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Harvey

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[54] **CONTAINER FILLING DEVICE**

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[52] **U.S. Cl.** **141/237**, 53/390

[51] **Int. Cl.** **B65b 1/04**, B65b 1/10

[58] **Field of Search** 53/390, 246, 247, 281, 235, 53/258; 222/460, 480, 533, 459; 141/99, 234, 236, 237, 286

[56] **References Cited**

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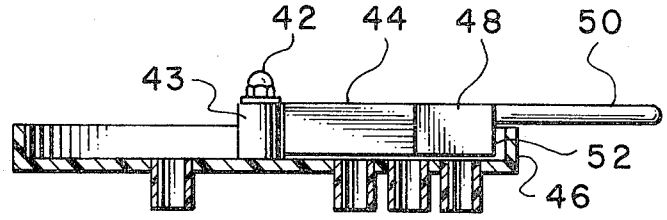
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Assistant Examiner—Horace M. Culver

[57] **ABSTRACT**

An apparatus for simultaneously filling multiple containers such as glasses with ice and the like is disclosed. A distributor tray having a flat bottom and upstanding side walls is provided with a plurality of circular openings in the bottom. Surrounding each opening is a downwardly extending spout which is adapted to be placed into containers arranged on a lower base tray. The lower base tray may be a conventional flat, oval tray or preferably may have indentations conforming to the shape of the bottom of the containers to properly align and index the glasses to be filled with the spouts in the upper tray. In one embodiment a paddle is affixed to the distributor tray and movable therein to assist in distributing the ice among the filler spouts.

1 Claim, 7 Drawing Figures



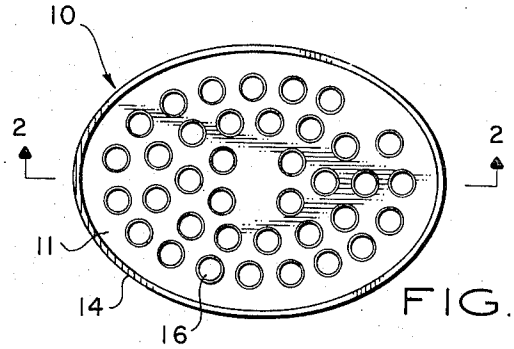


FIG. 1

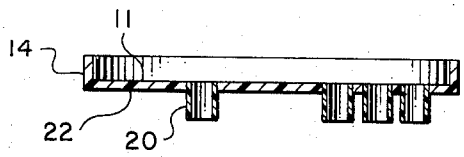


FIG. 2

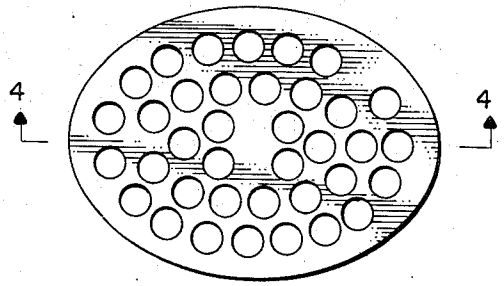


FIG. 3



FIG. 4

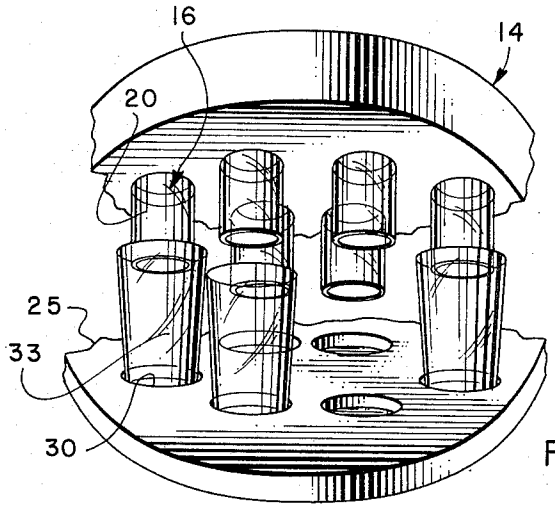


FIG. 5

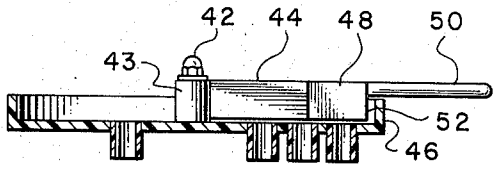


FIG. 6

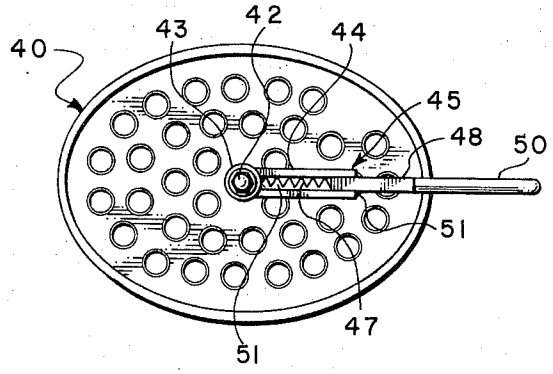


FIG. 7

CONTAINER FILLING DEVICE

BACKGROUND OF THE INVENTION

This invention relates to container filling apparatus and more particularly to apparatus for simultaneously filling a plurality of beverage containers with ice, primarily for restaurant, hotel and commercial use.

It is the general practice in restaurants and dining rooms to maintain one or several trays of beverage glasses filled with ice ready for use. Immediately prior to delivery to the dining table, the waiter fills the containers with the beverage pouring from a pitcher. Preliminary icing of the glasses speeds up the serving process as the waiter does not have to delay taking additional time to fill the containers with ice.

Generally the practice for waiters in attendance is to fill the empty glasses with ice during slow periods of activity. The glasses, as mentioned above, are then ready for delivery to the table. A tray of glasses is iced by a manual operation, the waiter scoops a desired quantity of ice from the freezer or container into the beverage glass. When filling a tray having a large number of glasses, at least 30 or so, such an operation requires considerable time and duplication of steps. Further, the glasses are not uniformly filled as the quantity contained in each scoop may vary. In addition, spillage of the ice on the tray also often occurs which results in the bases of the glasses becoming wet, causing them to become more difficult to handle as well as messy for the customer.

In attempts to solve this problem and expedite the glass filling procedure, a number of apparatus can be found in the prior art. Most of the prior art devices are elaborate arrangements with an intricate filling grid through which the filling material is poured. Most of these devices are for use in the manufacture and filling of ice cream cartons and similar confections and no suitable device for multiple filling of glasses with ice is suggested in the prior art.

With use of the device of the present invention, a number of containers may be simultaneously filled with ice to a uniform level with considerable savings of time as well as minimizing inconvenience and spillage. Further, the filling device of the present invention does not require that the containers to be filled first be placed on a special base tray or that the container be individually manually arranged in a particular pattern to accommodate the filling tray. Although such a tray may be used with the filling device of the present invention, and one embodiment includes such a base, a standard oval tray as is in conventional use in most restaurants can be used with the device of the present invention. Further, the filling tray of the present invention is integrally formed and may be easily and economically manufactured by conventional molding techniques. Also, with the present invention, containers may be uniformly filled to any desired level, the contents of the containers being readily visable by the user.

In summary, the present invention contemplates an upper distributor or filling tray member having an upstanding peripheral side wall extending continuously around the outer edge of the tray. A plurality of circular openings are provided through the tray bottom. The arrangement and spacing of the openings correspond to the natural arrangement assumed by a predetermined number of containers snuggly packed on a conventional base tray of the same size and shape as the filling

tray. Spouts extend downwardly from each of the openings to depend into the containers arranged on the base tray. Material placed on the filling tray is paddled into the glasses without any spillage. The downwardly depending spouts engage the inner rims of the containers to hold them in place during the filling operation and to prevent their tipping or sliding on the base tray.

A cooperative bottom tray having indentations therein to receive and to properly arrange the glasses to be filled is also shown in an alternate embodiment as are paddle means affixed to the distributor tray for scraping the ice into the multiple spouts.

A more complete understanding of the present invention will be had from the following specification, claims and drawings in which:

FIG. 1 is a top plan view of the distributor tray of the present invention;

FIG. 2 is a vertical sectional view taken on lines 2—2 of FIG. 1;

FIG. 3 is a top view of the base tray that can be used with the tray of FIGS. 1 and 2;

FIG. 4 is a vertical sectional view taken on line 4—4 of FIG. 3;

FIG. 5 is a fragmentary perspective view showing a number of glasses arranged in place for filling, using the distributor and base tray of the present invention;

FIG. 6 is a vertical sectional view of an alternate embodiment of the distributor tray; and

FIG. 7 is a top view of the tray of FIG. 6.

Referring now to FIGS. 1 and 2 of the drawings, the preferred embodiment of the distributor of the present invention is generally designated by the numeral **10**, and comprises flat, oval bottom section **11** having upstanding wall **14** extending continuously around the edge of the bottom **11**. Wall **14** is of suitable height to retain a desired quantity of ice or other filling material on the tray without permitting spillage.

A plurality of spaced apart circular openings **16** are provided in bottom planar wall **11**. The size and spacing of the openings may vary somewhat with the tray size and size and shape of the containers to be filled. However, with tray **11** conforming in size and shape to the conventional oval trays used in the restaurant service and designed to accommodate conventional restaurant service tumblers, each opening will be 2 to 3 inches in diameter and spaced and arranged as shown in FIG. 1 accommodating approximately 34 to 37 containers. This spacing makes optimum use of the tray area and also conforms generally to the pattern assumed when this number of glasses are packed together on an oval tray.

Extending downwardly from the under side of tray bottom **11** are spouts **20** in the form of a lip or flange continuously surrounding each of the openings **16**. The outer diameters of the spouts are small enough to permit easy insertion into the glasses or containers to be filled. The depth of the spout members **20** is sufficient to depend into the glasses a small distance to provide a funnel for the ice being poured into the glasses. To facilitate insertion into the glasses and to assist in funneling the ice into the glasses, the spouts **20** may be slightly conical.

The filler or distributor **10** is constructed of any suitable material, metal or plastic. The size and shape, however, lends itself to fabrication by injecting molding techniques. In such case, the tray would be made of plastic such as styrene for strength and lightness.

When it is desired to simultaneously fill a number of containers with ice, the containers are appropriately placed on a standard oval serving tray. The containers are shown as standard restaurant service tumblers, commonly in use. When the proper number to fill the tray are placed on the oval tray and snuggled together, they will form a random arrangement approximately corresponding to the hole arrangement shown in FIG. 1. Once a tray is filled and the glasses have assumed this arrangement, the filling tray **10** is positioned on top of the group of containers. The outer edge **12** of the filling tray **10** will approximately vertically align with the outer edge of the base tray. Each of the spouts **20** will depend into one of the subjacent glasses. Since the outer diameter of spouts **20** in the bottom **11** of the filler tray are slightly less than the mouths of the glasses **25,** provision is allowed for slight variations in the arrangement of the glasses. Once several of the spouts are engaged in a corresponding glass, a slight "racking" or horizontal shifting of the distributor tray will result in engagement of the spouts within all of the glasses. Once tray **10** is properly positioned it will rest on the top edge of the glasses, being supported along spaces **22** between the spouts **20** on the underside of tray **10.**

With the tray **10** and glasses **25** thus assembled, ice is placed on the upper surface of tray **10.** The waiter would simply scoop crushed ice onto the surface **11** of the tray and distribute it among holes **16** with an appropriate paddle device. The ice will be delivered to the glasses through the openings **16** and the spouts **20.** Since the contents of the glasses are visible through the holes **16,** the waiter can easily fill the glasses to any desired level.

When the glasses have been properly iced, the filling tray is removed and the glasses are ready for use. Prior to serving, the glasses will be filled with the appropriate liquid, such as water. Additional trays and glasses can be iced in the manner described above and vertically stacked upon one another for use. From the foregoing, it will be seen that the downwardly extending spouts which depend into the glasses minimize or completely eliminate spillage of ice. Furthermore, the engagement of the spout **20** with the interior of the glass eliminates relative movement between the goblets to prevent inadvertent tipping of the glasses.

Instead of using an ordinary planar base tray, it may be desirable to provide a cooperating base tray having indentations which align with the holes **16** of the filler tray and serve to assist in properly arranging the glasses thereon. Such a base tray is shown in FIGS. **3** and **4.** Base tray **25** is shown as being generally oval and having a flat upper and lower surface with a pattern of round indentations **30** slightly oversize compared to the base diameter of the glasses to be used. The exterior of base tray **25,** accordingly, would correspond in shape to the filler tray **10.** The pattern of indentations **30** would align with spouts **20** of the filler tray when the trays are vertically aligned. The waiter would arrange the glasses to be filled on the base tray and place them properly in the indentations provided therein. The filler tray would be positioned on the tops of the glasses as explained above and filled in the same manner. Alignment of the spouts and glasses is insured and little or no racking to engage the filler tray in the glasses is necessary. Base tray **25** would similarly be molded of plastic for durability and strength.

FIG. **5** illustrates the manner in which the upper distributor tray **20** and the lower base tray **25** cooperate. Glasses **33** are shown in position in the accommodating indentations **30** in base tray **25.** As seen, the indentations are slightly oversize to accommodate several sizes and shapes of glasses. With the glasses thus positioned in the base tray, the upper tray **10** can easily be positioned on the tops of the glasses with the spouts extending into the glasses and the tray supported on the glasses. With the trays and glasses so assembled, the glasses are easily filled with ice and when completed the upper filler tray is removed and transferred for use with another tray of glasses. The flat bottom surface of the base tray **25** permits it to be used as the serving tray with the waiter transporting the tray in usual fashion with the waiter supporting the tray on the underside with the palm and fingers of the hand.

FIGS. **6** and **7** show still another embodiment of the present invention generally designated by the numeral **40.** The filler or distributor tray **41** is constructed in the manner described with reference to FIGS. **1** and **2** further provided with paddle means **45** for assisting in distributing the ice or filler material among the spouts and glasses.

Looking at FIG. **6,** a pivot **42** in the form of a stub shaft extends vertically from the approximate middle of the tray. Blade member **44** is hinged at **43** and is rotative about **42.** As is seen in FIG. **7,** member **44** is of an axial length less than the minor diameter of oval tray **40** to permit rotation fully around the interior of the tray. Member **44** is slotted at **51** to receive extension member **48** which engages the inside of tray wall **46** at edge **52.** Spring **47** in slot **51** biases member **48** into engagement with the tray edge permitting member **48** to extend or retract as it is rotated. A handle member **50** extends beyond the tray periphery for operation of the paddle.

From the foregoing description, the operation of the paddle will be readily understood. Once the paddle containing tray **40** is positioned over the glasses in a manner similar to that shown in FIG. **5,** ice is introduced onto the tray surface. The blade member **44** and axially slidable member **48** are reciprocated around the tray interior about pivot **42** through handle **50** to distribute the ice around the subjacent containers. The springs **47** urge member **48** outwardly, keeping edge **52** in continual contact with the tray yet permitting the member **48** to retract and extend in accordance with the radial position of the blade. For example, when the blade **45** is at the 12 o'clock position, looking at FIG. **7,** it is fully retracted in member **44.** When the blade is rotated 90° in either direction from this position, it assumes a fully extended position. The height of the blade member, being greater than edge **46,** is sufficient so that the ice will be advanced and distributed ahead of the blade without spillage over the top of the blade.

From the foregoing it will be seen that the present invention provides improved means for filling containers. The engagement of the spouts provided on the filler tray insures against relative movement of the containers and eliminates spillage. The oval shape filling tray of the preferred embodiment is usable with a standard oval service tray or with the specially provided base tray. Any convenient paddle may be used with the tray or, as shown in one embodiment, an integral tray mounted paddle may be incorporated. It should be noted that although the present invention has been de-

scribed as being useful for the filling of glasses with ice, it is suitable for a number of suitable uses. For example, the present invention could be used to facilitate the simultaneous filling of a number of liquid containers by arranging the containers in a filler tray as described above and pouring the liquid into the filler tray to be distributed among the glasses or containers. Also, the present invention will be useful domestically for home freezing or canning. The housewife would arrange the containers in the proper alignment and place the filler tray on the tops of glasses positioned in the spouts as described above. With the tray and glasses thus assembled, the filling material such as a fruit or vegetable would be introduced onto the filling tray and then racked by a paddle or suitable device into the openings where upon the filling material fills all the containers. After the containers have been filled, the tray would be lifted away and removed for washing, since the tray is preferably of plastic or metal and is adaptable to cleaning in automatic dishwashers.

It will be obvious to those skilled in the art to make other changes, modifications, and alterations to the present invention without departing from the spirit and scope of the invention thereof.

I claim:

1. An apparatus for filling a number of open-mouthed similar containers comprising:

a first tray member having a substantially flat bottom and a plurality of indentations therein, said indentations being arranged in a predetermined pattern and being of a size and shape to accommodate the base of the containers,

a second tray having a flat surface with a top and bottom and a number of spaced apart openings therein arranged in a pattern corresponding to the pattern of said indentations, an upstanding rim extending around the periphery of said second tray, a downwardly and inwardly extending spout surrounding and associated with each of said openings, said spout adapted to be received within the open mouth of said containers whereby said second tray can be positioned over said containers with said spouts depending into said containers and with said tray bottom resting on the tops of said container mouths, and

paddle means provided on said second tray, said paddle means being pivotally mounted to said tray and adapted to traverse the surface of said tray to distribute filling material placed thereon in said openings, said first and second tray are generally oval shaped and wherein said paddle means is extendable and retractable to continuously engage the rim of said second tray.

* * * * *