

# United States Patent

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Brill et al.

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[54] DOUBLE SERVICE BEVERAGE TOWER

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[51] Int. Cl. .... **B67D 5/60**

[58] Field of Search ..... 141/369, 370, 373, 375, 141/165, 312; 222/185, 144.5, 129.1, 129.2, 129.3, 129.4

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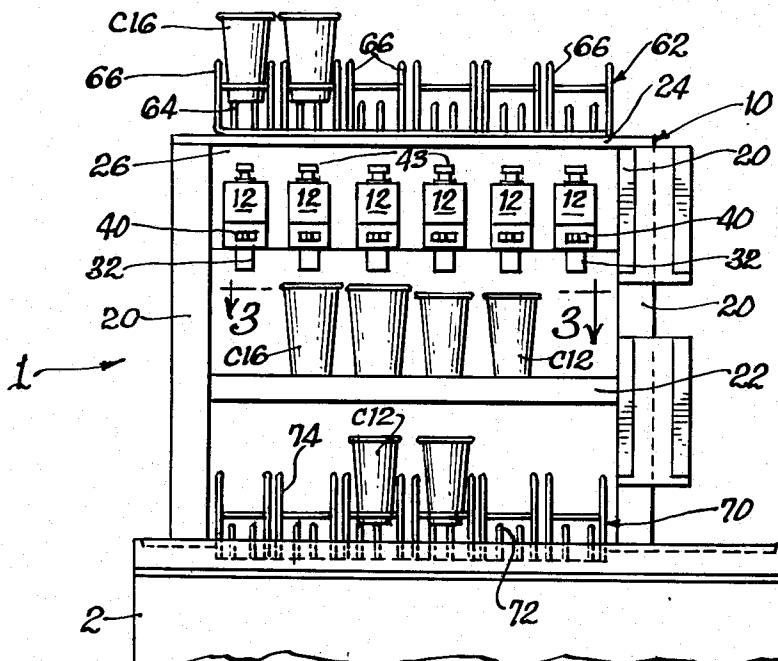
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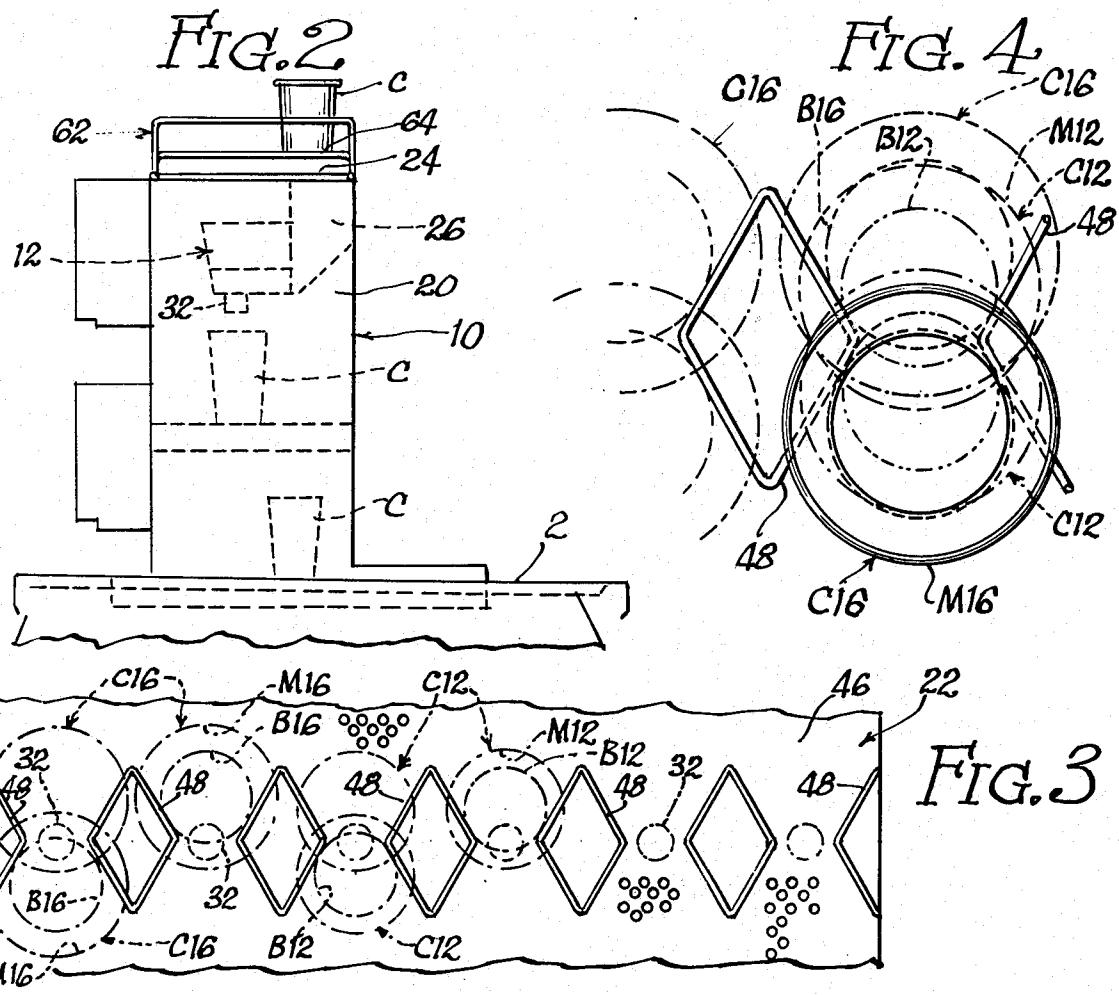
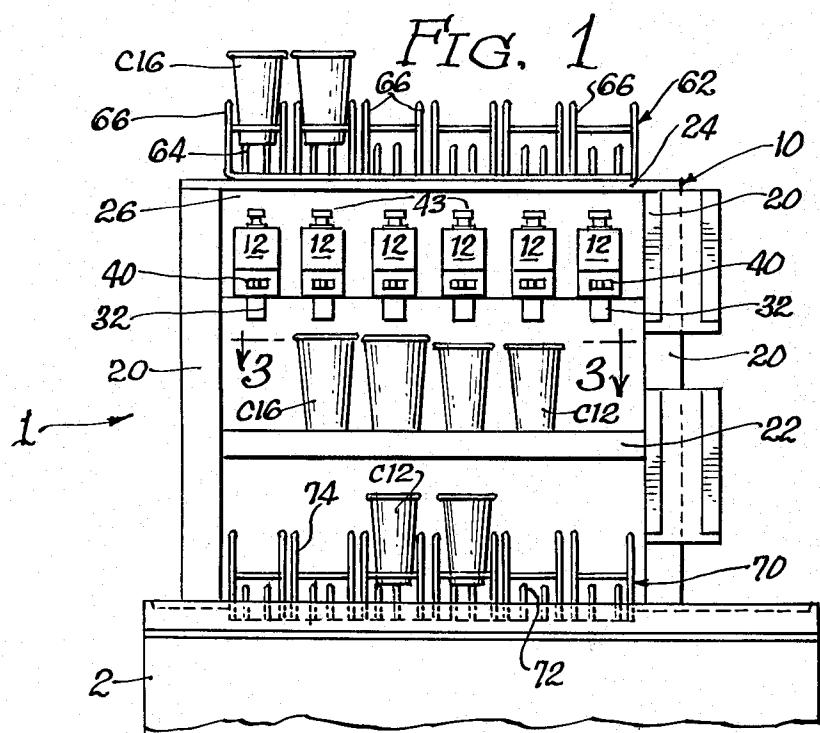
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## [57] ABSTRACT

A double service beverage tower having a plurality of adjacent beverage faucets forming a single row of faucets. Each faucet has a single discharge nozzle. The tower is operable from the front or from the back by an operator stationed at the front or at the back. Each faucet is provided with stops for registering containers with the faucet nozzle whether containers are inserted from the front or from the back. Controls operable from the rear and separate controls operable from the front enable operators to fill the containers from the nozzle of a faucet either from the front or from the back. The controls include switches for filling different sized containers with different predetermined quantities of beverage automatically and for topping and filling the containers manually. Racks for storing filled containers in alignment with the faucets are provided.

9 Claims, 8 Drawing Figures





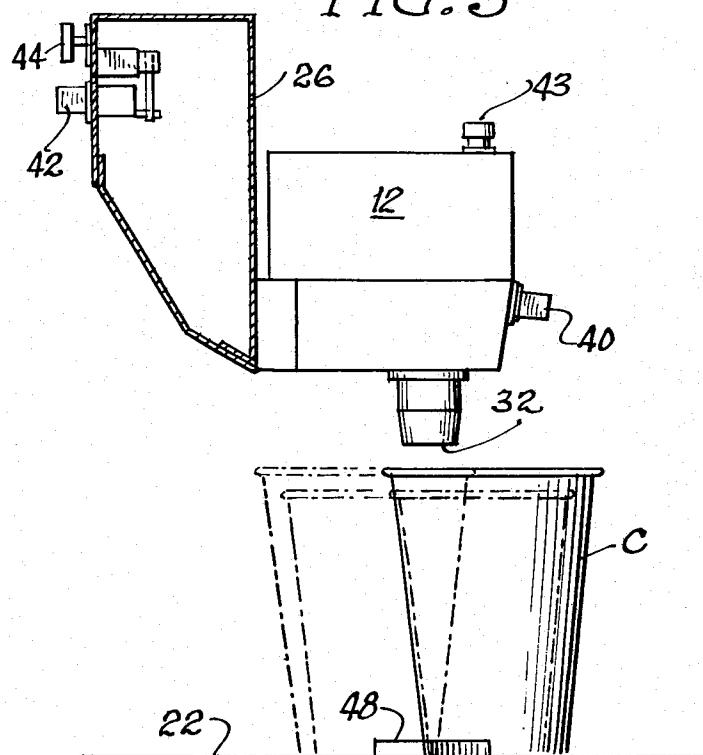


FIG. 6

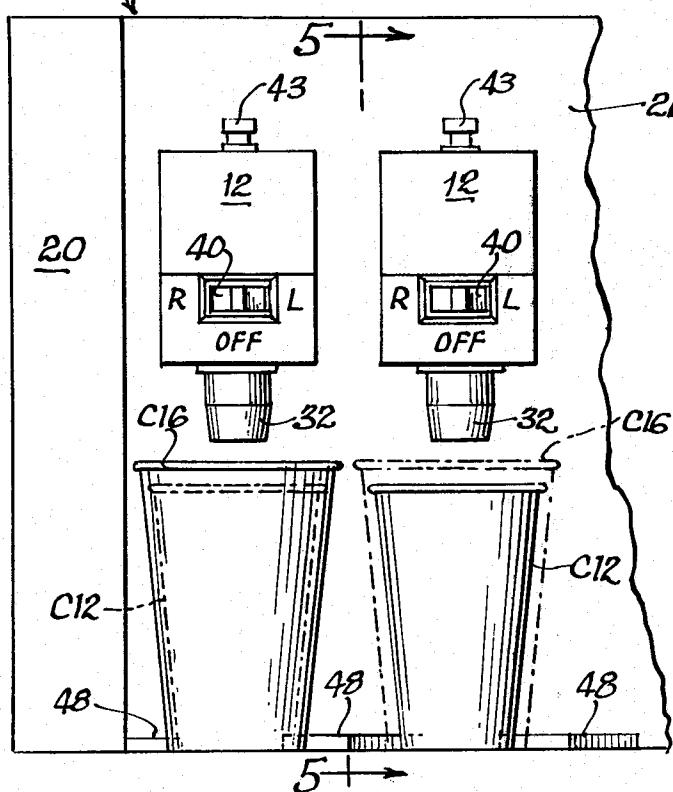
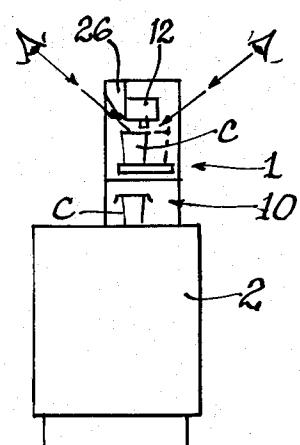


Fig. 7



## DOUBLE SERVICE BEVERAGE TOWER

This invention relates to a double service beverage tower adapted for filling beverage containers from a single beverage faucet from each of the front and back of the tower.

A wide variety of beverage towers have been designed and used in the past. Most are operable from one side only, although some have been suggested which are operable both from the front and the back. That feature has been found to be both convenient and efficient, especially in the fast food industry where such beverage towers are most often employed. The dual-sided beverage tower permits operators or beverage vendors working on either the front or back of the tower to utilize the same beverage facilities for filling beverage containers or cups. This advantage not only prevents wasted time, but it also saves space and the cost which would otherwise be necessary to provide separate beverage towers for each operator.

Previous dual-sided beverage towers have not proved entirely satisfactory and they have been expensive because, to enable operators to fill from the front and from the back, such towers have necessarily been provided with double sets of beverage faucets and nozzles, with one set located at the front and the other set at the back of the tower. That is a single tower in name only since the structure is, in effect, two sets of beverage dispensers sharing a common framework. That type of tower then is encumbered by many of other related disadvantages, such as the necessity for the presence of separate pairs of faucets, nozzles, supply lines and drains, etc.

A beverage tower in accordance with this invention not only preserves and provides the basic advantages of a dual-sided tower but eliminates many of the disadvantages of prior art towers. In one of its aspects, a double service beverage tower of this invention comprises a tower support having a front, a back and two sides and a plurality of adjacent beverage faucets forming a single row of faucets extending between the sides for dispensing a plurality of beverages. Each of the faucets provides only a single discharge nozzle. The discharge nozzles are spaced apart laterally and are disposed in a single row between said sides. Means are provided on the tower support for guiding beverage containers from the front and from the back into positions beneath each of the nozzles. Also, manually operable control means at the front of the tower and separate control means at the back of the tower are provided for actuating each of the faucets so that the beverage containers may be independently filled by operators at the back or at the front of the tower.

The beverage tower is desirably supported on a table or cabinet so as to be easily accessible to the operators from the front and the back. Fixed to the upper frame member of the tower support is a depending housing section upon which the beverage faucets are mounted. Each faucet is provided with a single discharge nozzle. At both the front and back of the tower separate control means are provided which permit operators located at the front and the back of the tower to initiate beverage discharge. In a preferred embodiment, the control means comprise two sets of switches including a momentary three-position switch and a topping switch for each set. The manually operable momentary three-position switch permits an operator to select one

of two predetermined quantities of beverage for automatic discharge into a container. The topping switch, which is also manually operable, permits an operator to manually fill or finish the filling of a container with the beverage to be dispensed, a feature which is often helpful such as when uneven ice fill requires the container to be "topped-off."

Another feature of this invention consists of guide means for engaging, guiding and stopping beverage containers as they are moved inwardly from the front or rear of the tower. The guide means comprise a base located beneath the faucets upon which the containers can be supported and moved, and locator means above or extending upwardly from the base support surface for positioning and stopping the containers so that a container is properly positioned beneath the nozzle. This feature permits insertion of the container into beverage receiving relationship with the nozzle without requiring the operator visually to observe the registration of the cup with the discharge nozzle, thereby eliminating the need for two sets of visually observable nozzles, hence making it possible to use a single faucet for filling containers inserted from the front and the back of a beverage tower.

With only one set of beverage faucets, the tower according to this invention requires only one set of beverage supply lines preferably located in side frame members and a single drain located in the base. Desirably, the beverage tower is also provided with one or more racks for storing beverage containers which are located above the upper frame member and below the base. In this manner, a double service beverage tower is provided which is substantially more advantageous than prior art towers.

Further objects and advantages of this invention will become apparent from the following description and drawings of which:

FIG. 1 is a rear elevational view of a double service beverage tower of this invention;

FIG. 2 is a side elevational view of the beverage tower of FIG. 1;

FIG. 3 is a view taken substantially along the line 3-3 of FIG. 1;

FIG. 4 is an enlargement of a portion of FIG. 3;

FIG. 5 is a cross-sectional view taken substantially along the line 5-5 of FIG. 6;

FIG. 6 is an enlarged view of a portion of FIG. 1.

FIG. 7 is a side elevational view of the beverage tower of FIG. 1 supported on a cabinet; and

FIG. 8 is a schematic circuit diagram.

Referring now to the drawings, a presently preferred embodiment of the double service beverage tower 1 of this invention is shown supported on a suitable table or cabinet 2. Beverage tower 1 includes a frame assembly or tower support 10 which mounts a plurality of laterally adjacent beverage faucets 12 and suitable controls for the faucets.

The tower support comprises a pair of side frame members 20, a base frame member 22 and an upper frame member 24. Upper frame member 24 includes a depending housing section 26 upon which the plurality of the beverage faucets 12 is mounted. Beverage faucets 12 are disposed in a single row extending between side members 20 and are positioned between the front and back of the tower. Each beverage faucet is provided with a single discharge nozzle 32, so that the discharge nozzles are laterally spaced and are positioned

in a single row. Preferably, each beverage faucet 12 is releasably connected to the depending housing section 26, so that it may be removed in the event that such becomes necessary for repair or the like.

Each beverage faucet 12 is operable to cause a beverage to be discharged through its associated nozzle 32. Each faucet is under the control of a suitable, manually operable multi-position switch such as a three-position momentary switch 40 at the rear of the tower (as seen in FIGS. 1 and 6) as well as a second manually operable three-position momentary switch 42 mounted at the front of the tower (see FIG. 5). Each pair of switches 40 and 42 is operable to actuate one of the faucets so that beverage containers C positioned below nozzle 32 may be automatically filled with predetermined quantities of beverage either by an operator standing at the front (who then operates a switch 42) or by an operator standing at the back of the tower (who then operates a switch 40). Each switch 40 and 42 permits the selection of one of two predetermined quantities of beverage to be dispensed by selectively moving switches 40 or 42 from their central inactive positions either to a right-hand or a left-hand actuating position. In the embodiment illustrated, the left-hand position is for a regular R drink and the right-hand position is for a large L size drink, such as 12 and 16 ounce drinks, respectively.

In the event that the quantity of beverage automatically dispensed in response to the operation of switches 40 and 42 is insufficient, such as when a smaller quantity of ice has initially been added to the container, topping switches are provided.

Topping switches 43 are provided at the rear of the beverage tower for each faucet 12 and are adapted to be operated by the operator who is stationed to manipulate the three-position switch 40. Topping switch 43 is manual in that beverage is dispensed through faucet nozzle 32 for only as long as the topping switch 43 is held. When it is released, the flow of beverage will stop. A second topping switch 44 for each faucet 12 is provided at the front of the beverage tower adjacent the three-position switch 42. Switches 44 are operable in the same manner as are topping switches 43. Of course, topping switches 43 and 44 may be used to fill containers with a beverage in lieu of the automatic three-position switches 40 and 42.

One of the difficulties attendant the use of a single faucet nozzle for filling beverage containers from the front and from the back of a beverage tower is the difficulty in seeing the end of the discharge nozzles thereby to make certain that the mouth of a container C which is to receive the beverage is properly positioned beneath the nozzle (See FIG. 7). In accordance with this invention, means for guiding and stopping beverage containers in positions to receive beverages from a nozzle, whether the containers are introduced for filling by an operator from the front or from the rear of the tower, are provided.

To that end, base frame member 22 provides a support surface which in the embodiment illustrated is an upper apertured drain surface 46 upon which containers are adapted to be supported and slid inwardly, either from the front or from the rear of the beverage tower 1.

As best seen in FIG. 3, container locators are provided to engage containers properly to locate them with respect to the faucets and the discharge nozzles.

These take the form of stops 48 which, in the embodiment shown, are supported on and extend upwardly from drain surface 46. Stops 48 are laterally spaced from each other in a single row between side frame members 20 and laterally spaced from the vertical projections of the nozzles 32. Each of the stops 48 is generally diamond shaped, except for those at the very edges where the stops are approximately half of a diamond. Desirably, the stops 48 are formed from flat wire approximately  $\frac{3}{8}$  inch high by about  $1/16$  inch wide.

When a container is moved inwardly from either the front or the rear of the beverage tower 1, it is guided along the drain surface 46 to a position approximately below the particular beverage faucet from which it is desired to fill the container. The container C continues to be guided and moved inwardly until it engages the surfaces of a pair of confronting stops 48. At that time the beverage container can slide inwardly no longer. Once that occurs, the operator can be certain that the mouth of the beverage container is properly positioned to receive the beverage from associated nozzle 32 without spillage over the side edge of the mouth of the container.

Desirably, stops 48 are positioned so that with appropriately configured 12-ounce and 16-ounce containers they will intercept and locate the container bases with respect to the associated nozzles so that both 12-ounce and 16-ounce containers may be properly filled without spillage.

In FIG. 3, the position of the overlying nozzles 32 is shown in dotted lines. Suitable 12-ounce and 16-ounce containers are shown as being positioned ready to be filled by associated spouts. It is seen that 16-ounce containers C16 have their bases B16 positioned by adjacent stops 48 so that their mouths M16 are positioned to receive beverage from beverage nozzles 32. Similarly, 12-ounce containers C12 are shown with their bases B12 in engagement with stops 48 positioned so that beverages from nozzles 32 will be dispensed within the perimeter of mouths M12 and without spillage.

Although diamond shaped stops 48 are preferred, other stops may be used which serve to engage containers C to position them relative to dispensing nozzles so that the liquid dispensed will be deposited in the containers.

The stops are of advantage in that they facilitate the insertion of cups both from the front and the back of the beverage tower to locate them properly with respect to a single faucet nozzle so that beverage containers may be filled both from the front and the back from a single nozzle and from a single faucet. However, even if a pair of faucets is to be used, the locating means of this invention are of advantage to insure that the beverage to be dispensed does not miss the mouth of the cup and therefore is not wasted. In the event that there is spillage or dripping or the like, liquid may pass through drain surface 46 into a trough positioned therebelow from which liquid may be drained by a drainage tube (not shown).

Desirably, beverage is brought to the faucet 12 through suitable supply lines such as hoses which are located within side frame members 20 and which lead to housing section 26. The supply lines terminate at the faucets 12. Within each faucet 12 a solenoid operated valve 54 of conventional construction for regulating the flow of water (or carbonated water if the beverage is to be a carbonated beverage) and a solenoid oper-

ated valve 56 of conventional construction for regulating the flow of beverage syrup through a nozzle 32 are provided. The valve can be operated by any one of the four switches provided for each faucet 12, namely, three-position switches 40, 42 and topping switches 43, 44, for discharging either preselected quantities automatically or for discharging manually via topping switches 43, 44. Selection of switch position R, indicating a regular size drink, causes an electronic control or timer 58 (preferably located within the faucet housing section 26) which is connected to a power source 60, to activate solenoid valves 54 and 56, which holds the valves open for a predetermined time period which is sufficient suitably to fill a regular size container with beverage. Similarly, selection of switch position L, indicating a large size drink, causes timer 58 to activate the solenoid valves for a predetermined time suitably to fill a large size container. Upon completion of a filling period, the valves 54, 56 automatically are closed and the beverage discharge ceases.

In their preferred form, push-button topping switches 43 and 44 simply activate the soleoid valves 54 and 56 for the time period during which the switches are depressed. Release of switch 43 or 44 closes the valves, thereby allowing an operator to discharge any quantity of beverage desired. Thus, the parallel sets of switches for each faucet 12, one set at the front and one set at the rear of tower 1, enable an operator at either the front or the rear of tower 1 to utilize a single faucet and nozzle.

The beverage tower 1 may desirably be provided with container dispensers and lid dispensers secured thereto. FIGS. 1 and 2 illustrate typical lid dispensing racks mounted to one of the side frame members 20.

To provide for the temporary storage of filled beverage containers, such as by an operator working at the rear of the beverage tower 1 and to prefill beverage containers for use by a server serving customers from the front of the beverage tower, suitable rack means defining guide channels in line with each faucet are provided. By positioning guide channels in line with each faucet, easy identification of the particular beverage is readily provided for the server.

In the embodiment illustrated, the rack means comprises an upper storage rack 62 mounted atop upper frame member 24. Rack 62 is suitably formed of wire and comprises a base 64 and upwardly extending side arms 66 adapted to slidably receive, to support and to guide beverage containers. A similar storage rack 70 providing a base support 72 and side arms 74 for each of a plurality of channels, one for each of the faucets, is provided below base frame member 22. Desirably, the upper storage rack 62 may be used for 16-ounce containers and the lower storage rack 70 for 12-ounce containers, thereby to separate them for subsequent pickup and use, as by servers.

The operation of beverage tower 1 is exceedingly simple and convenient. A beverage tower operator may be stationed at either the front or back of tower 1 and be ready to accept or fill a customer's order. When the desired beverage flavor and container size is indicated, the operator obtains an empty container C from a storage rack. Without taking time to visually insure that the container is placed under nozzle 32, the operator pushes container C along drain surface 46 until the container is forcibly stopped between stops 48. At this point the operator is assured that the container is prop-

erly positioned to receive the beverage. The operator then operates the momentary three-position switch 40, thereby automatically filling the container to a prescribed level. If the operator desires to add just a bit more beverage to the container, he has only to press topping switch 43 to manually top off the container. Similarly, an operator located at the back of tower 1 may insert a container and regulate the beverage discharge with switches 42 and 44. The container is then ready to be capped with a lid from the lid holder and placed in storage rack 62 or 70 until the remainder of the customer's order is filled. Since the entire operation may be equally accomplished from either the front or the back of beverage tower 1, orders may be filled with exceptional ease, efficiency and dispatch.

Although the invention has been described primarily in terms of a beverage tower, it is apparent that the construction is adaptable for use with soft ice cream, custard, pudding or other similar food products which may be distributed into a container from a dispenser. The features and advantages of the beverage tower are equally applicable to a food dispenser.

Although only one embodiment of this invention has been described and illustrated, it will be clear from the foregoing specification and drawings that modifications may be made without departing from the spirit and scope of this invention. Accordingly, the invention disclosed herein is intended to be limited only as may be required by the claims.

30. What is claimed is:

1. A double service beverage tower for filling beverage containers from a single beverage faucet from each of the front and back of said tower, comprising: a tower support having a front, a back and two sides, a plurality of adjacent beverage faucets forming a single row of faucets extending between said sides for dispensing a plurality of beverages, each faucet providing only a single discharge nozzle, said discharge nozzles being spaced apart laterally and forming a single row between said sides, means on said support for guiding beverage containers from said front and from said back into positions beneath each of said nozzles and, for each said faucet, manually operable control means at the front of said tower and separate manually operable control means at the back of said tower for actuating said faucet so that said beverage containers may be independently filled by operators from the back and from the front of said tower through said faucet nozzle.

2. A double service beverage tower in accordance with claim 1 wherein each of said control means comprises a switch for dispensing a predetermined quantity of beverage and a switch for manually controlling the quantity of beverage to be dispensed from each said faucet nozzle.

3. A double service beverage tower in accordance with claim 1 wherein said guiding means comprise locator means mounted on said tower support for contacting a beverage container and for stopping it in a position beneath said nozzle.

4. A double service beverage tower in accordance with claim 3 wherein said locator means is positioned to contact said beverage container in its lower regions and to stop it in a position beneath said nozzle.

5. A double service beverage tower in accordance with claim 3 wherein said guiding means further comprises a base beneath said faucets and in which said locator means are on and extend upwardly from said

base, said locator means comprising a pair of stop members each laterally spaced from the vertical projections of said nozzles, said stop members being positioned to engage, guide and stop the bases of beverage containers as they are moved inwardly from the front and from the rear of said tower along said base.

6. A double service beverage tower in accordance with claim 2 wherein each of said switches for dispensing predetermined quantities is operable automatically to cause one of two predetermined quantities of beverage to be dispensed from each said nozzle.

7. A double service beverage tower in accordance with claim 1, and further comprising rack means defining channels above each of said faucets and separate rack means below said base for supporting and guiding and storing beverage containers filled from each said nozzle.

8. A double service beverage tower for filling beverage containers from a single beverage faucet from each of the front and the back of said tower, comprising: a tower support having a front, a back and two sides, a plurality of adjacent beverage faucets forming a single row of faucets extending between said sides for dispensing a plurality of beverages, each faucet providing only a single discharge nozzle, said discharge nozzles 25

being spaced apart laterally and forming a single row between said sides, a pair of first manually operable switches, one at the front and one at the back of said tower for each said faucet for actuating said faucets so that said beverage containers may be automatically filled with a predetermined quantity of beverage by operators at the back or at the front of said tower; a pair of separate manually operable switches, one at the front and one at the back of said tower for each said faucet for manually controlling the quantity of beverage to be dispensed from each said nozzle, and a base on said support and positioned beneath said faucets, pairs of stop members on said base which are laterally spaced from the vertical projections of said nozzles and which are being positioned to engage, guide and stop beverage containers as they are moved inwardly from the front and from the rear of said tower along said base.

9. A double service beverage tower in accordance with claim 8 wherein each of said first manually operable switches is operable automatically to cause one of two predetermined quantities of beverage to be dispensed from each said nozzle.

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