

June 26, 1934.

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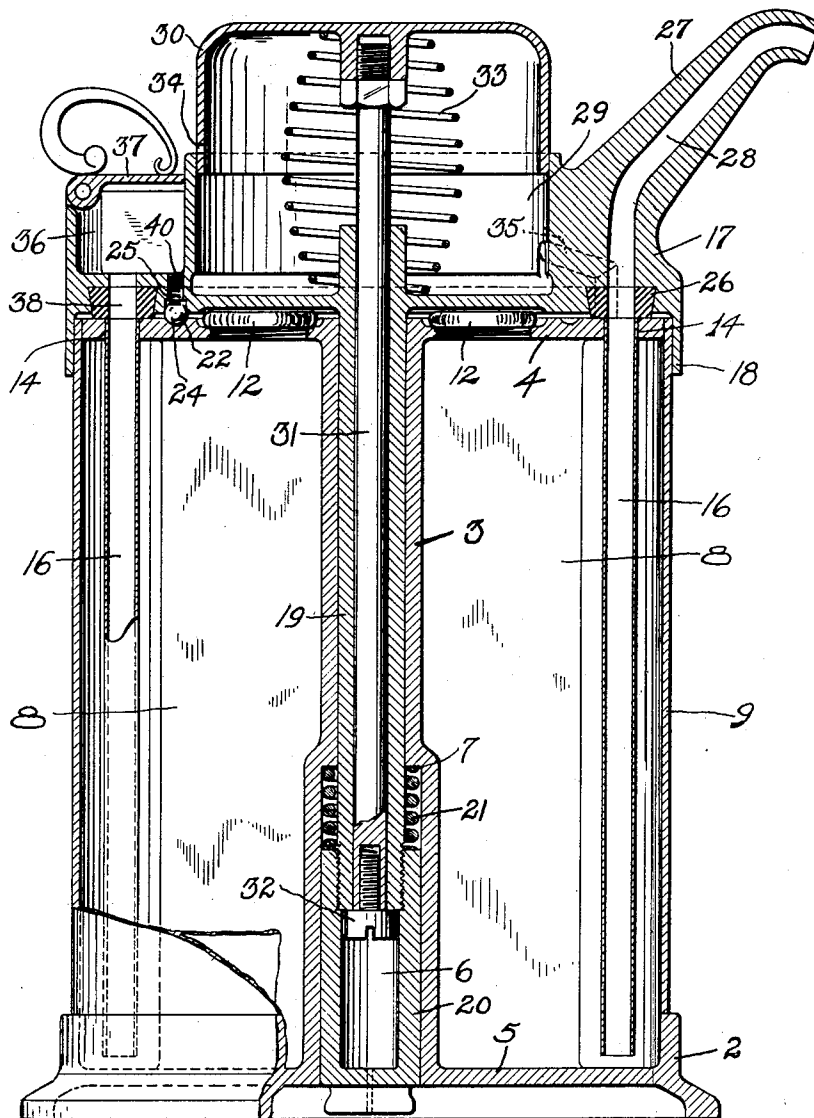
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SELECTIVE LIQUID DISPENSER

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2 Sheets-Sheet 1

Fig. 1



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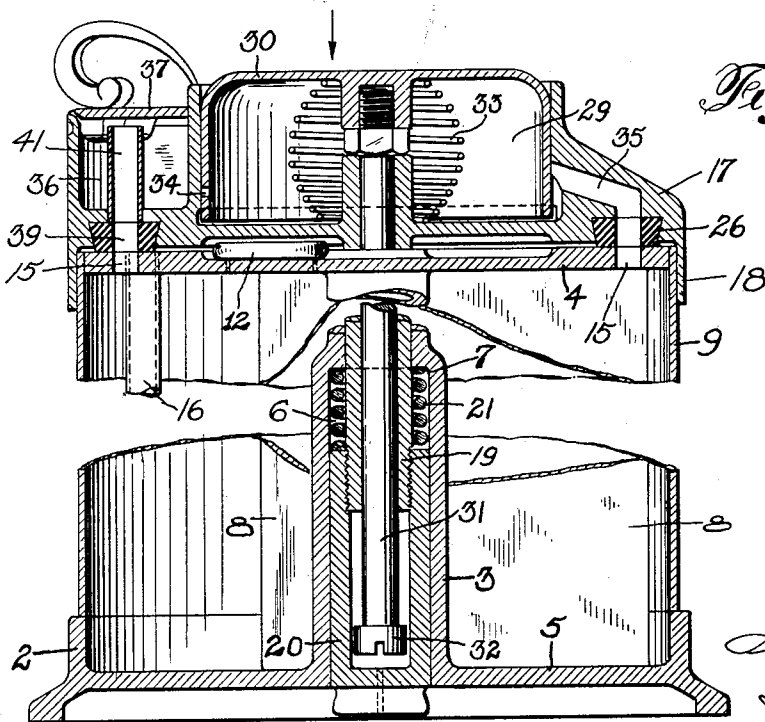
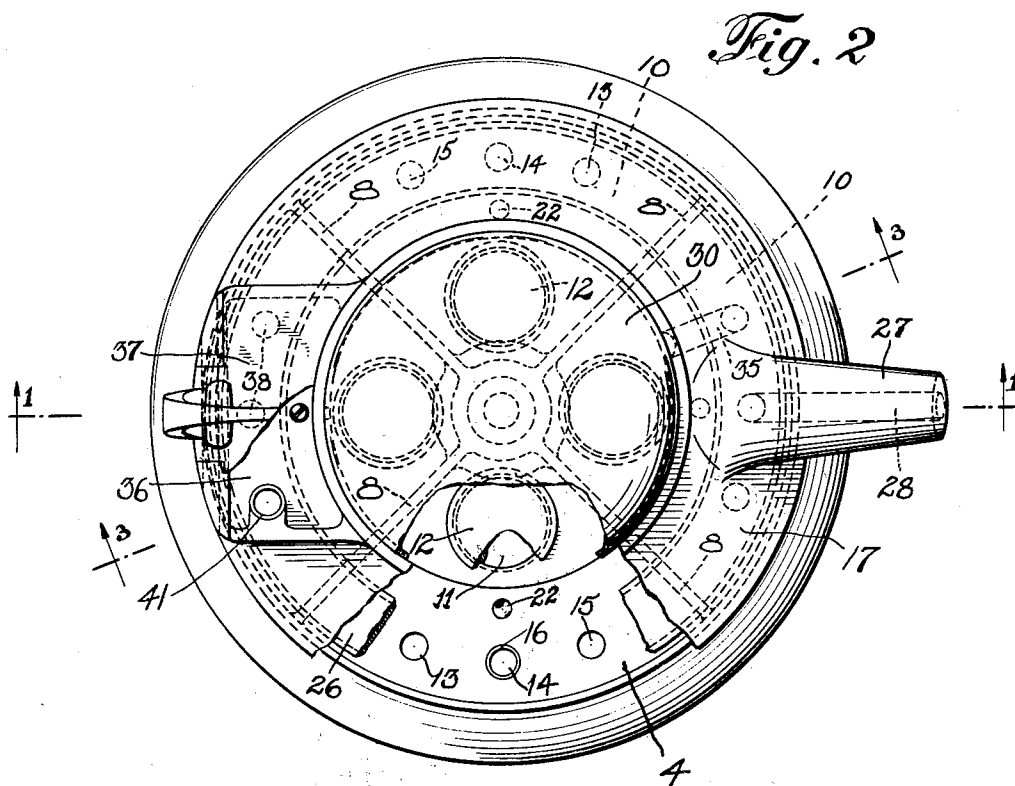
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2 Sheets-Sheet 2



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SELECTIVE LIQUID DISPENSER

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7 Claims. (Cl. 225—35)

This invention relates broadly to devices for dispensing liquids, and more particularly to a device whereby any one of a number of liquids may be selectively dispensed from a single container. Obviously, the invention may be utilized to selectively dispense any one of a number of flavors or types of beverages, or, for instance, it may be used at automobile service stations for dispensing various grades or brands of oils and the like from a single container.

Another object is to provide a dispenser of the character described including means whereby the container may be effectually sealed to the atmosphere when not in use, thus to prevent evaporation and chance of spilling.

Another object of the invention is to provide a device of the character mentioned which is simple, compact and inexpensive, and not readily susceptible of getting out of operating order.

A still further object of the invention is to provide a dispenser which may be refilled with liquid in an extremely convenient manner.

In describing the invention in detail, reference is herein had to the accompanying drawings, in which—

Figure 1 is a vertical cross sectional view of the dispenser illustrating interior construction;

Figure 2 is a top plan view of the device, portions thereof being broken away for illustrative purposes; and,—

Figure 3 is a sectional view taken on line 3—3, Fig 2, the air pump being shown in its depressed position.

Referring to said drawings, the reference numeral 1 designates a hollow cylindrical casing, made of metal, glass, or other appropriate material, having an annular flange 2 formed on its lower end to provide a base. The casing 1 has extending vertically through the diametrical center thereof an internal circular side wall 3, the same being formed integral with and connecting the top 4 and bottom 5 of said casing and defining a circular opening 6 which extends throughout the entire height of said casing, the diameter thereof being made uniformly larger at a spaced distance from the bottom to form a shoulder 7. A plurality of spaced radially disposed webs 8 are formed integral with the interior side wall 3 and extend therefrom to the circular exterior side wall 9 of the casing, the webs forming partition walls for a series of segmental compartments 10, which latter are designed to contain the liquid to be dispensed.

The top 4 of the casing has therein circular openings 11, one such opening being provided for

each compartment, the purpose being to furnish means of access to the interior of each compartment, as for cleaning, etc. Screw threaded caps 12 are threadedly received in each of said openings for closing the latter, said caps being manually removable when desired.

Also provided in the top 4 of the casing are ports 13, 14 and 15, a series of said ports being provided over each of the liquid containing compartments. Received in the center port 14 of each compartment is the upper end of a tube 16, which tube extends downwardly into said compartment and has its lower end terminating slightly above the level of the bottom 5.

Disposed for rotary movement on the upper end of the casing 1 is a rotatable head 17 which, preferably, has a downwardly turned annular flange 18 disposed in non-binding relation to said casing, as clearly shown in Figs. 1 and 3. Said head 17 has formed integral therewith, on the under side thereof, a depending sleeve 19 which in its assembled relation depicted in the drawings is rotatably received in the opening 6, the lower end of said sleeve being formed with screw threads and terminating at a spaced distance from the bottom. A bushing 20 is threadedly attached to the lower end of the sleeve 19 and interposed between the bushing 20 and the shoulder 7 is an appropriate sleeve-encircling spiral spring 21 by means of which the head 17 is more or less yieldingly maintained in position on the casing 1, at the same time not interfering with rotary movements of the head on the casing. Obviously, the bushing 20 may be adjusted as desired for placing the spring 21 under greater or less tension to increase or decrease the pressure applied to the head 17 through the sleeve 19 for regulating the frictional resistance to rotary movement offered between said head 17 and the top 4 of the casing.

The top 4 of the casing has formed in its upper face a plurality of small downwardly pressed indentations 22 of substantially semi-spherical form, said indentations being located in regularly spaced relation, one over each compartment, and at equi-distant points from the axis of the cylindrical casing 1. Also formed in the under face of the overlying head 17 is an aperture adapted to receive in the lower end thereof a small ball 24. Said aperture is threaded and receives a threaded spud 40, between which and the ball 24 is interposed a small coil spring 25. As will be readily understood, the ball 24 and the indentations 22 are designed to coact for main-

taining the head against chance rotary movement following movement thereof to an adjusted position over a selected compartment, as will hereinafter be explained. Tension of the ball 24 may be adjusted by means of the threaded spud and spring.

Provided intermediate the upper face of the top 4 of the container and the under face of the head 17, and stationarily affixed to the latter, is a rubber sealing ring or gasket 26, the same being of such circumference that it overlies and normally seals the various sets of ports 13, 14 and 15.

The discharge spout 27 is formed integral with the head 17 and has a passage 28 extending therethrough normally terminating at its lower end in abutting air-tight relation with the sealing ring 26, a perforation being provided in the sealing ring at this point, as shown in Fig. 1, directly over and in register with the upper open end of the tube 16 located in the port 14 of the specific compartment from which liquid is to be dispensed, the head 17 being positioned accordingly.

A compression chamber 29 is located in the head, the same being somewhat in the form of a recess, the defining side wall of which is circular in top plan view. Provided in said chamber and designed to have vertical movement therein is a piston pump or plunger 30, the same being of hollow dome-like shape, as shown in section in each of Figs. 1 and 3. A piston rod 31 has its upper end attached to said plunger and is slideably received within the embrace of the sleeve 19, the lower end being drilled and tapped to receive a large headed screw 32 adapted to retain said rod in position and providing means for limiting the upward movement of the piston in said sleeve. A compression spring 33 encircles the piston rod and normally maintains the plunger in its upward position. An air inlet port 34 affords access of air into the interior of the plunger, while an exhaust passage 35 leads from the chamber 29 outwardly and downwardly to a perforation located in the sealing ring, which perforation occupies registering relation to the port 15, as shown in Fig. 3, of the compartment from which liquid is to be withdrawn.

The operation of the device is as follows: Assuming that liquid is to be dispensed from a predetermined compartment, the head 17 is rotated on the dispenser casing 1 until the ball 24 registers with the indentation 22 of the selected compartment. Manual depression of the piston pump 30 and rod 31 against the tension of the spring 33 closes the inlet port 34, thereby trapping the air interiorly of the pump. Continued depression forces the trapped air outward from the chamber 29 through the exhaust passage 35 into the liquid containing compartment. As a consequence, the air pressure above the level of the liquid is increased which forces an amount of the liquid upward through the tube 16 and outward through the passage 28 of the spout 27. Upon release of the depressing pressure on the pump, the latter will be returned to its uppermost position by the spring 33, and the operation repeated.

In the described position of the head, the compartment diametrically opposite to that form which liquid is being dispensed is in position for ready and convenient filling. A filler spout 36 having a hinged cover 37 is formed integral with the head 17. Filler openings 38, two in number, are located in the bottom or floor of the spout

and register with two perforations provided in the sealing ring at this point, the latter perforations registering with the ports 13 and 14 of the compartment. The two ports 38 referred to are inlet ports and permit liquid introduced into the filler spout 36 to flow into the compartment by gravity. The remaining port 39 registers with dispenser casing port 15 and has extending upward therefrom a short length of tubing 41. This latter port 39 and associated tubing 41 acts in the capacity of an exhaust through which air displaced by the introduced liquid may escape from the interior of the compartment.

As is manifest, each of the compartments may contain a different grade, flavor or character of liquid, and the desired liquid may be dispensed from the container simply by positioning by rotating the pouring spout in association with the predetermined compartment or station, correct positioning being afforded by the ball and socket arrangement. Positioning the rotatable head so that the ball 24 occupies a substantially midway position between two indentations 22 seals each of the compartments, and eliminates chance of evaporation or loss by spilling.

It will also be understood that the device, with a few minor changes in construction, may be adapted for use as an atomizer wherein the liquid may be dispensed in the form of a spray or mist.

What is claimed is—

1. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports, one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head and communicating with said passage, a compression chamber carried by the head and extending upwardly therefrom and having an open upper end, an inverted cup-shaped plunger having its lower end open and slidable in said chamber, spring means in the chamber and engaged with the plunger to normally urge the latter outwardly of the chamber, said chamber having an exhaust passage for communication with the various compartments, a rod connected to the plunger and extending downwardly into the container, a sleeve encircling the rod and connected to the head, and spring means acting against the sleeve to urge same downwardly thereby to hold the head against accidental rotation.

2. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports, one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head and communicating with said passage, a compression chamber carried by the head and extending upwardly therefrom and having an open upper end, an inverted cup-shaped plunger having its lower end open and slidable in said chamber, spring means in the chamber and engaged with the plunger to normally urge the latter outwardly of the chamber, said chamber having an exhaust passage for communication with the various compartments, and means to restrict outward movement of the plunger.

3. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports, one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head

- and communicating with said passage, a compression chamber carried by the head and extending upwardly therefrom and having an open upper end, an inverted cup-shaped plunger having its lower end open and slidable in said chamber, spring means in the chamber and engaged with the plunger to normally urge the latter outwardly of the chamber, said chamber having an exhaust passage for communication with the various compartments, and combined means to restrict outward movement of the plunger and to yieldably hold the head on the container against accidental rotation.
4. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head and communicating with said passage, air compressing means including a cylinder carried by the head and having an exhaust passage for communication with the various compartments, a plunger in the cylinder, spring means to normally urge the plunger outwardly of the cylinder, and combined means to restrict outward movement of the plunger and to yieldably hold the head on the container and against accidental rotation.
5. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports, one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head and communicating with said passage, air compressing means including a cylinder carried by the head and having an exhaust passage for communication with the various compartments, a plunger in the cylinder, spring means to normally urge the plunger outwardly of the cylinder, and combined means to restrict outward movement of the plunger and to yieldably hold the head on the container and against accidental rotation, including a rod connected to the plunger and extending in the container, a sleeve surrounding the rod and connected to the head, a stationary circular member enclosing the sleeve and the last named spring and having an abutment against which one end of the last named spring engages and a member adjustably connected to the sleeve and engaged with the opposite end of the last named spring.
6. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports, one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head and communicating with said passage, air-compressing means carried by the head and having an exhaust passage for communication with the various compartments, and a single filler means common to all of the compartments and carried by the head to rotate therewith.
7. In a dispenser, a container having a plurality of separate compartments and having a closed upper end provided with ports, one for each compartment, a rotary head on said container end having a passage for registry with a selected one of the ports, a pouring spout carried by the head and communicating with said passage, air-compressing means carried by the head and having an exhaust passage for communication with the various compartments, said upper end of the container having a clean-out opening for each compartment, and a closure for each opening, the head overlying all of the openings and their closures to conceal and protect same.
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