Jan. 1, 1935. R. W. COLE 1,986,250

DISPENSER

Filed Sept. 8, 1932

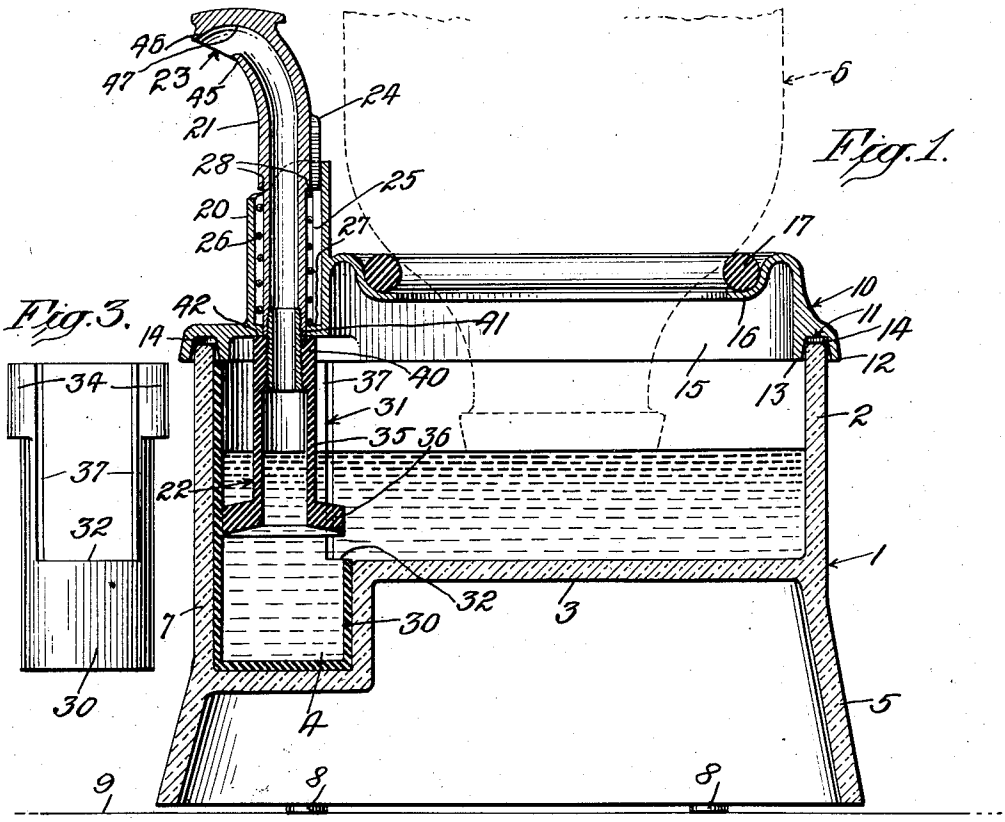


Fig. 1.

Fig. 3.

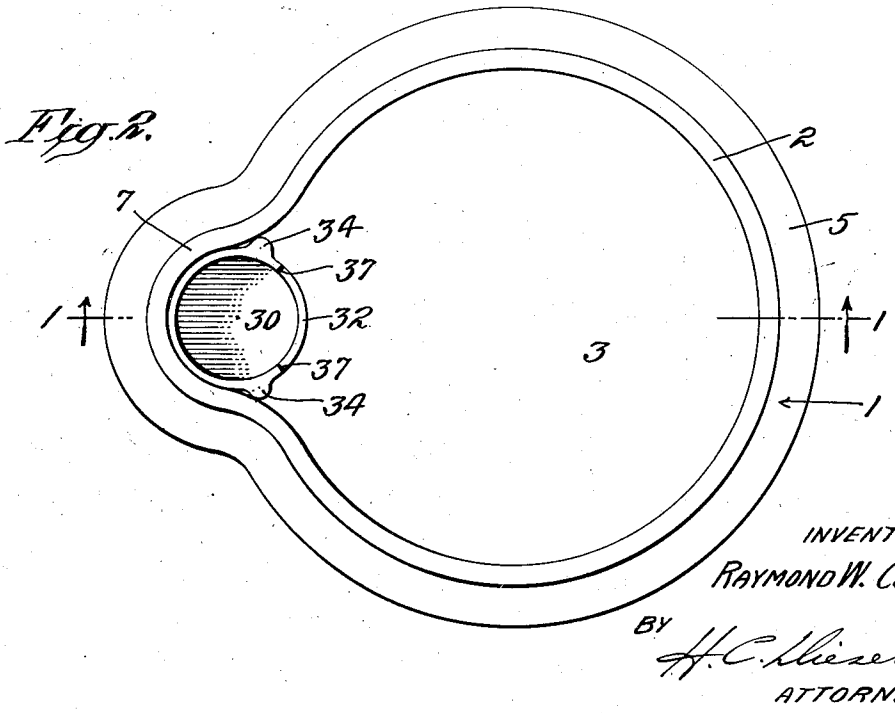


Fig. 2.

INVENTOR
RAYMOND W. COLE
BY H. C. Miessner
ATTORNEY

Patented Jan. 1, 1935 1,986,250

UNITED STATES PATENT OFFICE

1,986,250

DISPENSER

Raymond W. Cole, Cranford, N. J., assignor to Cordley & Hayes, New York, N. Y., a corporation of New York

Application September 8, 1932, Serial No. 632,165

12 Claims. (Cl. 225—35)

This invention relates to dispensers and more particularly to dispensers of the type having a reservoir and a pump adapted to measure and discharge from the reservoir a definite volume of liquid, for instance, a syrup for making drinks.

Among the desired characteristics of such devices are accurate measurement of the amount of fluid to be dispensed, ability to hold liquids over indefinite periods of time without imparting objectionable taste to them, attractive appearance, and simplicity of construction and operation.

According to the present invention, these varied requirements are satisfied by the provision of a glass container for supporting an inverted bottle and having a sump in combination with an insert of non-metallic material, such as bakelite or a material having similar properties, for cooperation with a plunger constructed and mounted in a particularly effective manner. This construction is especially satisfactory when employed in combination with certain other features hereafter described in detail. By the provision of a glass container there is produced a very attractive dispenser, adapted to pleasingly display the liquid within while at the same time the separable insert particularly in combination with an inverted bottle affords an accuracy of measurement not attainable through the use of glass alone.

Another feature of the invention resides in an improved dispenser construction including an improved top and a plunger carried with the top and cooperating with the insert to dispense liquid from the sump. The entire structure is simple and inexpensive to manufacture and easy to assemble, besides being readily accessible for cleaning and providing a minimum of surfaces and spaces for the accumulation of dirt and germs.

Other features of the invention, including certain specific improvements, and other advantages, will become apparent in connection with the following detailed description of one preferred form of my invention, reference being had to the accompanying drawing, wherein:

Fig. 1 is a vertical, central section through a dispenser in accordance with the invention, taken on the line 1—1 of Fig. 2.

Fig. 2 is a plan view of the container and insert of the dispenser shown in Fig. 1, the cover and plunger having been removed, and

Fig. 3 is an elevation of an insert member in accordance with the invention, said member being turned at right angles to its position in Figs. 1 and 2.

In the drawing, there is shown at 1 a container for liquids including a wall 2, bottom 3, sump 4, and base 5. In order to accommodate an inverted bottle 6 and at the same time make provision for a short, non-drip spout, such as will be hereafter described in detail, the wall 2 is preferably generally circular but has an offset portion 7 forming a wall of the sump 4 which is also offset. The container 1 may preferably be formed as an integral cast glass unit, wherein the bottom 3 of the reservoir slopes slightly toward the sump 4 and the base 5 is a flared continuation of wall 2, though these portions of the container may take other desired shapes. Rubber pads 8 may be secured to the bottom of base 5, in any suitable manner, to form a cushion between the container and any flat surface 9 upon which it is adapted to stand.

The top 10 of the dispenser may advantageously be provided with a groove 11 formed between flanges 12 and 13 and adapted to receive the upper edge of wall 2—7 about its entire perimeter. If desired, spaced feet 14 may be formed on the top, within the groove, to rest on the upper edge of the glass in order to prevent the glass from becoming wedged in the groove. However, while a particularly effective construction may be achieved in this manner, one of these flanges might be omitted, if desired, or some other arrangement might be employed for the purpose indicated. The flanges 12 and 13 and feet 14 are preferably so arranged that air may enter the interior of the container by passing between the flanges and wall 2 between the feet. The top 10 may have an annular-shaped portion 15 forming a central opening to receive the neck of an inverted bottle 6, and a shouldered portion 16 for seating a ring 17 of rubber or other cushioning material upon which the bottle is adapted to rest.

Also secured to and preferably formed integral with the top 10 there may be provided a cylindrical sleeve 20 forming a guide for a tube 21 conveniently formed of metal and adapted to carry a plunger element 22 for displacing liquid from the sump. Tube 21 serves to convey the liquid displaced to a glass or other receptacle held below the mouth 23 of the tube. The tube 21 is received within the sleeve 20 and may be provided with a key 24 adapted to slide in a keyway 25 formed at one side of the sleeve, to prevent the tube 21 from turning. A coil spring 26, for raising the tube after it has been depressed, may surround the tube 21 and lie snugly between the same and the inside wall of sleeve 20, resting

on shoulder 27 formed on the top 10 and abutting against shoulder 28 on the tube. The lower end of tube 21 preferably extends downwardly into an opening formed centrally of shoulder 27, and has a sliding fit with the walls of the opening.

Through this construction of the top 10 provision is made not only for supporting an inverted bottle carrying a relatively large supply of the liquid to be dispensed, but also for a simple and effective mounting of the discharge tube and plunger construction in the top of the dispenser. Furthermore, the top 10, when composed of metal may be cast, pressed or otherwise formed as a single piece, thus greatly simplifying manufacturing operations. At the same time, the top may be removed from the container 1 in a moment's time when the device is to be packed for shipping or is to be cleaned after use.

Fitted into and lining the sump 4, and preferably removable therefrom, there is provided a generally cylindrical member or insert 30 having an opening 31 at the side facing the main portion of the container surrounded by wall 2 and having the balance of its periphery closely adjacent to or in contact with wall 7. The bottom 32 of the opening 31 is preferably adapted to lie at the level of the bottom 3 of the container. The opening 31 may extend to the top of the member 30, or if preferred, may extend upwardly merely a distance sufficient to permit liquid to flow into the sump. In either case the wall of the insert above the level of bottom 3 will preferably form the greater portion of a cylinder. The upper edge 33 of member 30 preferably abuts against flanges 13 on top 10. Ears 34 formed on the member 30 serve to maintain the member against turning, through abutment with wall 7.

The plunger 22 may have a tubular portion 35 and an enlarged lower end portion 36 adapted to have a sliding fit in the member 30, the side walls 37 of which act as a guide for the plunger. For securing the plunger 22 to tube 20 a threaded sleeve or nipple 40 may be secured to the plunger in any convenient manner, as by screw threads or by being embedded in the material of the plunger, and it may be adapted to be screwed into threads 41 at the lower end of the tube 20. Abutment of the upper end 42 of plunger 22 against a surface on the top 10 serves to limit upward movement of the tube and plunger under the action of spring 26, the plunger preferably being of such length and so arranged that when it is in normal, raised position no other parts of the displacing mechanism need be in contact with the liquid. If desired the arrangement may be such that the plunger is not completely immersed in the liquid even when depressed in the manner to be explained. In assembling the construction it is merely necessary to insert the spring 26 and tube 21 in the sleeve 20 and screw the threaded sleeve 40 into the tube. The cover 10 may then be put in place after the member 30 has been slipped into the container 1.

The member 30 and the plunger 22 may preferably be formed of bakelite or the like, or some other suitable non-metallic material such as hard rubber. Through this construction not only is accurate measurement of the liquid secured but the imparting of a metallic taste to the same is avoided and at the same time a glass container may be employed both for its attractive appearance and relatively low cost. Moreover, the member 30 besides serving as an accurate measuring sump acts as a guide for the plunger 22, as mentioned. Furthermore, the parts are all simple and inexpensive to manufacture, few in number and easily assembled.

The upper end of the tube 21 adjacent the mouth 23 is preferably constructed so that the lip 45 does not extend horizontally to any appreciable extent but lies generally in line with the front wall of the tube 21, while the portion 46 overlies the upper end of the tube and extends outwardly beyond the lip, providing curved surface 47 for directing the flow of the liquid. Such a spout is particularly effective, for preventing drip, especially apt to occur with syrups, and may be employed to good advantage with the off-set sump arrangement, which permits the short spout to lie adjacent the line of the front wall of the dispenser. Moreover, this construction provides for delivery of the liquid in a direction outwardly of the device, so that the glass into which the fluid is to be delivered need not be held close to or against the device, thus avoiding chipping of glasses.

The operation of the device will no doubt be apparent from the above description of its construction, but it may be here briefly summarized. Upon placing a bottle in inverted position on the device as shown the liquid will fill the container 1 up to the level where it seals the mouth of the bottle, whereupon by depressing the tube 21 and plunger 22 to its maximum extent of travel a definite quantity of syrup will be expelled through mouth 23. In this manner, the accuracy of measurement is insured by reason of the fact that on the one hand the level of liquid in the container is always constant as long as there is some liquid in the inverted bottle, due to the dip-seal, and on the other hand the plunger cuts off or segregates an exact quantity of liquid from the bulk in the container before the dispensing action begins. There is thus always displaced from within the plunger the same amount of liquid. When the device is empty and an inverted bottle is put in place the level of the liquid automatically adjusts itself, and when that bottle is just empty the attendant need only replace it with a full one. The possibility of error in operating the device is accordingly reduced to a minimum.

While the invention has been described in connection with and is particularly adapted for use with an inverted bottle, it will be understood that certain of the features disclosed are similarly advantageous when the liquid is supplied to the container in other manners.

The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention in the use of such terms and expressions, of excluding any equivalents of the features shown and described, or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

I claim:

1. In a device of the character described including an integral glass container having a sump formed therein at one side thereof, an integral cover for said container having means to engage the upper edge of the container around the entire perimeter and including a sleeve for receiving a vertically reciprocating tube and a portion formed to support an inverted bottle, an insert in the container adapted to fit within the sump, and a plunger carried by said tube, said insert being adapted to act as a guide for said plunger and being maintained in position by the top.

2. The combination as claimed in claim 1,

wherein the sump is offset from the main body of the container and the tube is provided with an upper discharge end so formed that one wall of the tube terminates substantially along a vertical line, and the liquid is discharged over the end of said wall.

3. A member of the character described formed of non-metallic material with the physical properties of bakelite and having a portion forming a sump, an aperture above the sump at one side of the member, a portion adapted to guide a plunger at points above the sump portion, and ears of the last-named portion to position the member in a container.

4. In a device of the character described, including a container for liquid, and an integral metal top for the container having an annular portion adapted to seat an inverted bottle, a portion adapted to act as a guide for a reciprocating member, a key-way for receiving a key on said member, a shoulder for supporting a spring, and a flange adapted to lie adjacent the upper edge of the container about its entire perimeter.

5. In a device of the character described, including a container for liquid and a cover therefor, a plunger formed of non-metallic material such as bakelite and having a central opening therethrough, a threaded sleeve secured to said plunger and extending beyond the end thereof, said sleeve being aligned with said opening, and a tube extending through an opening in said cover and constructed and arranged for vertical reciprocating movement, said tube having a threaded portion for engaging said sleeve, and said plunger having an end adapted to abut against the under side of the cover.

6. In a device for dispensing liquids, a member of non-metallic material such as bakelite having a lower end forming a measuring sump for liquid, an opening in one wall of said member for permitting liquid to flow into the sump, a container forming a reservoir for liquid and having a portion for receiving said member, and a plunger of non-metallic material having a central, vertical opening formed therein and constructed and arranged to have a sliding fit in said member, the walls of said member extending above the sump and forming a guide for the plunger.

7. In a liquid dispenser of the character described including an integral glass container having a sump formed therein, an insert adapted to fit within the container adjacent one wall thereof and to line the sump, said insert being formed of non-metallic material such as bakelite, a plunger having a central vertical passage formed therein, said plunger being adapted to displace a definite quantity of fluid from the sump and means to support an inverted bottle with its mouth sealed by the contents of the container.

8. In a liquid dispenser, a container, a member insertable in the container and adapted to be stationarily carried thereby, said container and member having cooperating walls and projections to prevent relative turning, said member including a sump portion, and being made of non-metallic material such as bakelite, and a plunger of similar non-metallic material having a passage formed therein, said plunger being adapted to displace a definite quantity of liquid from the sump through said passage.

9. In a liquid dispenser of the character described, including an integral glass container having a sump formed therein, an insert within and stationarily carried by the container and serving to line the sump, cooperating means on said container and insert for preventing relative turning, said insert being formed of non-metallic material such as bakelite, a top for the container and a plunger carried with the top and having a passage formed therein, said plunger being freely insertable in and removable from said insert and being adapted to displace a definite quantity of liquid from the sump.

10. In a liquid dispenser of the character described, including an integral glass container having a sump formed therein, an insert within and stationarily carried by the container and serving to line the sump, said insert being formed of non-metallic material such as bakelite, a top for the container having a portion adapted to support an inverted bottle and a plunger carried with the top and having a passage formed therein, said plunger being adapted to displace a definite quantity of fluid from the sump, and said insert being in abutment with one wall of the container and offset from the bottle supporting portion of the top.

11. The combination as claimed in claim 10 wherein the insert is provided with ears for aligning it with respect to cooperating portions of the container.

12. A member of the character described formed of non-metallic material with the physical properties of bakelite and having a portion forming a sump, said member having a portion of the wall removed to provide an aperture above the sump at one side, other portions of the wall being adapted to guide the plunger at points above the sump portion, said member being open at the end opposite the sump to receive a plunger, and means on said member for predetermining its position in a container.

RAYMOND W. COLE.