

Feb. 20, 1945.

J. B. BROCK

2,369,882

VENDING MACHINE

Filed Sept. 21, 1943

3 Sheets-Sheet 1

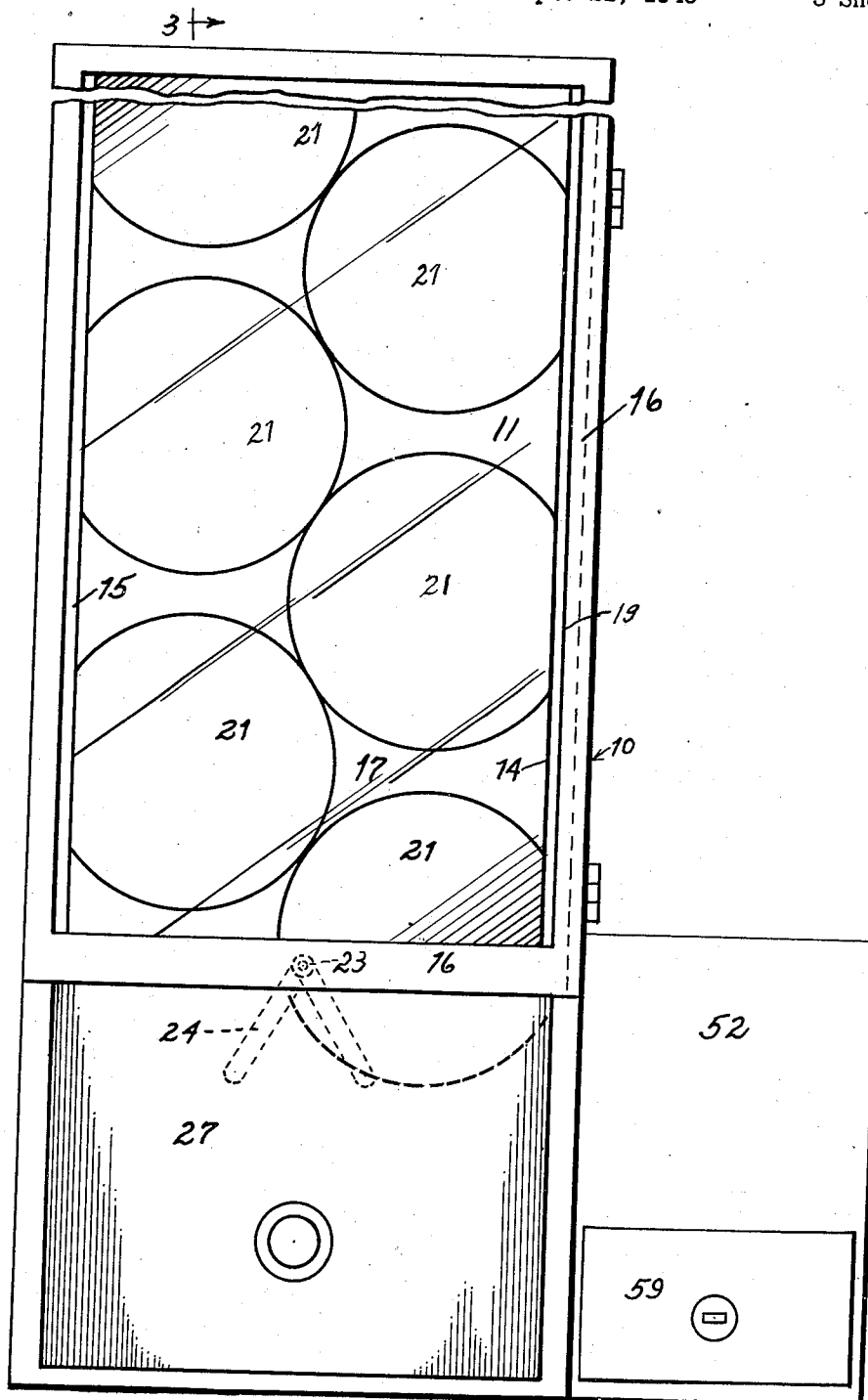


Fig. 1

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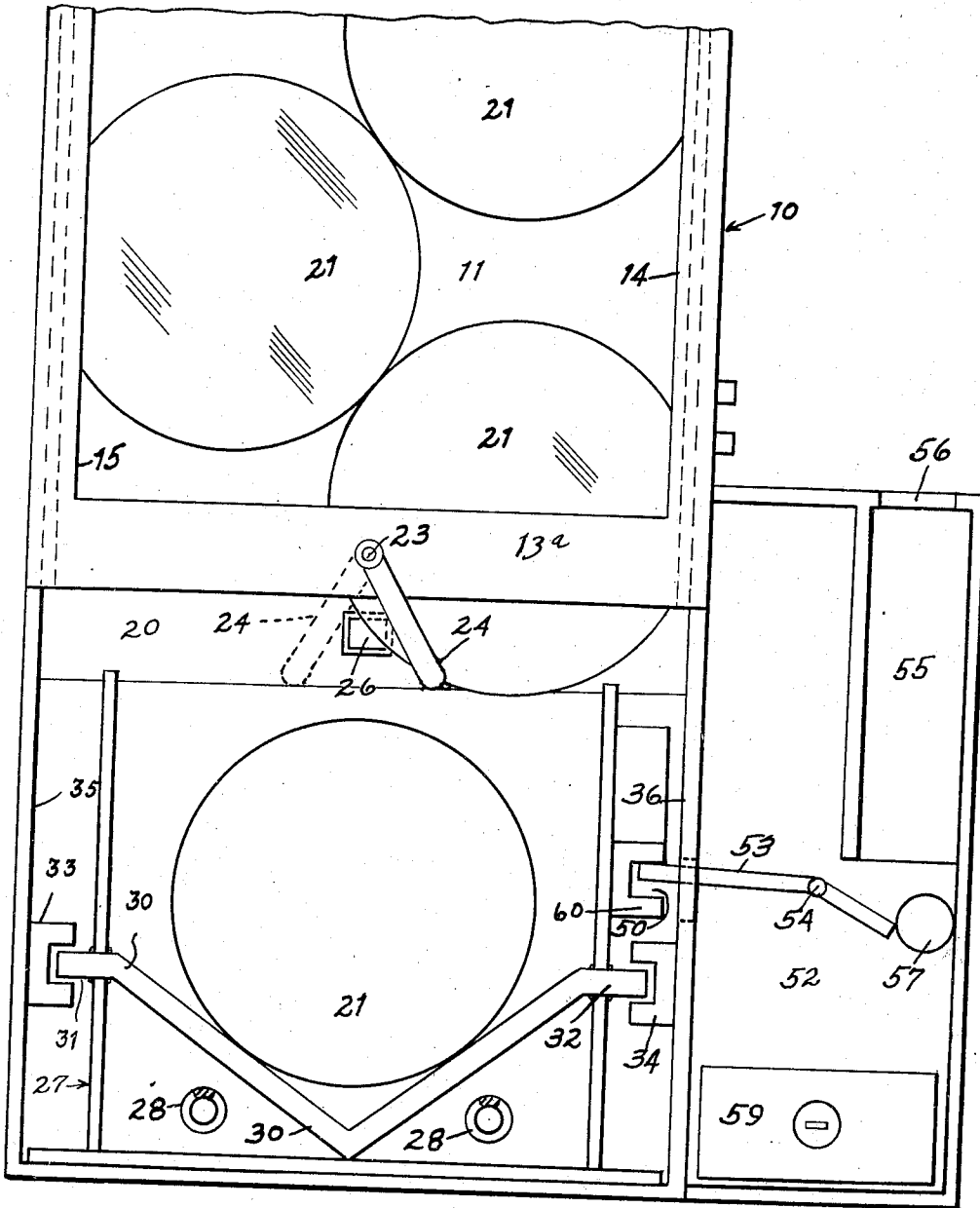
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3 Sheets-Sheet 3

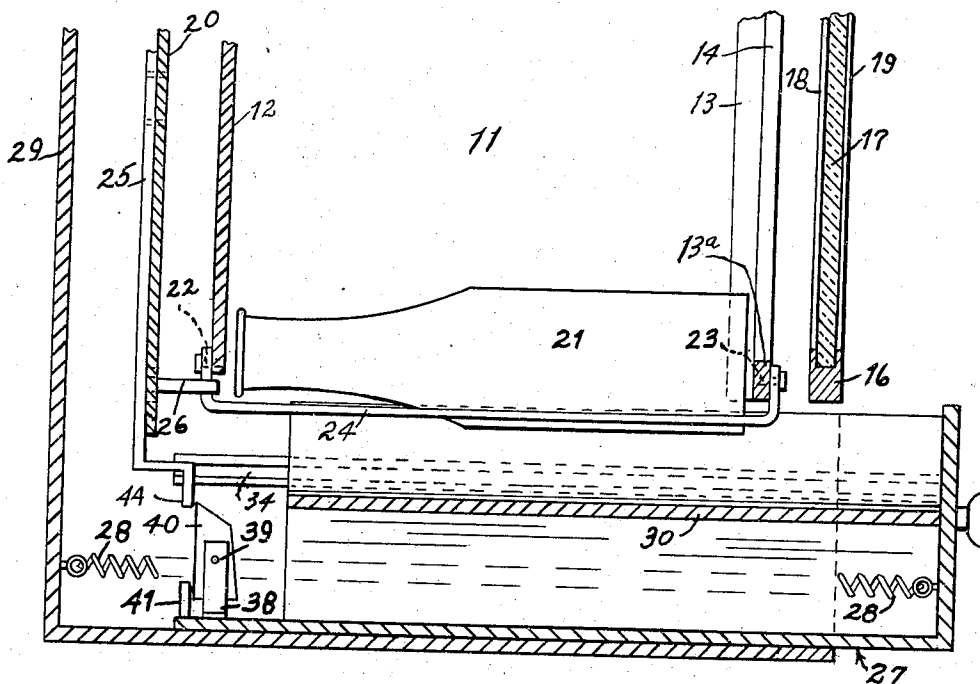
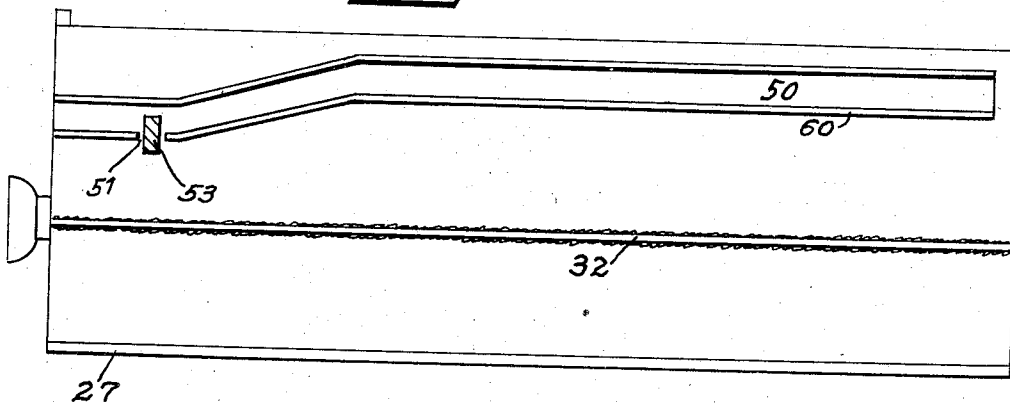


Fig 3



Fg 4

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UNITED STATES PATENT OFFICE

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VENDING MACHINE

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9 Claims. (Cl. 312-48)

This invention relates to a vending machine and more especially to a machine for vending or dispensing bottled beverages in which a plurality of overlapping columns of bottles are confined within a vertically disposed compartment, the width of the compartment being substantially less than the width of two bottles, with a single pivoted means disposed in the lower end of the column for engaging the lowermost bottle and holding it against downward movement.

The machine is preferably provided with a drawer disposed below the lowermost bottle, and coin-controlled means for locking the drawer against removal and when a coin is inserted, permitting the drawer to be pulled outwardly together with the bottle disposed therein. Upon return to closed position, the drawer unlocks the pivoted means for holding the lowermost bottle, and allows the weight of the columns of bottles to shift the pivoted means laterally of the compartment to allow the lowermost bottle to pass into the dispensing drawer. The pivoted means being disposed below the next lowermost bottle, this pivoted means locks the column of bottles in position until another coin is deposited in the apparatus, the bottle within the drawer removed and the drawer returned to closed position.

It is an object of this invention to provide a vending apparatus comprising a compartment having a second compartment with a drawer disposed below the first compartment, the width of the first compartment being less than that of two bottles placed side by side so that two columns of bottles will be disposed within the first compartment with their edges in overlapping relation together with means for locking the drawer against removal from its compartment and coin-controlled means for unlocking the drawer and allowing the bottle within the drawer to be removed from the machine, return of the drawer releasing a latch to permit shifting the holding means for the column of bottles laterally, and allowing the lowermost bottle to fall into the drawer ready for delivery upon insertion of another coin.

It is another object of this invention to provide a vending machine having a vertically disposed storage compartment which is narrower than the width of two articles adapted to be stored within the compartment in columns so that the articles must pass downwardly one at a time, together with retaining means for supporting the column of articles, and means for locking the retaining means in position, a drawer disposed below the column of articles, coin-controlled means for

allowing the drawer to be opened, so that a bottle can be removed from the drawer, and means operable by the closing of the drawer for releasing the locking means to permit shifting the retaining means to allow the lowermost article to fall into the drawer into vending position, and permit the locking means to lock the retaining means beneath the next oncoming article to support the column of articles to prevent the same from moving into the drawer until the drawer after being opened has been closed again, at which time the lowermost article will be moved into the compartment, and the retaining means will be positioned below the lowermost article in the compartment.

Still another object of the invention is the provision of an improved vending machine for round articles to be vended, such as bottled beverages, in which the articles are stored in a minimum amount of space, by a simple guiding and supporting member or frame, and in which the discharge of articles from two or more columns of the articles is controlled by a relatively simple, pivoted controlling member, the movement of which is brought about by the weight of the articles, and which is adapted to be very easily controlled by various types of coin controlled devices.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which:

Figure 1 is a front elevation of the apparatus;

Figure 2 is a view similar to Figure 1 with the front cover to the vending apparatus removed and also the front wall of the bottle receiving drawer removed;

Figure 3 is a vertical sectional view taken along the line 3-3 in Figure 1, and omitting showing some of the bottles and showing the drawer partially open;

Figure 4 is a side elevation of the bottle holding drawer, looking at the right-hand side in Figure 1.

Referring more particularly to the drawings, the numeral 10 denotes a vending machine having a bottle retaining compartment 11 which is composed of a back member 12 and front member 13, the front member 13 having flanges 14 and 15 to prevent the bottles from moving forward when the door 16 is removed. A cross member 13^a is disposed between the lower portions of members 14 and 15. Door 16 mounted on hinges H-H is composed mostly of a pane of glass 17 which is held in position by flanges 18 and 19. The back

wall of the vending mechanism is indicated by reference character 20, and the flanges 14 and 15 and the back wall 12 form the front and rear guiding means for the bottles 21. The back member 12, front member 13, and back wall 20 are secured at their outer edges, in any suitable manner, to the interior surfaces of sidewalls 35 and 36. Pivotaly secured as at 22 and 23 is a U-shaped member 24, the horizontal portion of which is adapted to support the double column of bottles 21. Secured to the exterior of the back wall 20 is a leaf spring 25 which has a lug 26 thereon which penetrates a hole in the wall 20, and normally is pressed by the leaf spring 25 into the path of the rear leg of the U-shaped member 24. This supports the column of bottles.

Slidably mounted within the lower portion of the housing is a drawer 27 which is normally biased to move to closed position by means of springs 28 whose ends are secured to the inner side of the front wall of the drawer and to the exterior housing 29. The drawer has a trough shaped portion 30 which is adapted to support a bottle in dispensing position. The drawer also has projecting lugs 31 and 32 which are adapted to move in guideways 33 and 34 disposed on the side walls 35 and 36 of the housing. The upper and lower portions of the sidewalls of drawer 27 are welded or soldered to the lugs 31 and 32.

Rising from the rear end of the bottom of drawer 27 is a post 38 which has pivotally secured thereto as at 39 a dog 40 whose lower end is heavier than its upper end. A projection 41 rises from the drawer bottom 27 and prevents clockwise movement of the dog 40 beyond the position shown in Figure 3. This dog 40, as the bottom is moved to closed position is adapted to engage the lowermost end 44 of the leaf spring 25 and move it backwards until the projection 26 will be removed from the path of the rear vertical leg of the U-shaped member 24 before the upper end of dog 40 passes by the lower end 44 of the leaf spring member 25. When the drawer is about fully closed and the leaf spring member slips past the tip of dog 40 and is allowed to spring back to the position shown in Figure 3, the column of bottles will have already moved downwardly to cause the lowermost bottle to be disposed within the drawer and the U-shaped member will be moved in a clockwise manner in Figure 1 to the left-hand dotted position, at which time the projection 26 will have moved back to the position shown in Figure 3, and the projection 26 will then hold the U-shaped member 24 against downward movement, but at the same time the next to the lowest bottle shown in Figure 1 will have contact with the horizontal portion of the U-shaped member 24, and thus the column of bottles will be prevented from moving further downward until the drawer is opened, and the bottle removed, and again moved to closed position.

The means for controlling the drawer comprises a raceway 50 secured on one side of the drawer, which has a notch 51 in its lower sidewall. Pivotaly mounted within a coin-control housing 52 is a lever 53 which is pivoted as at 54. A coin chute 55 is provided and a coin slot 56 communicates therewith so that when a coin 57 is dropped through coin opening 56, the coin 57 will engage the right-hand end of lever 53 in Figure 2 and will raise the left-hand end of lever 53 to the position shown in Figure 2, and out of notch 51 and thus unlock the drawer so that it can be manually opened. As the drawer

is moved towards fully opened position, the lever 53 will be guided in the raceway 50, and due to a rise in the raceway shown in Figure 4 its left-hand end in Figure 2 will be raised upwardly to a greater degree than shown in Figure 2 so that sufficient clearance will be formed between the right-hand wall of coin-control housing 52 and the right-hand end of lever 53 to allow the coin 57 to drop into the coin box 59. Then the left-hand end of lever 53 will drop downwardly against the lower rib 60 of the raceway 50, and will ride along this rib as the drawer is moved to closed position, after the bottle therein has been removed for consumption. When the drawer moves to closed position, the lever 53 will drop downwardly in notch 51 to assume the position shown in Figure 4, and thus the drawer 27 will be prevented from being moved to open position until another coin is dropped into the coin-control mechanism.

It is thus seen that I have provided a vending machine which is adapted for use in the sale of any objects, especially cylindrical objects and more especially bottled beverages wherein a pair of columns, the proximate edges of which are disposed in overlapping relation, will be retained against downward movement, and will be allowed to move one at a time to dispensing position and being automatically locked against downward movement until the coin-control mechanism has been activated by the insertion of another coin to release the drawer for opening and closing movement.

In the drawings and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a vending machine having a vertically disposed compartment whose distance between its side walls is less than the width of two columns of articles supported within the compartment, a pivoted member in the lower portion of the compartment adapted to swing from beneath one column of articles to a position beneath another column of articles, means for locking the pivoted member against movement, a slidably mounted member disposed below the pivoted member adapted to receive the articles one at a time, coin-controlled means for preventing the slidable member from being slid outwardly from beneath the column of articles, but upon insertion of a coin, being freed to slide outwardly to deliver articles to the customer, means on the slidable member for engaging the locking means to remove the locking means from the path of the pivoted member when the slidable member is fully inserted within the compartment to thus allow the weight of the articles to swing the pivoted member to allow an article to move into the slidable member ready for delivery to the exterior of the machine when the coin-controlled mechanism is again released.

2. In a vending machine for vending articles, a vertically disposed compartment whose width is less than the width of two articles, so that two columns of articles can be stacked within the compartment with their proximate edges in overlapping relation, and whereby retention of one column from downward movement will prevent the other column from moving downward by gravity, a pivoted member disposed in the lower

end of the compartment and extending into the path of the columns one at a time, means normally disposed within the path of the pivoted member for preventing movement of the pivoted member under weight of the columns of articles, a delivery mechanism disposed below the pivoted member and adapted to receive the articles one at a time, the delivery mechanism being bodily slidable out of the compartment for removal of an article, coin-controlled means for normally preventing movement of the delivery mechanism outwardly from the compartment, means on the delivery mechanism for engaging the means preventing movement of the pivoted member when the delivery mechanism is fully inserted within the compartment for moving the last-named means out of the path of the pivoted member to allow the weight of the articles to swing the pivoted member to thus allow the lowermost article to move into the delivery mechanism, the movement of the article into the delivery mechanism positioning the pivoted member below the adjoining column of articles to support both columns.

3. In a vending machine having a supporting and guiding member for supporting two columns of articles in overlapping relation, a movable member disposed below the columns of articles and adapted to engage one column at a time to restrain both columns from downward movement, means normally restraining the movable member against movement under the weight of the articles, coin-controlled means for releasing the movable member to allow it to move from beneath one column to a position beneath the adjacent column of articles to allow the lowermost article in the first column to move to a released position, and to engage the lowermost article in the adjacent column to prevent downward movement of both columns.

4. In a vending machine having a supporting and guiding member for supporting a plurality of articles whose proximate edges are disposed in overlapping relation to each other, means for supporting the articles against downward movement in the supporting and guiding member, coin-controlled means for allowing movement of the supporting means under weight of the articles to permit the lowermost article to drop, said supporting means being moved by the delivery of the lowermost article from one side of the compartment to a position beneath the lowermost article in the other side of the supporting and guiding member.

5. In a vending machine comprising a compartment for supporting two columns of articles in staggered relation with the proximate edges of the articles being disposed in overlapping relation, a U-shaped rod pivoted at its ends in a vertical plane substantially midway between the center line of the two columns of articles and adapted to swing laterally from beneath one column of articles to a position beneath the other column of articles, a spring-pressed member adapted to normally occupy a position in the path of one of the vertical legs of the U-shaped member to restrain its movement under the weight of the column of articles supported by its horizontal leg, a delivery drawer disposed beneath the U-shaped member and adapted to receive the lowermost article of one column when the pivoted member is released for swinging movement to swing beneath the lowermost article in the adjacent column, means on the delivery drawer for engaging the spring pressed

member as the drawer is moved to closed position to remove the spring pressed member from the path of one of the vertical legs of the U-shaped member to allow the weight of the column of articles to swing the U-shaped member to allow the lowermost article in one column to move into the drawer and to push the U-shaped member below the lowermost article in the adjacent column, and coin-controlled means for preventing outward sliding movement of the drawer except when a coin is deposited therein.

6. In a vending machine, a support having confining and guiding members for supporting a pair of columns of the articles to be vended, the said articles of each column being in vertically staggered relation to the articles of the other column, and the lower articles of each column with relation to higher articles in the other column being in overlapping supporting relation to said higher articles, whereby discharge of the articles from either column is restrained by the lowermost article in the other column, and movable coin controlled supporting means carried by said support and engaging below and supporting the lowermost article of either column, said means being movable from a position below the lowermost article in one column to a position below the lowermost article in the other column, discharging an article from the first-mentioned column during such movement, and permitting the articles in both columns to descend upon said movement until supported by the said coin controlled means.

7. In a vending machine, a support having confining and guiding members for supporting a pair of columns of the articles to be vended, the said articles of each column being in vertically staggered relation to the articles of the other column, and the lower articles of each column with relation to higher articles in the other column being in overlapping supporting relation to said higher articles, whereby discharge of the articles from either column is restrained by the lowermost article in the other column, and movable coin controlled supporting means carried by said support and engaging below and supporting the lowermost article of either column, said means being movable from a position below the lowermost article in one column to a position below the lowermost article in the other column, discharging an article from the first-mentioned column during such movement, and permitting the articles in both columns to descend upon said movement until supported by the said coin controlled means, said articles being provided with laterally curved surfaces arranged to engage said supporting means, and in which said supporting means is located to engage the inner lower side of the lowermost article, whereby said supporting means is urged to its alternative position in support of the lowermost article in the next column.

8. In a vending machine, a support having confining and guiding members for supporting a pair of columns of the articles to be vended, the said articles of each column being in vertically staggered relation to the articles of the other column, and the lower articles of each column with relation to higher articles in the other column being in overlapping supporting relation to said higher articles, whereby discharge of the articles from either column is restrained by the lowermost article in the other column, and movable coin controlled supporting means carried by said support and engaging below and supporting the

lowermost article of either column, said means being movable from a position below the lowermost article in one column to a position below the lowermost article in the other column, discharging an article from the first-mentioned column during such movement, and permitting the articles in both columns to descend upon said movement until supported by the said coin controlled means, said coin controlled means comprising a supporting member having a pair of upwardly extending portions pivoted on said support above the supporting surface of said member.

9. In a vending machine, a support having confining and guiding members for supporting a pair of columns of the articles to be vended, the said articles of each column being in vertically staggered relation to the articles of the other column, and the lower articles of each column with relation to higher articles in the other column being in overlapping supporting relation to said higher articles, whereby discharge of the articles from either column is restrained by the

lowermost article in either column, and movable coin controlled supporting means carried by said support and engaging below and supporting the lowermost article of either column, said means 5 being movable from a position below the lowermost article in one column to a position below the lowermost article in the other column, discharging an article from the first-mentioned column during such movement, and permitting 10 the articles in both columns to descend upon said movement until supported by the said coin controlled means, said coin controlled means comprising a supporting member having a pair of upwardly extending portions pivoted on said support 15 port above the supporting surface of said member, and said coin controlled means also including means for latching said supporting member in either of its alternative positions, adapted to be unlatched so that the supporting member is 20 then moved by said articles responsive to the deposit of a coin.

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