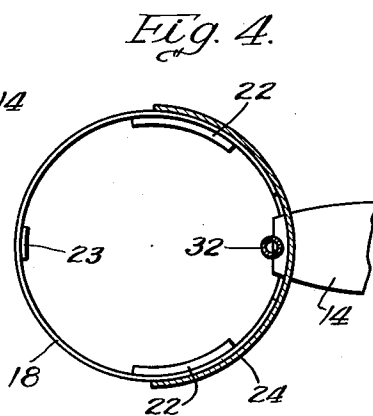
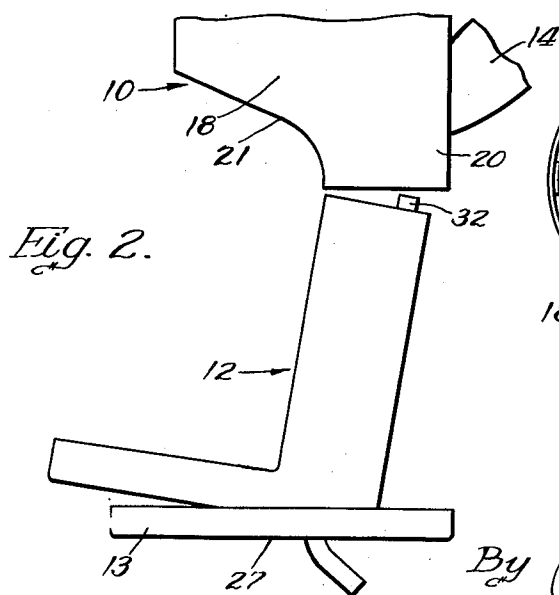
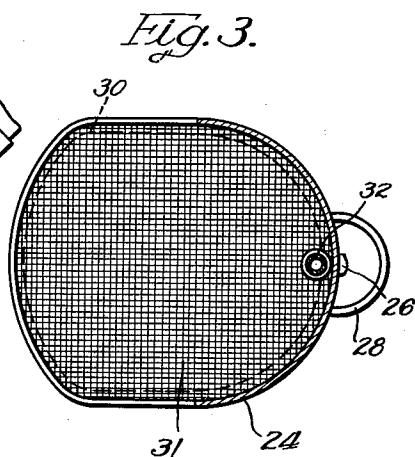
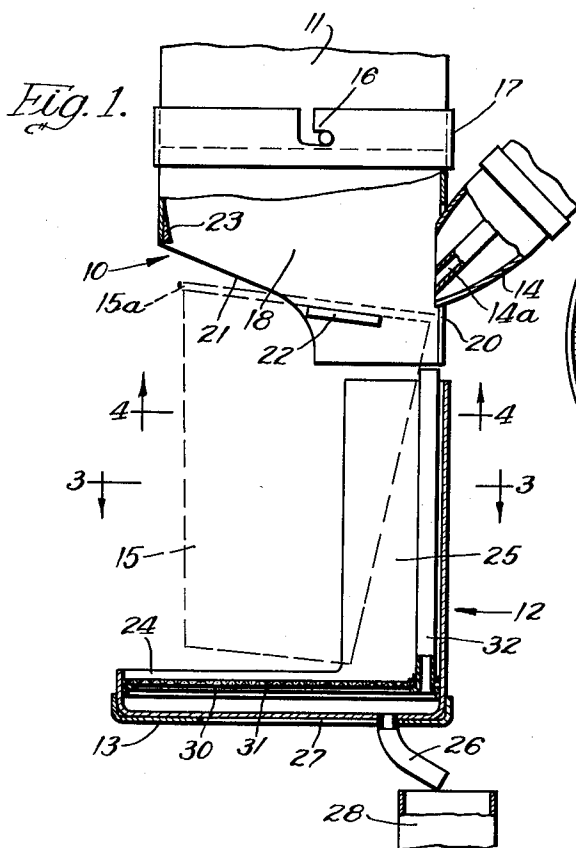


June 3, 1952

S. D. LEVINGS
CUP SUPPORT AND DRAIN

2,598,665

Filed May 17, 1947



Inventor:
Sherburne D. Levings

By *Walter D. Harbaugh*
Att'y.

UNITED STATES PATENT OFFICE

2,598,665

CUP SUPPORT AND DRAIN

Sherburne D. Levings, Winnetka, Ill., assignor to
The Bastian-Blessing Company, Chicago, Ill., a
corporation of Illinois

Application May 17, 1947, Serial No. 748,819

4 Claims. (Cl. 225—21)

1

This invention relates generally to beverage dispensing apparatus and more particularly to an improved device for holding a paper cup during filling by an automatic cupped beverage dispenser.

Beverage vending machines which dispense a paper cup of a carbonated beverage each time a coin is deposited therein have recently come into quite wide use. In such devices cups are generally stored in the upper part of the cabinet and dropped to a position below a filling spout to be filled with beverage syrup and carbonated water mixing occurring in the cup as the ingredients pour in. In order to insure that mixing is complete it is necessary that the liquids flow into the cup with considerable velocity to produce sufficient agitation.

When the cup is filled, the vendee reaches into an opening provided in the wall of the cabinet and removes the cup. Heretofore the problem of how to support the cup during filling so that the velocity of the liquid streams will not upset it and still have the cup accessible for easy removal has not been solved. Some attempts to provide a supporting framework of wire or other material have been made but it is generally awkward to remove the cup when this is done.

One object of this invention is, therefore, to provide a means for supporting the cup during filling which will hold it securely against upsetting and still will not interfere with removal of the cup when filled, it being necessary only for the vendee to grasp the cup and withdraw it from the support with a single straight line motion.

In view of the fact that dispensers of the class described occasionally become out of adjustment and deliver more liquid than a cup will hold, it is essential that a drain be provided beneath the cup to carry away excess liquid dispensed during the filling cycle as well as drippings from the spigot or nozzle after the cup is removed.

Another object is to provide a cup support having a novel drain arrangement associated therewith, all portions of which may be readily removed for cleaning.

A further object is to provide a flat drain board surface below the cup supporting means which will hold the cup in the proper relationship to the filling nozzle in the event that the cup is not retained on the support.

A further object is to provide a cup support which will hold the cup at an angle with respect to the vendee so that the forward side of the cup is, slightly higher than the back, resulting in a

2

shielding of the vendee against splashing as well as serving to confine any overflow to the rear portion of the cup and thereby improving the appearance of the cup of beverage after filling.

Other and additional objects and advantages of this invention will present themselves to those familiar with the art on reading the following specification in conjunction with the drawing and the appended claims.

In the drawing:

Fig. 1 is a side view of the cup support and drain mechanism of this invention partially in section.

Fig. 2 is a side view showing the manner in which the drain mechanism is removed for cleaning.

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 1.

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 1.

A beverage dispenser of the type with which the cup support of this invention is adapted for use is disclosed in the application of Raymond R. Fredrick, Serial No. 737,025, filed March 25, 1947, now abandoned, reference to which is hereby made.

The cup support of this invention is adapted for use in any dispenser wherein paper cups are dropped into a station which is both accessible to the vendee and below the filling nozzle.

For the purposes of illustration, the support 10 is shown to be fastened to a cylindrical tube 11 which extends upwardly to the cup storage space and dropping mechanism (not shown). The drain elements 12 are supported on a concave plate 13 carried by the dispenser, which plate is disposed below the cup support 10. The filling nozzle 14, connected to the dispensing mechanism (not shown) extends through the back side of the cup support 10 so that liquid flowing out of the nozzle 14 will be caught in a cup 15 retained by the support 10.

The cup support 10, which is removably secured to the tube 11 by a bayonet joint indicated at 16 between the tube 11 and a collar 17 attached to the support, comprises a cylinder 18 of tubing having a U-shaped opening 20 in its rear side for the nozzle 14 and a cutaway portion 21 on its front face for removal of the cup 15. A pair of inclined lugs 22 or projections extend inwardly from the side walls of the cylinder 18 on opposite sides. A sloping lug 23 on the front of the cylinder 18 likewise extends inwardly.

The function of the cup support 10 is as fol-

3

lows: When the cup dropping mechanism (not shown) is actuated, a single cup 15 is released and drops down the tube 11. Since the base of the cup 15 is smaller than the top portion and the tube 11 is of larger diameter than the cup 15, the cup 15 falls freely until the lip 15a strikes the top of the sloping lug 23. Friction between the lip 15a and the lug 23 causes the cup 15 to rotate slightly, the rear side becoming lower than the front. Simultaneously the cup 15 is pushed rearwardly until it comes to rest in the position indicated in Fig. 1, the lip 15a being supported by the two lugs 22. Since the lugs 22 are inclined slightly to the horizontal, the cup 15 is canted rearwardly at an angle of approximately 10°, its rear top edge being below the bottom of the nozzle 14.

The dispenser mechanism (not shown) is then actuated to cause carbonated water to flow out of the nozzle 14 along with the syrup which flows through the central tube 14a. When the cup is filled, the flow is shut off, and the vendee withdraws the cup by placing his thumb on one side and fingers on the other at points just below the bottom of the tube 18 and exerting slight pressure to squeeze the sides of the cup 15 together slightly as he withdraws it from the support 10, his hand moving in a direction parallel to the inclination of the lugs 22. Since the lugs 22 extend slightly beyond the crosswise diameter of the tube 18 a slight pressure is necessary on the sides of the cup 15 before it can be withdrawn from the support 10 in order to clear the ends of the lugs 22. After the filled cup 15 has been removed, the support is clear to receive another cup 15 when the next drink is purchased.

Should the cup dropping mechanism (not shown) fail to function properly and drop two cups 15 at one time, the second cup will fall into the first and not interfere with the dispensing function.

In order to provide for overfilling of a cup 15 or dripping from the nozzle 14 after the cup 15 is removed, a removable drain arrangement 12 is provided.

The concave plate 13 supported by the dispenser receives a pan 24 which is slightly smaller than the plate 13 so as to fit snugly therein. The rear side 25 of the pan 24 extends upwardly to a point slightly below the bottom of the cylinder 18, the extension serving as an apron to prevent spattering of the beverage onto those parts of the dispenser behind the drain elements 12. A short curved tube 26 extends from the interior of the pan 24 through a slot 27 provided in the plate 13 to a drain conduit 28 which may lead directly to a sewer or to a container (not shown) in the bottom of the dispenser.

A flange ring 30 is secured to the inside of the side wall of the pan 24 for the purpose of supporting either a wire screen 31 or a louvered plate (not shown). This screen 31 fits loosely into the pan 24 so as to be readily removable. A drip tube 32 is fastened to the screen 31 at its back side and extends upwardly perpendicular to the screen 31. The upper end of the drip tube 32 is preferably located as close as possible, without interfering with the cup 15, to the bottom of the nozzle 14 in a position to catch all drippings from the nozzle 14 and carry them to the pan 24 at a point below the screen 31.

Thus it will be seen that the pan 24 as well as the screen 31 are readily separable from the dispenser and from each other for purposes of cleaning.

4

It is important that the screen 31 be located at a point close to the bottom of the cup 15 when it is retained on the lugs 22 of the cup support 10, for should a cup 15 not be retained on the lugs 22 or drop away when partially filled it will land in the screen 31 and be supported in an upright position in proper relationship with the nozzle 14 so that liquid flowing from the nozzle 14 will be caught in the cup 15.

It is preferred that all parts of the cup support 10 and drain 12 be formed of stainless steel, however nickel or chromium plated brass serve equally well, either welding or brazing being employed to join the various pieces together.

In some instances it has been found desirable to form the lugs 22 and 23 on the cylinder 18 by bending the walls of the cylinder 18 inwardly to produce the required surfaces. In other cases the lugs 22 have been omitted and the bottom cylinder 18 cut off on an angle parallel to the desired position of the cup 15, the rear portions of the bottom of the cylinder being rolled inwardly to form a bead which supports the lip 15a on the cup in the same manner as do the lugs 22 in the present embodiment.

Other and additional changes and modifications to the preferred embodiment herein described will, of course, occur to those familiar with the art and may be made without departing from the spirit of this invention whose scope is defined by the appended claims.

What is claimed is:

1. In a cupped beverage dispenser the combination including a filling nozzle inclined at an angle with the vertical, a vertical tube for conveying cups one at a time from a storage space to a position below said nozzle, a projection on the inside of said tube disposed at a point below said nozzle, said projection being slightly inclined to the horizontal, the ends of said projection adjacent said nozzle being lowermost, and a cutaway portion on the side of said tube opposite said nozzle below said inclined projection for withdrawal of a cup retained on said projection after being filled by said nozzle.

2. In a cupped beverage dispenser the combination including a filling nozzle, a tube for conveying cups one at a time from a storage space to a position below said nozzle, a projection on the inside of said tube disposed at a point below said nozzle, said projection being inclined to the horizontal, the ends of said projection adjacent said nozzle being lowermost, and a cutaway portion on the side of said tube opposite said nozzle for withdrawal of a cup retained on said projection after being filled by said nozzle.

3. In a beverage dispenser the combination including a filling nozzle inclined at an angle with the vertical, means for conveying cups one at a time from a storage space to a position below said nozzle, a fixed support for holding a cup in said position below said nozzle, said support being carried by said means and so arranged as to align the cup for filling with reference to said nozzle at a slight angle with the side adjacent to the nozzle slightly lower than the opposite side, and an opening in said means opposite said nozzle permitting the cup to be withdrawn from said support after filling, said fixed support being the sole means for retaining said cup in filling position.

4. In a beverage dispenser the combination including a filling nozzle inclined at an angle with the vertical, means for conveying cups one at

a time from a storage space to a position below said nozzle, a support for holding a cup in said position below said nozzle, said support being inclined so as to align the cup for filling with the side adjacent to said nozzle slightly lower than the opposite side, and an opening in the conveying means disposed opposite said nozzle for withdrawal of the cup from said support after filling.

SHERBURNE D. LEVINGS. 10

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,321,844	Nicholson	June 15, 1943
2,426,707	Polsen et al.	Sept. 2, 1947