June 2, 1942. A. MEYERS 2,285,218

AUTOMATIC VENDING DEVICE

Filed Dec. 6, 1940 2 Sheets-Sheet 1

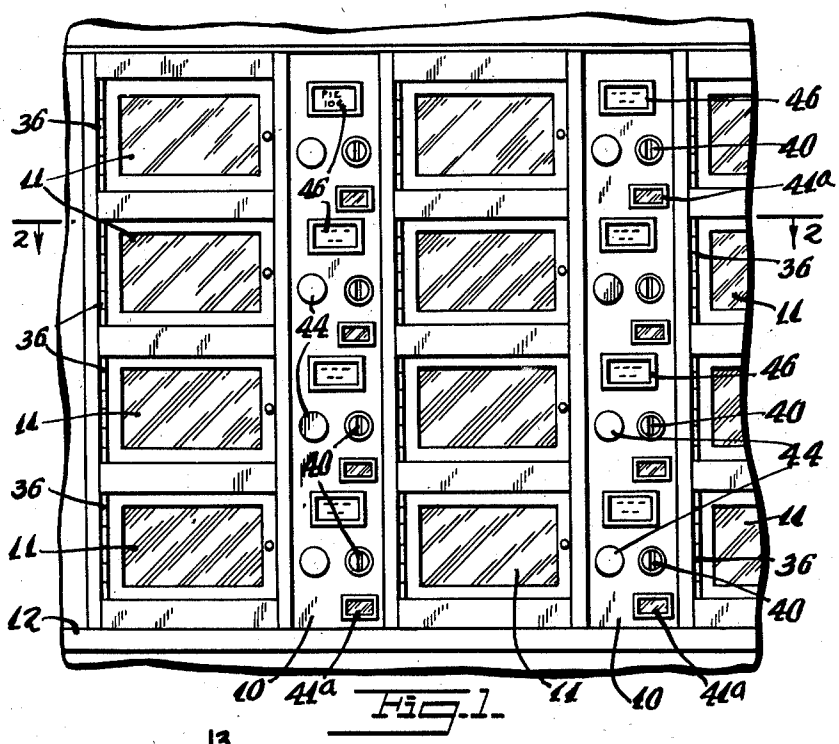


Fig. 1

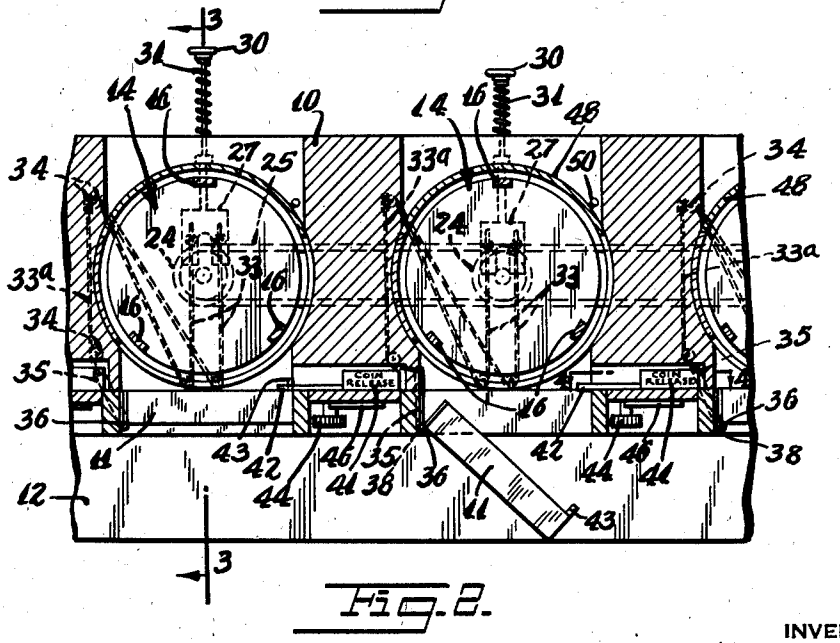


Fig. 2

INVENTOR
Abraham Meyers
BY
ATTORNEY

June 2, 1942. A. MEYERS 2,285,218

AUTOMATIC VENDING DEVICE

Filed Dec. 6, 1940 2 Sheets-Sheet 2

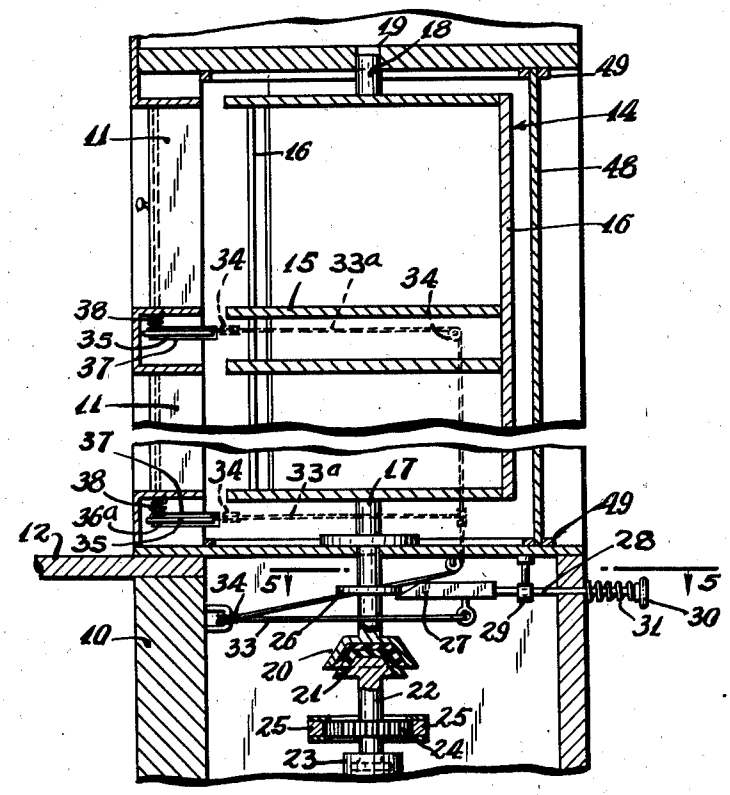


Fig. 3.

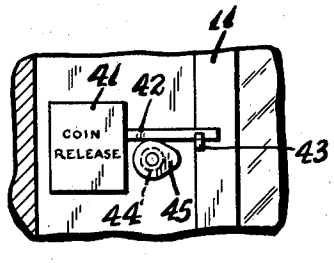


Fig. 4.

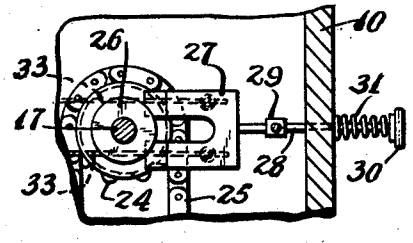


Fig. 5.

INVENTOR
Abraham Meyers
BY
ATTORNEY

Patented June 2, 1942

2,285,218

UNITED STATES PATENT OFFICE

2,285,218

AUTOMATIC VENDING DEVICE

Abraham Meyers, Brooklyn, N. Y.

Application December 6, 1940, Serial No. 368,817

9 Claims. (Cl. 312—35)

This invention relates to new and useful improvements in vending machines for articles, food and the like.

More particularly, the invention proposes to characterize the vending machine by a wall having a plurality of doors arranged in substantially vertical lines, and a turn table behind said wall and having a separate shelf for each door. It is contemplated to provide each door with a coin controlled lock device so that persons desiring to purchase an article displayed on the shelves behind the doors may obtain same.

Still further the invention contemplates to so arrange the turn table that an attendant may supply new wares to the various shelves after a purchase has been made. It is proposed that the attendant be stationed behind the wall.

Still further the invention contemplates an arrangement for displaying the wares on the shelf from all directions. It is proposed to provide means for rotating the turn tables, and it is proposed that each door be provided with a glass panel so that a prospective purchaser may view the articles.

Still further a novel arrangement is contemplated for automatically stopping the turn table from rotating when a door is open so that a customer may remove the purchased article.

Another object of the invention resides in hingedly supporting the doors at one of their sides so that they may swing open in a convenient direction not to interfere with the removal of the purchased articles.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a fragmentary front view of a wall with a plurality of doors and a vending machine arrangement associated therewith and constructed in accordance with this invention.

Fig. 2 is a fragmentary horizontal sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary vertical sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary enlarged sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a fragmentary horizontal sectional view taken on the line 5—5 of Fig. 3.

The vending machine for articles, food and the like, in accordance with this invention, includes a wall 10 provided with a plurality of doors 11 arranged in vertical lines. These doors are located at a convenient height for persons in a restaurant to view. A shelf 12 is mounted on the wall 10 below the doors 11. Turn tables 14 are disposed behind said wall 10, and have a separate shelf 15 for each door 11. Each turn table 14 is provided with a plurality of vertical strips 16 mounted at spaced positions on the edges around the shelves 15 for holding the shelves in a unit. Means is provided for rotatively supporting each turn table 14 and includes a vertical bottom shaft 17. A stud shaft 18 is mounted on the top of each turn table and engages a bearing 19 to assist in rotatively supporting the turn table. The vertical bottom shaft 17 is provided with a top clutch member 20.

Means is provided for rotating the vertical shaft 17 and includes a bottom clutch member 21 engaging the said top clutch member 20. This bottom clutch member 21 is mounted upon a vertical shaft 22 rotatively supported in a bearing 23. A sprocket 24 is mounted on the shaft 22 and is engaged by a driver chain 25. This driver chain extends along the length of the wall, and is connected with some prime mover, not illustrated on the drawings. The arrangement is such that the chain 25 simultaneously drives the bottom clutch members 21 of the various turn tables. When these clutch members 21 are engaged with the top clutch members 20, the turn tables rotate.

Means is provided for lifting each vertical bottom shaft 17 a small distance to disengage the clutch members 20 and 21 during certain times. This means includes a flange 26 on the shaft 17 and engageable by a cam 27 mounted on a plunger rod 28 which is manually operable. The plunger rod 28 is supported through a bearing 29. It has one end projected to the rear of the device. This projecting end is provided with a knob 30. An expansion spring 31 is coaxially arranged on the plunger 28 and acts to normally urge the cam 27 into an inoperative position. The spring 31 urges the plunger outwards. When the plunger rod 28 is forced inwards, the cam 27 will ride beneath the flange 26 lifting the shaft 17 the slight distance.

This device may also be used without rotating the turn tables 14, by stopping the motor, or if it is desired to stop the rotation of certain of the turn tables, the clutch members 20 and 21 may be disconnected in any desired manner.

Means is also provided for operating the lift-

ing means characterized by the cam 27, when any one of the doors 11 of a particular turn table is opened. This means includes cables 33 attached to the cam 27 and extended over a plurality of guiding pulleys 34 mounted on different points on the wall 10. The cable 33 has various branches 33a which connect with arms 35 fixedly mounted coaxially with the doors 11. More specifically, each door 11 is hingedly mounted by a hinge construction 36, at one side. This hinge construction has a projecting stem 36a extending into a portion of the wall 10 beneath the door. The arm 35 is attached upon the stem 36a. The wall 10 adjacent the arm 35 is formed with a recess 37 to give the arm 35 a greater latitude of motion. A spring 38 is coaxially mounted on a stem 36a and acts between the door 11 and the wall 10 for normally urging the door 11 closed.

A coin controlled release device is provided for latching each door 11 closed. Each of these devices includes a coin slot 40 mounted on the wall 10 adjacent the door into which a coin may be dropped. This coin will fall into the body 41 of the coin release device and the coin may be seen from the outside through a transparent member 41a, which may also be covered by a suitable magnifying glass. The coin release device is provided with a projecting arm 42 which normally engages a keeper 43 mounted on the door 11. A knob 44 is mounted upon the wall 10 immediately adjacent the coin slot 40. This knob 44 has a stem portion which extends through the wall, and its inner end is provided with a cam 45 engaging beneath the rod 42. When the coin releases the rod 42, the knob 44 may be turned so that the cam 45 lifts the rod 42 out from the keeper 43. The door 11 may now be moved open.

A small sign 46 is mounted upon the wall 10 adjacent each coin slot 40 giving the number of coins required to be deposited in order to obtain desired foods.

A curved cover 48 is disposed behind each turn table so as to prevent persons to the front of the wall 10 looking through the turn table to the rear of the wall. Each cover 48 is movably mounted on a track system 49 mounted on portions of the wall 10 above and below the top and bottom ends of the turn table 14. Each cover 48 is provided with a handle 50 by which it may be manually moved. The track system 49 is such that an attendant to the rear of the wall may grip the handle 50 and move the cover 48 around to uncover the turn table to him, and simultaneously place the cover 48 in a position across the front portion of the turn table, shutting off the view of persons to the front of the wall.

The operation of the device is as follows:

The drive belt or system 25 is continuously operating, rotating all of the vertical shafts 22 of the various turn tables 14, simultaneously. Normally, each of the turn tables 14 is in a lowered position so that the clutches 20 and 21 thereof engage. The various turn tables thus receive rotation from the shafts 22.

Persons to the front of the wall 10 may inspect the various articles displayed on the shelves 15 of the turn table 14. A purchase may be made by depositing a coin in the slot 40 adjacent the door 11 through which the article is seen. The coin will operate the coin release device 41 for freeing the arm 42 thereof. The purchaser may now turn the knob 44 so that the cam 45 lifts the arm 42 free from the keeper 43. The door 11 may now be pulled open about its hinge 36.

When the door 11 is moved open, the radial arm 35 will pull one of the branch portions 33a of the cable system 33. This causes the cam 27 connected with the cables 33 to move forwards engaging beneath the flange 26 and lifting the shaft 17 and thus the turn table 14. This disengages the clutches 20 and 21 and this turn table stops turning. The purchaser may now fully open the door and if none of the vertical bars 16 of the turn table 14 is in the way, this bar may be gripped and moved to one side or to the other, causing the turn table to slightly turn to a non-obstructive position. The flange 26 of the shaft 17 merely rests on the cam 27. Consequently, the turn table may be manually turned. The merchandise is then removed. The door 11 is released and will be closed by the spring 38. Immediately the cable system 33a, 33 is slackened and the spring 31 will move the cam 27 to its inoperative position, as shown in Fig. 3, which permits the shaft 17 to move downwards reengaging the clutches 20 and 21. The turn table 14 now continues its rotations. A customer may select and obtain additional articles from additional shelves of the various turn tables by a repetition of the operation above.

An attendant may refill the shelves of the turn tables by manually forcing the knob 30 of any particular turn table inwards. This moves the cam 27 beneath the flange 26 lifting the shaft 17 which stops rotation of the turn table. The cover 48 is then moved to an open position and the shelves may be replenished with merchandise.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turn table behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened.

2. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said turntable comprising a plurality of circular shelf portions one for each of said doors, strips connected between edge portions of the shelf portions, and a top

shaft mounted on the top of the turntable and rotatively supported.

3. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, means for operating said lifting means when one of said doors is opened, said doors being hingedly mounted at one of their sides.

4. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said means for rotating said vertical shaft comprising a stud shaft rotatively supported and provided with said bottom clutch member which engages said top clutch member, a sprocket on said stud shaft, and a drive chain engaging said sprocket.

5. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said means for lifting said vertical shaft comprising a flange on the vertical shaft, a cam engageable beneath said flange for lifting the same.

6. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said means for lifting said vertical shaft comprising a flange on the vertical shaft, a cam engageable beneath said flange for lifting the same, and manual means for operating said cam.

7. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said means for lifting said vertical shaft comprising a flange on the vertical shaft, a cam engageable beneath said flange for lifting the same, and manual means for operating said cam, including a plunger connected with the cam and a manually operable knob on the plunger.

8. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said means for lifting said vertical shaft comprising a flange on the vertical shaft, a cam engageable beneath said flange for lifting the same, and manual means for operating said cam, including a plunger connected with the cam and a manually operable knob on the plunger, and means for resiliently urging said plunger into a position in which said cam is inoperative.

9. A vending machine for articles, food and the like, comprising a wall having a plurality of doors in a vertical line, a turntable behind said wall and having a separate shelf portion for each door, a vertical shaft having its top end mounted on the bottom of said turntable and extended downwards for rotatively supporting said turntable, a top clutch member mounted on the bottom end of said vertical shaft, means for rotating said vertical shaft including a bottom clutch member engaging said top clutch member, means for lifting said vertical shaft a small distance to disengage said clutch members, and means for operating said lifting means when one of said doors is opened, said means for lifting said vertical shaft comprising a flange on the vertical shaft, a cam engageable beneath said flange for lifting the same, said means for operating the lifting means when one of the doors is opened includes a cable system connecting with said cam and with radial arms connected with the doors to move when any door is opened.

ABRAHAM MEYERS.