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SIPHONING LIQUID DISPENSER

Filed March 13, 1961

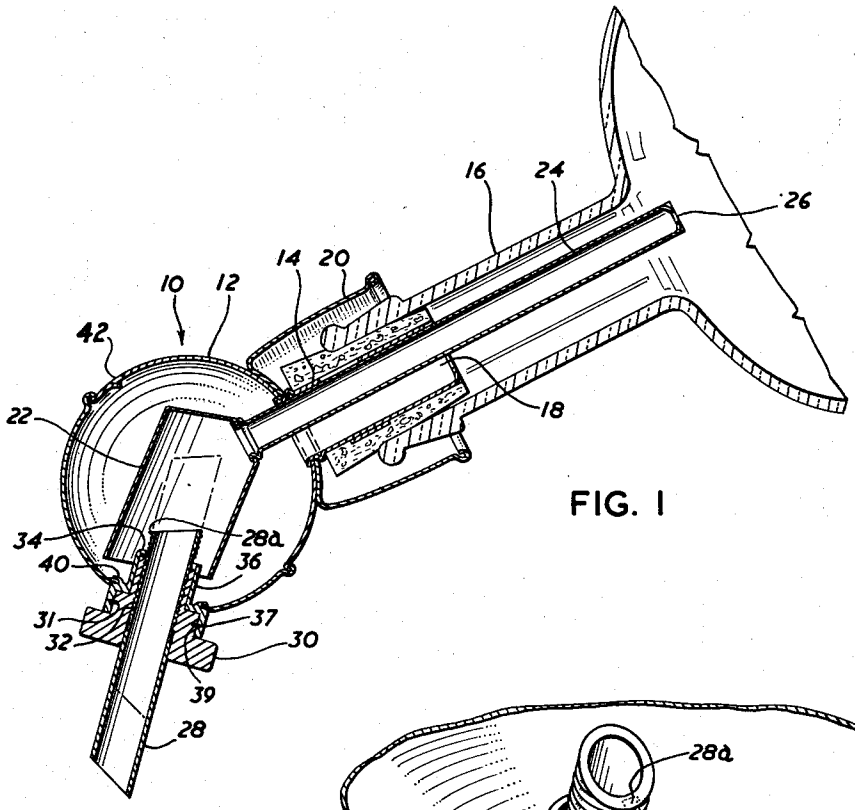


FIG. 1

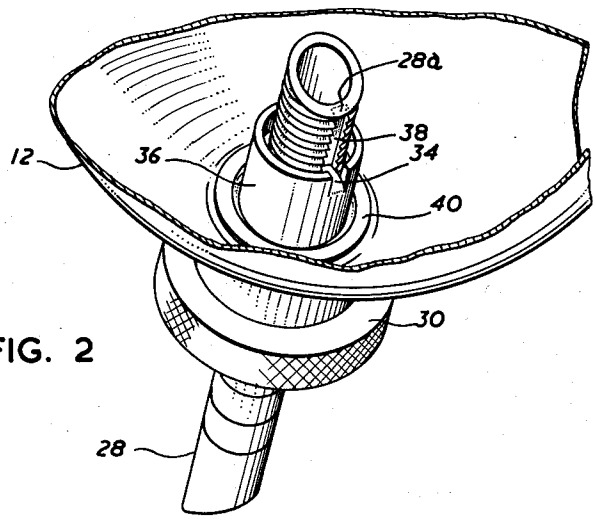


FIG. 2

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SIPHONING LIQUID DISPENSER

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This invention relates to a device for dispensing liquids such as liquor in measured amounts.

Devices that are capable of dispensing predetermined amounts of a liquid from a bottle are well known. The common type of device will dispense only one predetermined quantity, that is, it cannot be regulated to pour anything but the one quantity for which it has been designed. There have been attempts to design a satisfactory device for measuring more than one predetermined quantity of a liquid from a bottle that can be adjusted. These have, however, to my knowledge, all resulted in a cumbersome, costly product that has not gained popular acceptance.

I have devised a siphoning device that is capable of adjustment to measure different amounts of liquid that is easy to manufacture, neat in appearance and easy to use.

Generally speaking, my invention comprises a means for varying the projection of a pouring spout into the open end of a measuring cup in a device of the type under consideration. It will be clearly understood after reference to the following detailed specification read in conjunction with the drawings.

In the drawings:

FIGURE 1 is a cross-sectional view of a measuring device according to the present invention, and,

FIGURE 2 is a partial perspective view of the device illustrating the inside of the bulb.

Referring to the drawings, the numeral **10** generally refers to a device for measuring liquid poured from a bottle. It is of the general type shown in U.S. Patent 2,193,043 and comprises a hollow spherical bulb **12** having a neck **14** extending therefrom that is adapted to enter into the neck **16** of a bottle of liquid. The neck **14** comprises an open ended metal sleeve that makes a liquid tight connection with an opening in the bulb at one end. A tubular sleeve of cork is mounted over the metal sleeve in order to provide a tight fit within the neck **14** of the bottle.

The through opening of the neck **18** provides a passage for liquid from the bottle into the bulb **12**, as will be described later. Numeral **20** refers to a decorative skirt for the neck **14**.

A measuring cup **22** is rigidly mounted within the bulb **12** on the free end of a vent tube **24**. Vent tube **24** is rigidly mounted with respect to the neck **14** and extends therethrough and therebeyond whereby to provide an air passage between the bottom of the cup **22** and the inside of the bottle. Vent tube **24** has a restricted opening **26** at its bottle end that will readily permit the passage of air in operation but will not permit the free flow of liquid therethrough.

In use, liquid travels through the neck opening **18** into the bulb **12**, into the measuring cup **22** and out the spout **28**, as will be fully explained later. The amount of liquid that passes through the unit depends upon the extent of the projection of the spout into the measuring cup **22** and according to this invention means are provided for varying the projection of the spout **28** into the measuring cup **22**.

In the embodiment of the invention illustrated, these means comprise a knob **30** rotatably mounted with respect to the bulb **22** within a sleeve **36** and having a threaded through opening **32** that engages with the threaded shank of the pouring spout **28** as at **32**. The pouring spout **28** is prevented from rotating about its own longitudinal axis by means of a lug **34** on a sleeve **36**. Sleeve **36** is rigidly

mounted on the bulb **12**. Lug **34** enters into a channel **38** formed in the pouring spout **28** and slides with respect thereto as the spout moves inwardly and outwardly. The outward movement of the spout **28** is limited by a burr **28***a* on the threaded shank thereof and the inward movement thereof is limited by the end of its threaded section.

The knob **30** rotates within the sleeve **36** which is, as just indicated, rigidly retained in the bulb **12** by means of the clamping action of its shoulder and a clamping flange that it carries as indicated at **40**.

It will be noted that the sleeve **36** is enlarged at its outer end and that it is formed with a channel **37** that extends therearound. The knob **30** has an enlarged shoulder that is complementary to the enlargement at the end of the sleeve **36** and is also formed with a channel **31** extending therearound. The said channels in the knob and in the sleeve align with each other when the unit is assembled and are adapted to house a broken ring **39** of spring material so that the knob **30** can be sprung into position within the sleeve **36** and will be retained therein by the spring. At the same time, the knob is free to rotate with respect to the sleeve.

It will be apparent that as the knob **30** is rotated within the sleeve that the pouring spout **28** will move inwardly or outwardly with respect to the measuring cup **22** depending upon the direction of the rotation.

The operation of the device is as follows:

The device is inserted into the neck of the bottle as illustrated in FIGURE 1. When the bottle is tipped, to direct the end of the spout downwardly into a glass, liquid will pass through the neck passage **18** into the bulb **12** and will enter into the measuring cup **22**.

When the level of the liquid in the measuring cup reaches the upper end of the pouring spout **28** in the cup, the free supply of air to the inside of the bottle through the vent tube **24** is cut off.

This generates a siphoning action and the liquid starts to run out the pouring spout whereby to stop all inflow of air to the bottle. The cutting off the supply of air to the bottle holds back the liquid in the bottle until the siphoning action is completed. The siphoning action is broken when the liquid level in the bulb has reached the bottom edge of the measuring cup **22**, allowing the entrance of air to the bottle from the inside of the bulb. The vent hole **42** at the top of the bulb admits atmospheric pressure to the bulb. The siphoning action having been interrupted, liquid will again flow from the bottle, fill the bulb to the top level of the pouring spout following which siphoning will once again commence. The cycle will continue to repeat whereby to dispose measured quantities of liquid at intervals as long as the bottle is held in a pouring position and liquid is present in the bottle.

It will be apparent that the amount of liquid discharged will depend upon the amount of liquid in the measuring cup. This in turn depends upon the amount that enters the measuring cup prior to the cutting off of the air supply to the bottle. Thus, the further the spout is extended into the measuring cup, the greater the amount of the liquid to be discharged into the nozzle. Extension of the spout into the cup **22** is controlled by turning the knob **30** as explained above.

The embodiments of my invention other than the one illustrated will be apparent to those skilled in the art and it is my invention that the claims should be limited to the embodiments of the invention shown.

What I claim as my invention is:

1. A device for dispensing liquid in predetermined amounts from a bottle, said device comprising a bulb, neck means extending from said bulb for entry into the neck of said bottle, a passage for liquid through said neck means through which liquid can enter from said bottle to

said bulb, a measuring cup mounted within said bulb and having its open end facing the top portion of said bulb, a vent tube connecting with the bottom of said measuring cup and extending through said neck whereby air can pass from the bottom of said cup to the inside of said bottle in use, a pouring spout carried by said bulb the input end of which projects into said measuring cup and the output end of which is exterior to said bulb, an opening in the back of said bulb to achieve atmospheric pressure in said bulb during pouring, means carried by said bulb for varying the projection of said pouring spout into said measuring cup whereby a predetermined amount of liquid dispensed by said device can be varied.

2. A device as claimed in claim 1, in which said means for varying the projection of said pouring spout into said measuring cup comprises a sleeve carried by said bulb, a knob rotatably mounted in said sleeve, said knob having an internally threaded through hole, said spout being threaded on a portion of its shank for engagement in said through hole of said knob, means co-operating with said spout for preventing it from rotating with respect to said sleeve.

3. A device as claimed in claim 1 in which said means for varying the projection of said pouring spout into said measuring cup comprises a knob rotatably mounted with

respect to said bulb, said knob being formed with a threaded through opening, said pouring spout being threaded for threaded engagement in said opening in said knob, means for preventing said pouring spout from rotating about its own longitudinal axis as said knob is rotated, whereby with rotation of the knob the projection of said pouring spout into or out of said measuring cup can be varied.

4. A device as claimed in claim 3, in which said means for preventing said pouring spout from rotating about its own longitudinal axis comprises a lug rigid with respect to said bulb, said pouring spout being formed with a channel extending parallel to its longitudinal axis, said lug entering into said channel and being adapted for sliding engagement therein.

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