ABSTRACT

Beverage containers are dispensed selectively from a plurality of dispensing receptacles by actuation of a single actuator which is common to all of the receptacles. Each receptacle has a mouth at the top thereof and a stop spaced below the mouth less than the height of a container. Resilient means urges a stack of containers upwardly in each of the receptacles against the stop therein. The common actuator is selectively engageable with the uppermost container in each of the receptacles to disengage that container from its stop. The stack then moves upward to engage the next container in the stack with the stop. Thus, a single actuator serves all of the dispensing receptacles in a group.

10 Claims, 8 Drawing Figures
PLURAL STACK DISPENSER HAVING COMMON ACTUATION FOR STACKS

BACKGROUND OF THE INVENTION

A container dispenser for dispensing cans and other containers of soft drinks, mixes and the like is described and claimed in a copending application Ser. No. 30,473 filed on Apr. 21, 1970 by Bruce F. House and Jack A. Morrow. In this dispenser, a stack of containers in a receptacle is urged upward against a stop, and the uppermost container is selectively dispensed by operation of an actuator to disengage that container from the stop. The stack then moves upward to engage the next container in the stack with the stop. A dispenser of this type has many advantages. For example, it may be provided in a beverage dispensing cart for use on commercial airplanes where it requires relatively little space and yet reliably dispenses beverage containers as they are needed. It is possible to place a can or other container which has been partially emptied back into the dispenser for temporary storage. When this is done, the actuator cannot dispense another container until the stored container has been removed. This is a safety feature of merit.

A drawback of the dispenser of the copending application is that each dispensing receptacle has its own actuator, and this wastes space and may lead to confusion where receptacles are grouped together.

SUMMARY OF THE INVENTION

The present invention preserves some of the structural features and advantages of the container dispenser described in the copending application identified above, and improves that dispenser by providing a common actuator which serves several different dispensing receptacles. In accordance with the invention, a group of receptacles are arranged about a common vertical axis, each of the receptacles having a stack of containers urged upwardly against a stop spaced below the mouth of the receptacle. The common actuator is mounted centrally within the group of receptacles, and it is shiftable toward each of the receptacles. The actuator has a first portion which is engageable with the uppermost container in each receptacle to dispense that container. Preferably, the actuator also has a second portion spaced above the first portion engageable with an extra container temporarily stored in any one of the receptacles above the stop thereby to prevent the actuator from disengaging a container from its stop while there is an extra container temporarily stored in the receptacle above the stop.

Accordingly, it is an object of the present invention to dispense containers from any one of a plurality of receptacles by selective actuation of a single actuator which is common to all of the receptacles.

Another object of the invention is to incorporate an actuator disabling feature into a container dispenser wherein a single actuator dispenses containers from a group of receptacles.

Among the other objects of this invention are to provide a container dispenser having plural dispensing receptacles with a common actuator and a construction which is reliable in operation, economical, suitable for use in a beverage cart, and capable of being mass produced.

Other objects of this invention will appear from the following description and the appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational end view of a beverage cart in which a container dispenser in accordance with the invention is provided;

FIG. 2 is a top plan view of the beverage cart;

FIG. 3 is a vertical, sectional view taken along line 3—3 of FIG. 2 through two of a group of dispensing receptacles;

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FIG. 4 is a horizontal, sectional view taken along the line 4—4 of FIG. 3 looking downward in the direction of the arrows;

FIG. 5 is a horizontal, sectional view taken along line 5—5 of FIG. 3 looking downward in the direction of the arrows;

FIG. 6 is a fragmentary, vertical, sectional view similar to FIG. 3, but showing an actuated position of the actuator;

FIG. 7 is a partly sectional and partly broken-away view of just the actuator assembly; and

FIG. 8 is a vertical, sectional view similar to FIG. 3 and showing a container temporarily stored at the mouth of one of the dispensing receptacles.

Before describing the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

AS SHOWN ON THE DRAWINGS

The beverage cart 10 shown in FIGS. 1 and 2 includes two container dispensers 12 and 14 in accordance with one embodiment of the invention, and also includes beverage bottle dispensers 16, 18 and 20 as well as glass dispensers 22 and 24 which are not part of the present invention. The cart 10 is designed for use on airliners by a hostess who sells beverages from the cart. The container dispensers 12 and 14 are particularly useful for storing and dispensing cans of soft drinks, mixes and the like. When the hostess wishes to dispense a can from one of the dispensers 12 and 14, she merely presses either the actuator 26 or the actuator 28, and a can pops up from the mouth of one of the dispensing receptacles. There are four dispensing receptacles 30, 31, 32, and 33 in the dispenser 12, and similarly there are four dispensing receptacles 34, 35, 36, and 37 in the dispenser 14. The actuator 26 serves all of the receptacles 30-33, and the actuator 28 serves all of the receptacles 34-37. To select a particular dispensing receptacle and dispense a can from that particular receptacle, the hostess merely pushes the actuator toward that receptacle, as will be explained further.

Referring to FIGS. 3 through 8, it may be seen that the four vertically elongated receptacles 30, 31, 32 and 33 of the dispenser 12 are defined by vertical guide members all of which are identified by the reference numeral 38. These guide members are substantially identical and extend between and are secured to a top plate 40 and a bottom plate 42. The guide members 38 are so shaped and arranged as to define four parallel tubes which are the receptacles 30, 31, 32 and 33.

It may be noted that the receptacles 30-33 are arranged about a common, central, vertical axis at which an actuator arm 44 is located. The actuator arm 44 is within a square tube 46 which extends from near the top of the dispenser to the bottom thereof. The actuator arm 44 extends through the bottom of the tube 46 at an opening 48, and a pin is provided at 50 near the bottom end of the actuator arm to keep the actuator from being pulled upwardly from the tube.

A block 52, which may be made of plastic material, is affixed to the upper portion of the actuator arm 44 as by a pin 54, and this block 52 rests on the top plate 40, thus keeping the actuator arm from being displaced downwardly. The actuator arm can be shifted radially from its axis in any direction, and particularly can be shifted toward any one of the receptacles as indicated by the arrows in FIGS. 4 and 5. The block 52 may be considered as a portion of the actuator arm, and may be made integral with the actuator arm.

Spaced below the block 52, there is a container engaging portion 56 of the actuator arm. The container engaging portion 56 has four projections 57, 58, 59 and 60 which point respectively toward the receptacles 30, 31, 32 and 33. These projections serve to push a can out from under a stop when the
Further down the actuator arm 44, there are two springs 62 and 64 which extend through the arm 44 and have end portions which bear against the inner walls of the tube 46 tending to keep the actuator arm 44 centered and serving to return the actuator arm to a centered position after it has been operated. A stack of containers, such as the cans 66, is provided in each of the receptacles 30-33. The uppermost can in each stack is urged against a stop in its respective receptacle by resilient means which consists of springs such as coil springs in the bottom of each receptacle. Two such coil springs 68 and 70 are visible, for example, in FIGS. 3 and 8. Each receptacle has an open mouth at its upper end, and the stops are spaced below this open mouth by a distance less than the height of a can 66 sufficient to receive part of an extra can in the receptacle above the stop. In this embodiment, the stops are formed by the lower edges of a square tube 72, there being one lower edge of the tube 72 projecting into each of the receptacles 30-33. Two stop edges 74 and 76 are shown, for example, in FIGS. 3 and 6. The distance between the mouth of a receptacle and a stop such as 74 may be about two-thirds of the height of a container.

The uppermost container in each receptacle is urged under the stops just referred to by a spring. The four springs 78, 79, 80 and 81 are partially visible in FIG. 4, and two of the springs 78 and 80 are more clearly visible in FIGS. 3 and 6. The spring 78 is fastened to the guide member 38 by a rivet 82, and spring 80 is fastened to another guide member 38 by a rivet 84. It may be seen that the upper ends of the springs 78 and 80 are free to urge one of the containers 66 under the respective stop 74, 76.

As previously mentioned, the uppermost container in each of the stacks is urged against the corresponding stop such as stop 74 or 76 by one of the springs such as springs 68 and 70. The uppermost container is retained under the stop by one of the springs 78, 79, 80 and 81. The operation of the actuating arm 44 to dispense a container is illustrated particularly in FIG. 6. It may be seen that the actuator arm 44 has been pushed upward to the uppermost container 66 in the receptacle 30, and the projection 57 has pushed the container 66 out from under the stop 74. The spring 68 then moves the stack of containers upwardly until the next lower container engages on the stop 74, and this leaves the top of the uppermost container above the mouth of the receptacle 30 so that it can be removed from the receptacle. The actuator arm 44 can be pushed toward any of the other receptacles in exactly the same manner to dispense a container from the selected receptacle. One of the container-engaging portions 57, 58, 59 and 60 will engage the appropriate container and push it out from under its stop so that the stack moves up until the next container catches on the stop. A container 66' is shown in a dispensed condition in dotted lines in FIGS. 3.

FIG. 8 illustrates that it is possible to place a partially used container back into a receptacle such as receptacle 30. It may be seen that the container 66' rests on the container 66 above the stop 74 with about two-thirds of the container 66' within the receptacle 30. The upper part of the container 66' projects above the mouth of receptacle 30 and is located next to the block 52. The block 52 extends laterally so that it almost touches container 66'. The block 52 would engage container 66' if the actuator were pushed toward container 66' and prevent the container-engaging portion 57 from disengaging container 66 from the stop 74. Thus, so long as container 66' remains at the top of receptacle 30, the actuator cannot dispense another container.

The provision of a common actuator for several different dispensing receptacles prevents duplication, conserves space, and simplifies the dispensing mechanism. The advantages of a dispenser which dispenses a container only upon operation of an actuator are maintained. It is also possible to temporarily store a partially emptied container in any one or all of the receptacles, and the actuator will not dispense another container from the receptacle while a partially empty container is stored.

Having thus described my invention, I claim:

1. A container dispenser comprising, a plurality of vertically elongated container receptacles arranged about a common vertical axis and each having an open mouth at the top thereof and surfaces for receiving and guiding a vertical stack of beverage containers, resilient means for each of said receptacles for urging a stack of containers upwardly therein toward the open mouth of the receptacle, a stop in each of said receptacles spaced downwardly from the mouth thereof less than the height of a container for holding the stack of containers therein, a single actuating means mounted at the common vertical axis for said receptacles and shiftable selectively toward each of said receptacles, said actuator means having a portion for engaging the uppermost container in the stack in each of said receptacles to push that container away from the respective stop, said resilient means then pushing the stack upwardly until the next container catches on said stop, thereby dispensing a container from the mouth of the receptacle.

2. A container dispenser comprising, a plurality of receptacles each elongated vertically to receive a stack of beverage containers therein, means supporting said receptacles about a common vertical axis, each of said receptacles having a mouth at the top thereof and a stop spaced below said mouth less than the height of a container but sufficient to receive part of a container above said stop, resilient means for said each of said receptacles toward the bottom thereof for urging a stack of containers upwardly in each of said receptacles against said stop thereof, a single common actuator arm for said receptacles, said actuator arm being mounted at said axis to shift from said axis toward each of said receptacles, said arm having a projection engageable with the uppermost container from the respective stop and allow said resilient means to push the stack upwardly until the next container engages said stop, thereby dispensing a container from the mouth of the receptacle.

3. A container dispenser comprising, a plurality of vertically elongated container receptacles arranged about a common center and each having an open mouth at the top thereof and surfaces for receiving and guiding a vertical stack of beverage containers, resilient means for each of said receptacles for urging a stack of containers upwardly therein toward the open mouth of the receptacle, a stop in each of said receptacles spaced downwardly from the mouth thereof less than the height of a container for holding the stack of containers therein, a single common actuating means mounted at the common center for said receptacles and shiftable selectively toward each of said receptacles, said actuating means having a first portion engageable with the uppermost container in the stack in each of said receptacles to push that container away from the respective stop to dispense that container, said resilient means then pushing the stack upwardly until the next container catches on said stop, and said actuating means having a second portion engageable with a container temporarily stored in one of said receptacles above said stop to prevent said actuating means from disengaging a container from said stop.

4. A container dispenser comprising, a plurality of receptacles each elongated vertically to receive a stack of beverage containers therein, means supporting said receptacles about a common vertical axis, each of said receptacles having a mouth at the top thereof and a stop spaced below said mouth less than the height of a container but sufficient to receive part of a container above said stop, resilient means for each of said receptacles toward the bottom thereof for urging a stack of containers upwardly in each of said receptacles against said stop thereof, a common actuator arm for said receptacles, said actuator arm being mounted at said axis to shift from said axis toward each of said receptacles, said arm having a first portion engageable with the uppermost container in each of said receptacles to disengage that container from the respective
stop and allow said resilient means to move the stack upwardly until the next container engages said stop, and said arm having a second portion above said first portion engageable with an extra container temporarily stored in any one of said receptacles above the stop therein to prevent said arm from disengaging a container from said stop while said extra container is temporarily stored in said receptacle.

5. The container dispenser as claimed in claim 4 in which said actuator arm comprises a rod.

6. The container dispenser as claimed in claim 5 in which said rod has a pivot mounting at the lower end thereof.

7. The container dispenser as claimed in claim 6 in which said first and second container engaging portions of said rod comprise lateral projections.

8. The container dispenser as claimed in claim 7 in which said second container engaging portion is in the form of a circular structure projecting laterally from said rod.

9. The container dispenser as claimed in claim 4 in which each of said receptacles has further resilient means urging a container sideways under the respective stop.

10. The container dispenser as claimed in claim 9 in which each of said further resilient means is positioned diametrically across from one of said stops.

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