Oct. 1, 1940. R. E. HUMBARD 2,216,347

BEVERAGE MEASURING AND DISPENSING DEVICE

Original Filed Dec. 3, 1936

FIG. 3.

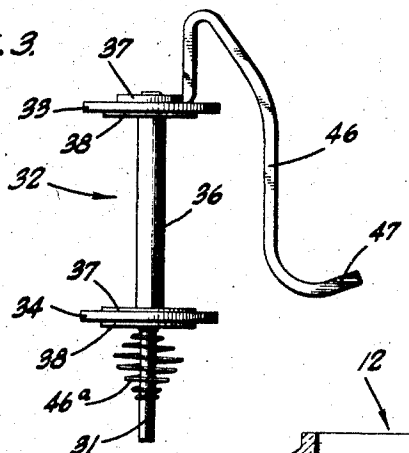


FIG. 1.

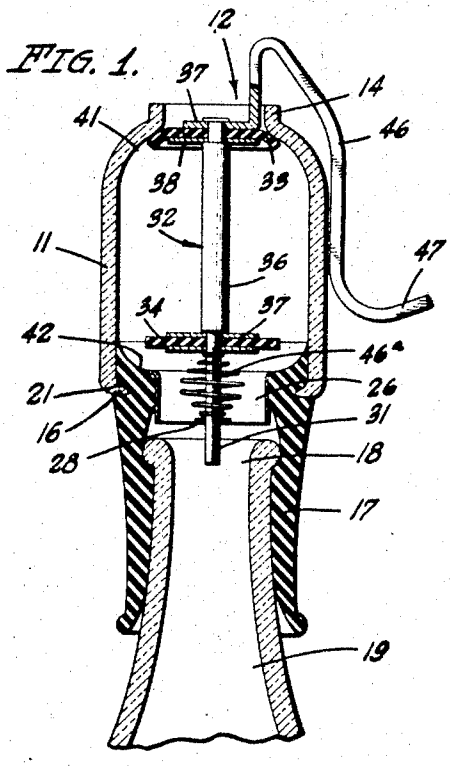


FIG. 2.

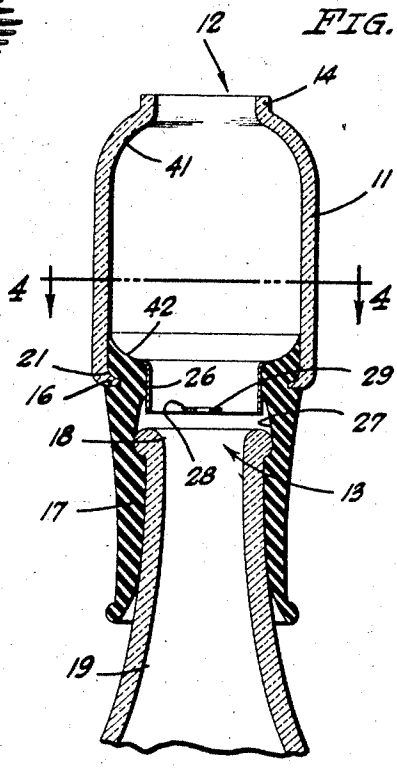
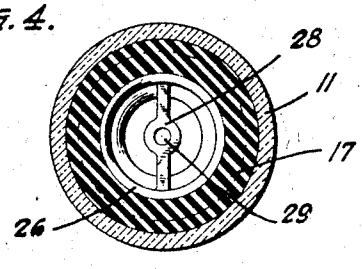


FIG. 4.



INVENTOR:
ROBERT LEE HUMBARD
BY
Stuart M. Mauk
ATTORNEY.

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BEVERAGE MEASURING AND DISPENSING DEVICE

Robert Lee Humbard, Palm Springs, Calif., assignor by order of court to Anne Humbard, widow of said Robert Lee Humbard, deceased

Application December 3, 1936, Serial No. 114,025
Renewed March 7, 1940

7 Claims. (Cl. 221—147)

This invention relates to dispensing devices, and has for an object the provision of a device adapted to be mounted upon the mouth of a bottle, and provided with means for measuring accurately and dispensing predetermined quantities of the liquid contents of the bottle. The device of the present invention constitutes an improvement over that forming the subject matter of Patent Number 2,044,945, issued to me on June 23, 1936.

A more detailed object of this invention is to provide a device of the general character described in the design of which various improvements have been incorporated, whereby a greatly simplified, and hence correspondingly less expensive, construction is provided.

A further object is to provide a measuring and dispensing device as described, having improved means for attaching it in operative relation upon a receptacle, whereby it can be used upon a much wider range of sizes of receptacles, its attachment is greatly facilitated and made more positive, and the speed of operation of the device is very greatly increased.

A still further object of the present invention is to design the dispensing device in such a manner that all the inner working parts can readily be removed, thus permitting free access to the interior of the measuring portion of the device, as well as to the valves, stem, and other working parts, thus making it possible to cleanse the entire device and to keep it in a thoroughly sanitary condition. This feature also reduces the cost of manufacture by reducing the amount of time and labor required for its assembly.

Another object is to provide an improved design of operating handle, whereby the device is made to fit the hand more comfortably, or to operate more smoothly and much more easily.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of my invention which is illustrated in the drawing accompanying and forming a part of the specification. It is to be understood that I do not limit myself to the showing made by the said drawing and description, as I may adopt variations of the preferred form within the scope of my invention as set forth in the claims.

Referring to the drawing:

Figure 1 is a vertical, medial, sectional view taken through a measuring device embodying the principles of the present invention, and through the upper end of a bottle upon which it is mounted in operative relation.

Figure 2 is a view similar to Figure 1, but with the valve assembly removed.

Figure 3 is a view in side elevation of the valve assembly ready for installation in the receptacle shown in Fig. 2.

Figure 4 is a transverse sectional view taken on the line 4—4 of Fig. 2, with the direction of view as indicated.

That form of my invention which has been chosen for illustration comprises a receptacle 11 of known volumetric capacity, preferably in the neighborhood of 1 oz. or 1¼ oz., and composed of any suitable material, preferably glass. Openings 12 and 13 are provided in the upper and lower ends respectively of the receptacle 11, and preferably a short tubular extension or rim 14 encircles the upper opening 12 to provide a pouring spout. An annular flange 16 extends inwards from the lower end of the receptacle 11.

The means for releasably attaching the measuring and dispensing device of the present invention to the receptacle the contents of which are to be measured and dispensed comprises a sleeve 17 of resilient material, preferably rubber. Instead of being in the form of a plug intended to be thrust into the mouth of a bottle, as in the case of the device forming the subject matter of my prior patent, identified hereinabove, the sleeve 17 is adapted to fit over the mouth 18 and upper portion of the neck 19 of a bottle, as clearly shown upon Figs. 1 and 2. An annular groove 21 is provided in the outer wall of the sleeve 17 adjacent its upper end, this groove 21 being adapted to receive the flange 16 of the receptacle 11 and thus securely fasten the receptacle 11 and the sleeve 17 together in operative relation.

The sleeve 17 being resilient, its upper end is collapsible, thus making it possible to slip the upper end of the sleeve 17 into the lower end of the receptacle 11, past the flange 16 until the flange and groove come into registry with each other, whereupon the sleeve 17 is permitted to expand, seating the flange within the groove 21. Inadvertent displacement from this engagement is prevented through the expedient of a tubular guide 26 which is adapted to be inserted into the upper end of the bore 27 of the sleeve 17 after the flange 16 has been seated in the groove 21. A spider 28 extends across the lower end of the tubular guide 26 and carries a suitable bearing 29 which is disposed axially with respect to the guide 26 to receive and guide the lower end of a valve stem 31.

The valve assembly indicated in its entirety at 32 comprises the stem 31 carrying upper and lower valves 33 and 34 respectively, held in spaced relationship preferably by a tube 36 interposed between the two valves. Each of these valves 33 is in the form of a disc of relatively thin flexible and resilient material, preferably rubber, disposed with its plane perpendicular to the axis of the stem 31. Each valve 33, 34 is embraced between two metal discs 37, 38 of materially less diameter than the valves themselves. The tube 36 is of such length that the spacing between the valves 33 and 34 is slightly less than that between the upper and lower valve seats 41 and 42 respectively. The upper valve seat 41 is provided by a substantially frustoconically shaped portion of the receptacle 11 just inside the tubular pouring spout 14, whereas the lower valve seat 42 is provided by the upper end of the sleeve 17 and the upper end of the tubular guide 26.

Whereas each of the valves 33 and 34 is of sufficient diameter to engage its associated seat 41, 42 respectively, in sealing engagement, the discs 37 and 38 are sufficiently smaller than the upper opening 12 to permit the valves to be bent around their peripheral edges substantially as indicated at the upper portion of Fig. 1, so that by exerting sufficient pressure against the lower end of the valve stem 31 the entire valve assembly 32 can be removed from the receptacle 11 through the upper opening 12. This greatly facilitates cleansing the entire device and makes it entirely possible to keep it in an entirely sanitary condition. This feature also reduces the cost of manufacture of the device by reducing the amount of time and labor required in its construction, because the valve assembly 32 can be assembled independently of the receptacle 11 and sleeve 17 and inserted therein afterwards as a complete unit.

A coil spring 46*a* encircles the stem 31 below the lower valve 34, hence when the device is assembled in operative relation the spring 46*a* is under compression between the spider 28 of the bearing 29 carried thereby and the lower disc 38 associated with the valve 34. It is apparent, therefore, that the spring 46*a* continually urges the valve assembly upwards to bring the upper valve 33 into sealing engagement with its associated seat 41. As shown upon Fig. 1, when the valve assembly 32 is in this position, the lower valve 34 is raised from its seat 42 permitting communication between the interior of the receptacle 19 upon which the device is mounted and the interior of the measuring receptacle 11. Hence, when the bottle 19 or other receptacle, the contents of which are to be dispensed, having a measuring and dispensing device of my invention mounted thereupon, is inverted, a quantity of the contents of the bottle 19, determined by the volumetric capacity of the measuring dispenser 11, will flow into the receptacle 11. Then, by movement of the valve assembly 32 to its alternate position wherein the upper valve 33 is unseated and the valve 34 is seated, that measured quantity of the liquid will be permitted to flow through the pouring spout 14.

Simply by releasing the valve assembly 32 it will be returned to its initial position, again seating the valve 33 and unseating the valve 34, whereupon the same quantity of liquid will again be measured into the receptacle 11, which may then be released by the same movement of the valve assembly 32. One of the advantages of using the sleeve 17, adapted to engage over the outside of the neck 19 of a bottle, instead of a plug adapted to be thrust into the neck of a bottle, as in the case of my prior device, the speed of operation of the measuring dispenser is greatly increased because of the fact that that opening 13 is of greatly increased size. Similarly the outlet opening 12 is also larger, it having been made large enough to permit the entire valve assembly 32 to be thrust therethrough, as described hereinabove.

Operation of the device is effected by means of a handle 46 extending from the upper end of the valve stem 31 upwards through the outlet opening 12 far enough to clear the upper end of the pouring spout 14. Preferably this handle 46 is formed integral with the uppermost disc 37, which is retained against slipping off the stem 31 by means of a suitable abutment thereon, such as a head formed integral with the stem. From this position the handle 46 extends downward along the outside of the receptacle 11, its lower end 47 being deflected outward to provide a convenient and comfortable finger grip whereby movement of the valve assembly 32 can be moved with the greatest ease by the first finger of the hand in which the bottle 19 is held.

I claim:

1. In a liquid dispenser, a receptacle having an opening at each end, means providing a valve seat encircling each of said openings, a valve stem reciprocable within said receptacle, a handle carried by said stem and extending through the upper of said openings and thence exteriorly of said receptacle along a side thereof and being guided for reciprocatory movement upon said side, and a valve associated with each of said seats and carried by said stem, said valves being spaced from each other a distance less than that between said seats whereby either valve can be engaged with its seat and the other valve disengaged from its seat, each of said valves comprising a resilient member engageable in sealing contact with its associated seat and deformable to diameter sufficiently small to permit its passage through said upper opening whereby said stem, valves and handle can be removed from said receptacle.

2. In a liquid dispenser, a receptacle having an opening at each end, means providing a valve seat encircling each of said openings, a valve stem reciprocable within said receptacle, a handle carried by said stem and extending through the upper of said openings and thence exteriorly of said receptacle along a side thereof and being guided for reciprocatory movement upon said side, and a valve associated with each of said seats and carried by said stem, said valves being spaced from each other a distance less than that between said seats whereby either valve can be engaged with its seat and the other valve disengaged from its seat, each of said valves comprising a resilient member normally of greater diameter than said upper opening, said valves and stem normally being retained within said receptacle by engagement between the upper of said valves with its associated seat, and both of said valves being deformable to a diameter sufficiently small to permit their passage through said upper opening whereby said stem and valves can be removed from said receptacle.

3. In a liquid dispenser, a receptacle having an opening at each end, an annular flange encircling the opening in the lower end of said receptacle, a sleeve having its upper end extending into said

lower opening, said sleeve being of resilient, flexible material and deformable to permit engagement of its lower end upon containers of various sizes, and said sleeve having an annular groove in one face thereof, said flange being seated within said annular groove, non-resilient means engaging the opposite face of said sleeve to retain said sleeve in engagement with said flange, a valve seat encircling each of said openings, a valve associated with each of said seats, and means for moving either of said valves optionally into sealing engagement with its associated seat and the other valve out of engagement with its associated seat.

4. In a liquid dispenser, a receptacle having an opening at each end, an annular flange encircling the opening in the lower end of said receptacle, a sleeve having its upper end extending into said lower opening, said sleeve being of resilient, flexible material and deformable to permit engagement of its lower end upon containers of various sizes, and said sleeve having an annular groove in one face thereof, said flange being seated within said annular groove, non-resilient means engaging the opposite face of said sleeve to retain said sleeve in engagement with said flange, means on said receptacle providing a valve seat encircling the opening in the upper end of said receptacle, means carried by said non-resilient means providing a lower valve seat, a valve associated with each of said seats, and means for moving either of said valves optionally into sealing engagement with the associated seat and the other valve out of engagement with its associated seat.

5. In a liquid dispenser, a receptacle having a pair of opposed openings, a valve stem reciprocable within said receptacle, a valve associated with each of said openings and carried by said stem within said receptacle, said valves being spaced apart a distance less than that between said openings whereby either valve optionally can be moved into closing relationship with its associated opening as the other is moved out of closing relationship with its associated opening, each of said valves being larger than its associated opening whereby it is adapted to engage said receptacle around that opening when in closing relationship therewith, and each of said valves being of resilient, deformable material adapting them for removal from said receptacle through one of said openings, and means accessible outside said receptacle for moving said stem.

6. In a liquid dispenser, a receptacle having a pair of opposed openings, a valve stem reciprocable within said receptacle, a valve associated with each of said openings and carried by said stem within said receptacle, each of said valves comprising a disc larger in diameter than the associated opening whereby it is adapted to engage said receptacle around that opening when in closing relationship therewith, and each of said valves being of flexible, resilient material adapting it for removal from said receptacle through one of said openings, said valves being spaced apart a distance less than that between said openings whereby either valve optionally can be moved into closing relationship with its associated opening as the other is moved out of closing relationship with its associated opening, and means accessible outside said receptacle for moving said stem.

7. In a liquid dispenser, a receptacle having a pair of opposed openings, a valve stem reciprocable within said receptacle, a valve associated with each of said openings and carried by said stem within said receptacle, each of said valves comprising a disc larger in diameter than the associated opening whereby it is adapted to engage said receptacle around that opening when in closing relationship therewith, and each of said valves being of flexible, resilient material adapting it for removal from said receptacle through one of said openings, said valves being spaced apart a distance less than that between said openings whereby either valve optionally can be moved into closing relationship with its associated opening as the other is moved out of closing relationship with its associated opening, a backing disc associated with each of said valves and engaging that face thereof which is farther from the associated opening, each of said backing discs being substantially rigid and of smaller diameter than one of said openings, and means accessible outside said receptacle for moving said stem.

ROBERT LEE HUMBARD.