connected with the slide 41 as at 43 is an arm 44 pivotally mounted as at 45 upon a fixed support 46. An arm 47 is connected with the arm 44 and is disposed in a position to be engaged by the articles as they are delivered from the respective containers

and when the arm 47 is thus engaged by the articles it will move the slide 41 forwardly so that the projection 42 will engage an arm 48 on a catch 49 that is pivotally mounted as at 50 to hold the catch 49 in a lowered or inactive position. A spring 51 tends normally to elevate the catch 49, and a stop 52 is also provided on the slidable frame 26.

Pivotally mounted upon a suitable support as at 53 is a member 54 shaped to form fingers or projections 55 that extend up behind the shiftable container. This member 54 is provided with a portion 56 having an opening 57 therein into and out of which the catch 49 is adapted to pass upon the reciprocation of the ejector 27 and slide 26. The opening 57 forms a shoulder 58 behind which the catch 49 will engage when the latter is raised, as shown in Figure 2, so that upon a subsequent operation of the ejector and slide 26 the member 54 will be rocked and the fingers 55 will engage behind the container and bodily shift the same by causing the members 16 to be rocked about their pivots 17.

The container will not be bodily shifted until all of the articles 22 from the container 21 have been exhausted, as the presence of the articles 22 in the container 21 will hold the catch 49 depressed in the manner already stated. When, however, the articles 22 are exhausted from the container 21 the catch 49 will be raised as the arm 47 will swing outwardly or into the container 21 under the influence of the spring 51 exerted through the slide 41 and arm 44 causing the catch to assume the position shown in Figure 2, so that upon a subsequent operation of the ejector 27 and slide 26 the shiftable container will be bodily moved by causing the members 16 to swing about their pivots 17 so as to position the shiftable container within the space occupied by the articles 22 or within the container 21.

The articles 23 will then be delivered from the container 14, in a manner similar to the manner in which they were delivered from the container 14.

When all of the articles 23 have been dispensed from the container 14 and it is desired to refill the machine, the container 14 is bodily shifted to the position shown in Figure 1 from the position shown in Figures 2 and 3, by rocking the members 16 about their pivots 17. When in this position it will be manifest that the shiftable container will be held against accidental displacement by reason of the position of the bolts or connecting devices 18 with respect to the slots 13.

It is thought that the operation of this device will be clearly understood from the foregoing, but briefly stated it is as follows. The normal position of the parts are as shown in Figure 1, that is, with the shiftable container behind the space 21 forming the container for the first supply of articles 22. During

the operation of the machine by the handle 30 of the coin controlled mechanism and the insertion of the proper coin thereinto the articles 22 will be successively delivered from the container 21 by the reciprocation of the ejector 27. So long as there are any articles 22 present in the container 21 the catch 49 will be held depressed and the reciprocation of the ejector will not affect the member 54.

When, however, the supply 22 is exhausted the catch 49 will be elevated in the manner already described, so that it will be in the path of movement of the shoulder 58 on the member 54 so that upon a subsequent operation of the ejector the member 54 will be rocked about its pivot to cause the fingers 55 to engage and press against the back of the shiftable container, thereby rocking the members 16, causing the container to be bodily shifted by reason of the slots 13 and connections 18 moving therein until the shiftable container assumes a position within the space or container 21 occupied by the articles 22. Thereafter the articles 23 will be dispensed from the shiftable container in the same manner as the articles 22 were dispensed.

It will be noted that the delivery or outlet end of the bodily adjustable container 14 is normally disposed above the outlet end of the holder for the first supply of articles to be vended and is also considerably above the plane of operation of the ejector, to hold the same out of the way. When, however, the container 14 is bodily shifted, the links or members 16 and the slots 13 with the lugs or connections 18 will impart a longitudinal movement to the container to cause the delivery or outlet end to drop down into a position adjacent the path of movement of the ejector. When the container is again bodily shifted out of operative position it will be again raised.

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, a holder for a supply of articles to be vended, said holder fixed against bodily movement, a bodily shiftable container for holding an additional supply of articles to be vended, an ejector common to both of said supplies, means for bodily shifting said container entirely into the space occupied by the articles in said holder in the absence of articles in said holder, and means for supporting the holder while being thus shifted.

2. In a vending machine, a holder for a supply of articles to be vended, said holder fixed against bodily movement, a bodily

shiftable container for holding an additional supply of articles to be vended, an ejector common to both of said supplies, means responsive to the operation of the ejector, in the absence of articles in the said holder for bodily shifting said container entirely into the space occupied by the articles in said holder, and means for supporting the holder while being thus shifted.

3. In a vending machine, a holder for articles to be successively vended, an ejector operating adjacent a delivery station for successively vending the articles, a bodily shiftable container remote from said station for holding an additional supply of articles, means operating in the absence of articles in the said holder for bodily shifting said container entirely into the space occupied by the articles in the said holder adjacent said station whereby the articles in the container will be successively delivered by said ejector, and means operating to maintain said holder against tilting while being thus bodily shifted.

4. In a vending machine, a holder for articles to be successively vended, an ejector operating adjacent a delivery station for successively vending the articles, a bodily shiftable container remote from said station for holding an additional supply of articles, means automatically rendered active in the absence of articles in said holder and responsive to the operation of said ejector for bodily shifting said container entirely into the space occupied by the articles in the holder adjacent said station, whereby the articles in said container will be successively discharged upon subsequent operations of the ejector, and means for supporting the container while being thus bodily shifted and for relieving the ejector of the weight of the container.

5. In a vending machine, a holder for articles to be successively delivered, an ejector having a fixed path of movement, a bodily shiftable container for holding an additional supply of articles to be vended and normally maintained in a position to hold the articles therein out of the path of movement of the ejector, means for bodily shifting said container entirely into the space occupied by the articles in the said holder in the absence of articles in the holder, to position the articles in the container to be subsequently ejected by said ejector, and means for maintaining the holder against tilting while being thus bodily shifted.

6. In a vending machine, a holder for articles to be successively delivered, said holder being fixed against bodily movement, an ejector having a fixed path of movement, a bodily shiftable container for holding an additional supply of articles to be vended and normally maintained in a position to hold the articles therein out of the path of movement of the

- ejector, means responsive to the operation of the ejector for bodily lifting said container to position the same into the space occupied by the articles in the said holder in the absence of articles in the holder, and to position the articles in the container to be subsequently ejected by said ejector, and means for maintaining the holder against tilting while being thus bodily shifted.
7. In a vending machine, a holder for articles to be successively delivered, an ejector having a fixed path of movement, a bodily shiftable container for holding an additional supply of articles to be vended and normally maintained in a position to hold the articles therein out of the path of movement of the ejector, means responsive to the operation of the ejector for bodily shifting said container into the space occupied by the articles in the said holder in the absence of articles in the holder, to position the articles in the container to be subsequently ejected by said ejector, the said means embodying a swinging member, fixed against bodily movement, and a catch carried with the ejector for engagement with said member, said catch being maintained normally inactive by the presence of articles in said holder.
8. In a vending machine a holder for a supply of articles to be vended, said holder fixed against bodily movement, a container for holding an additional supply of articles, links pivotally connecting said container to a stationary support, and an ejector adjacent said holder for successively delivering the articles therefrom, the said container being bodily shiftable entirely into the space occupied by the articles in said holder, whereby the articles may be successively delivered from the container by said ejector, in the absence of articles in said holder.
9. In a vending machine a holder for a supply of articles to be vended, said holder fixed against bodily movement, a container for holding an additional supply of articles, links pivotally connecting said container to a stationary support, an ejector adjacent said holder for successively delivering the articles therefrom, and means responsive to the operation of the ejector in the absence of articles in the said holder for bodily shifting said container, upon the operation of the ejector, entirely into the space occupied by the articles in said holder to be successively delivered by said ejector upon subsequent operations of the ejector.
10. In a vending machine a holder for a supply of articles to be successively vended, a container for holding an additional supply of articles, a pair of links on each side of said container for pivotally connecting the container to stationary supports and for bodily lateral shifting movements with respect thereto, links connecting each pair of the first said links to cause them to move in unison, and an ejector adjacent the said holder for successively delivering the articles therefrom, said container being bodily shiftable into the space occupied by the articles in said holder in the absence of articles in the holder whereby the articles in said container may be successively delivered upon subsequent operations of said ejector.
- In testimony whereof I have signed my name to this specification.
- MYRON H. RICHARDSON.

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