H. H. CHOATE.

LIQUID DISPENSING APPARATUS.

APPLICATION FILED MAY 27, 1907.

1,077,870.

Patented Nov. 4, 1913.

FIG. 1

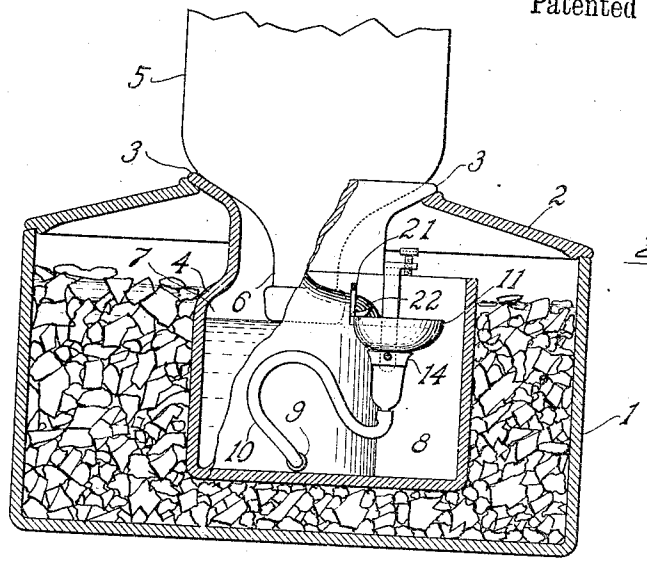


FIG. 2

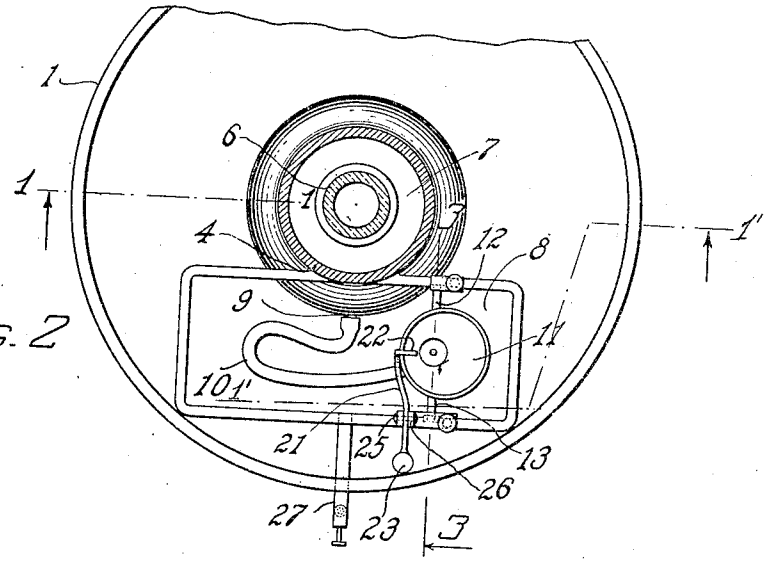
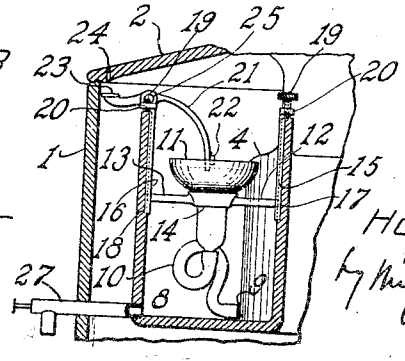


FIG. 3



WITNESSES

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UNITED STATES PATENT OFFICE.

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LIQUID-DISPENSING APPARATUS.

1,077,870. Specification of Letters Patent. Patented Nov. 4, 1913.

Application filed May 27, 1907. Serial No. 375,309.

To all whom it may concern:

Be it known that I, HORACE H. CHOATE, of Gloucester, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Liquid-Dispensing Apparatus, of which the following is a specification.

This invention relates to devices in which liquids, particularly beverages, may be contained, and from which quantities of regulated amount may be obtained by the deposition of a coin.

The object is to furnish a simple, efficient and easily manipulated apparatus of the sort specified, which will be aseptic and free from metal.

The apparatus comprises in its construction the receptacle which receives the liquid from a separable tank, bottle or the like, and from which the liquid is fed through a constantly-attached connection to a coin-controlled measuring and dispensing vessel.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section, on lines 1—1, 1′—1′, of Fig. 2, partly in elevation, of this embodiment of the apparatus. Fig. 2 represents a sectional plan view of the parts below the line 2—2 of Fig. 1. Fig. 3 represents a fragmentary cross-section on line 3—3 of Fig. 2, looking in the direction of the arrow.

The same reference characters indicate the same parts in all the figures.

1 represents an outer casing having a separable cover 2 with a central opening through which extends the flange 3 of an inner receptacle or reservoir 4. The flange 3 rests against the edges of the opening in the cover and supports the receptacle 4 which is contained entirely within the outer casing 1 and may be surrounded by lumps of ice or other suitable refrigerant for chilling the liquid. Supported on the upper portion of the flange 3 is a liquid vessel 5, preferably an inverted bottle or carboy, of which the neck 6 extends into the receptacle 4. The latter is divided into two compartments 7 and 8 respectively, of which the former is circular so as to support the bottle 5 over a practically continuous zone, while the latter is box-like and is entirely separated from the first compartment by an intermediate dividing wall. Upon the bottle or carboy being inverted and set into the receptacle 4, the liquid is discharged into the compartment 7 until it rises to the level of the mouth of the bottle, whereupon the level becomes stationary and is maintained at the same point as long as any liquid remains in the bottle.

There is no outlet from the compartment or reservoir 7, except through a single nipple 9 over which is passed one end of a piece of flexible tubing 10. The other end of the tubing is attached to the bottom of a measuring vessel 11 which is pivotally mounted within the compartment 8. This measuring vessel is preferably made of glass and has trunnions 12 and 13 which are either molded integrally upon it or formed upon a band 14 surrounding the vessel. The trunnions are mounted so as to turn in blocks or bars 15 16 contained in grooves 17 18 in opposite walls of the compartment 8, and vertically adjustable therein. The adjustment is effected by set screws 19 which are threaded into lugs 20 formed upon the blocks or bars 15, 16 and bearing on the upper edges of the compartment walls adjacent the grooves. By means of the set screws the measuring vessel is adjusted until its rim is at or above the level of liquid in the reservoir 7. Then by reason of the flexible connection 10, the liquid flows from the reservoir and rises in the measuring vessel until it attains the same level as that which it has in the reservoir. As the deficiency in the reservoir caused by flow of the liquid therefrom to the measuring vessel is made up continually by discharge from the main container 5, the level is maintained constant and the measuring vessel is immediately filled after each emptying.

As appears from Figs. 1 and 2, the measuring vessel is enlarged above the pivotal axis of its trunnions, and the greater part of the enlargement lies at one side of a vertical plane through this axis. At the same time, the vertical height of the pivotal axis is such that when the vessel is empty, its center of gravity will be below the pivotal axis, and when full or nearly full of liquid, the center of gravity will be somewhat above and to one side of this axis. Thus, whenever the vessel is empty or only partially filled, the preponderance of weight below the pivots will cause it to swing into an upright position, and when it becomes nearly full, the displacement of the center of gravity will tend to tip it toward the right

(Figs. 1 and 2) so as to spill part of its contents.

In order to control the time at which the tipping of the measuring vessel takes place, I provide a coin-controlled trip 21 which has a latch 22 adapted to slip over the rim of the measuring vessel and is pivoted in such a way that the action of a coin will cause it to lift the latch out of engagement with the measuring vessel and allow the latter to tilt. One arm 23 of this trip lies near a coin-slot or chute 24 so that it will be struck by a coin dropped into the chute, and will be turned about its pivot in such a way as to release the latch. It is to be understood that the slot shown in Fig. 3 does not necessarily represent the form of coin-chute which I may employ, but that I may employ any of the approved selective devices in common use, by which the operation of the apparatus is restricted to coins alone.

The latch 22 is so pivoted to the trip that it can swing upward and it has an inclined face adapted to be engaged and displaced by the measuring vessel when the latter turns into upright position, but means of any suitable character is provided so as to prevent the latch from dropping below the relative position shown in Fig. 1. Thus when the trip is actuated, the latch is lifted bodily out of engagement with the measuring vessel.

The trip is pivoted at 25 between ears 26 which are carried by the block or bar 15 so that it is adjusted up or down simultaneously with the measuring vessel, and thereby is maintained operative in all positions of the latter. By means of the adjustment referred to, the measuring vessel may be raised or lowered with respect to the constant liquid level in the reservoir, and thereby the actual quantities measured out and dispensed may be suitably regulated.

After the measuring vessel tips, its contents are discharged into the compartment 8, from which it may be drawn into a drinking cup or glass by manual actuation of the tap 27 which passes through the casing 1 and enters the chamber 8. The receptacle 4 is preferably made of porcelain, glass or earthenware, the measuring vessel 11 preferably of glass, and the tubing 8 of rubber or similar non-metallic, impervious material which may be made aseptic. It will thus be seen that all the parts with which the liquid remains in contact for any appreciable length of time are non-metallic, and may be made thoroughly sterile and aseptic so that there will be no pollution of the liquid. This is of particular advantage where soda water or carbonated beverages are dispensed. The only metal with which the liquids come into contact is the tap 27, but the contact is very brief, lasting only while the liquid flows out through it. That is, the liquid does not remain in contact with the tap for any appreciable length of time.

I claim:—

1. An apparatus of the character described including a reservoir adapted to contain liquid at a constant level, a measuring vessel mounted so that it may tip and at such a height that its brim is above the liquid level, a flexible connection between said reservoir and vessel below the liquid level whereby the liquid may rise in the latter to the same level as in the former, and a latch normally holding said vessel upright but releasable so as to permit said vessel to tip and discharge its contents.

2. An apparatus of the character described including a reservoir, a pivotally mounted tilting measuring vessel arranged with its brim above and its body below the level of liquid in said reservoir, the pivotal axis being above the center of gravity of the vessel when empty and aside from the center of gravity when full, and a constantly open connection permitting liquid to flow from said reservoir to the vessel.

3. An apparatus of the character described including a reservoir, a pivotally mounted tilting measuring vessel arranged mainly below, but with its brim above the level of liquid in said reservoir, the center of gravity of the vessel when empty being below the pivotal axis thereof, whereby the vessel is automatically brought into upright position and the vessel being laterally enlarged above the pivot so as to shift the center of gravity to one side thereof when full, and a constantly open connection between the reservoir and vessel whereby liquid is enabled to flow from the former to the latter.

4. An apparatus of the character described including a reservoir adapted to support a container of which the only outlet is beneath its top and within said reservoir, whereby liquid is enabled to flow into the reservoir and is maintained at the level of said outlet, a measuring vessel supported approximately at the height of the liquid surface in the reservoir and having a liquid-admitting connection with said reservoir whereby the said vessel may be kept full to the level of the liquid in said reservoir, said vessel being pivoted between its upper and lower extremities, and provisions for permitting the measuring vessel to overturn and spill its contents.

5. An apparatus of the character described including a reservoir adapted to hold a constant quantity of liquid, a liquid supply arranged to discharge into said reservoir at such rate as to keep the level in the latter at a fixed height, a measuring vessel, a flexible conduit continuously in connec-

tion with said reservoir and vessel whereby the liquid in said vessel may be kept at the level of the liquid in said reservoir, means for altering the height of the measuring vessel to vary the actual quantity of liquid contained therein, and provisions by which the measuring vessel may be caused to discharge its contents, said flexible conduit enabling the connection to be maintained in all positions of the vessel.

6. An apparatus of the character described including a reservoir adapted to contain liquid, delivered from a separate holder, a measuring vessel beside said reservoir and having a liquid-conducting connection therewith so as to hold liquid at the same level as the level of the liquid in the reservoir, said vessel being adjustable up and down to vary the quantity of liquid contained therein, and a trip normally holding said vessel upright and actuable to permit tipping of said vessel and discharge of its contents, said trip being adjustable up and down with the vessel so as to be operative in all positions thereof.

7. An apparatus of the character described, comprising a receptacle having two compartments, one of said compartments holding a supply of liquid, a measuring vessel in the second compartment, vertically adjustable holders supported by the walls of this compartment and to which the said measuring vessel is pivoted, a connection between said vessel and the first compartment whereby liquid can flow to the vessel therefrom, and a trip pivoted to one of said holders and normally engaged with the vessel to retain the same upright, and actuable to enable the vessel to tip and discharge its contents.

In testimony whereof I have affixed my signature, in presence of two witnesses.

HORACE H. CHOATE.

Witnesses:

A. C. RATIGAN,

PETER W. PEZZETTI.