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POURING DISPENSER

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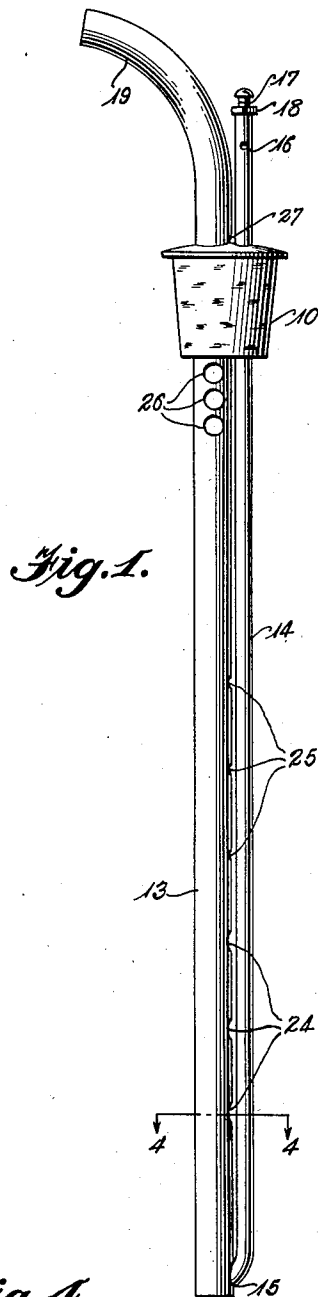


Fig. 1.

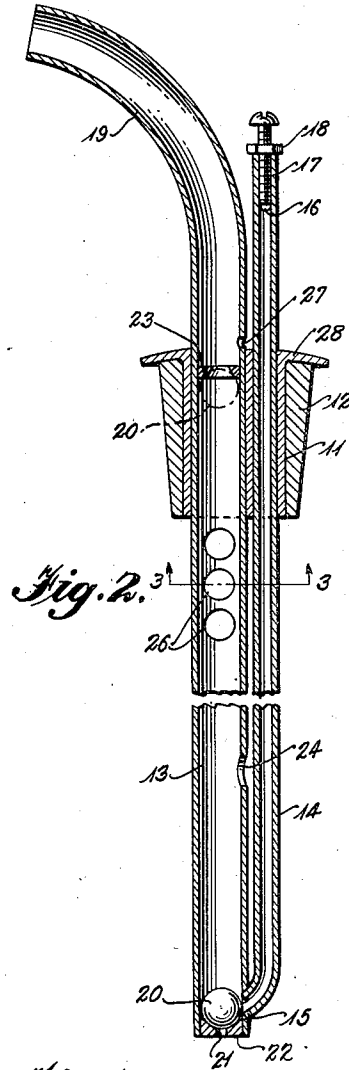


Fig. 2.

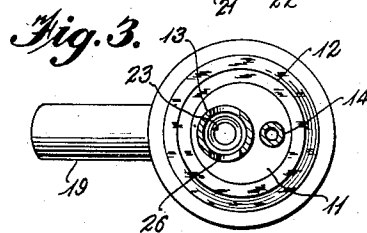


Fig. 3.



Fig. 4.

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UNITED STATES PATENT OFFICE

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POURING DISPENSER

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2 Claims. (Cl. 222-477)

The invention relates to pouring dispensers of the type used in pouring a definite quantity of liquid from a closed container.

It is an object of the invention to provide a dispenser which may be applied to any easily tiltable container to provide means to pour therefrom a definite quantity of liquid at each tilting of the container.

It is a further object of the invention to provide a device of this character wherein means are embodied to adjust the amount so poured, within limits.

Further objects of the invention will appear from the following description when read in connection with the accompanying drawing showing an illustrative embodiment of the invention, and wherein—

Figure 1 is a side elevation;

Figure 2 is a central vertical section upon an enlarged scale broken away to shorten the showing;

Figure 3 is a transverse section on line 3-3 of Figure 2; and

Figure 4 is a transverse section on line 4-4 of Figure 1.

As shown the device is constructed for use with a bottle, which bottle must have a neck shaped to receive a stopper as cork or the like. It is obvious that instead of a stopper a screw cap could be applied to the device for use upon containers of other character.

As shown herein a stopper 10 is desirably formed of a rigid body 11 which may be of metal, hardened plastic or the like provided with a sleeve 12 as of cork. Passing through the stopper 10 and adapted to dip into the liquid to be dispensed contained in the container, not shown, there are shown tubes 13 and 14. The tube 13 is for the passage of liquid and tube 14 for air supply, which tubes are joined at 15 adjacent the lower end thereof whereat the tube 14 opens into the tube 13.

To control the flow of air into the container through the tube 14 there is shown an air inlet 16 under control of a screw 17 provided with a lock nut 18. By adjusting the position of the screw 17 relative to the opening 16, the rate of entrance of air into tube 14 and therefore into the container may be controlled. The tube 13 is shown as curved at 19 for convenient delivery of liquid to a receptacle as a glass.

To determine the length of time during which liquid is allowed to flow from the device at the rate determined by the rate of inflow of air, there is shown a ball 20 seating over a lower perfora-

tion 21 in a plug 22 closing the lower end of the tube 13. To cut off the flow of liquid from the device there is shown an upper seat 23 to which the ball rolls when the container carrying the device is tilted. To admit liquid to the tube 13 while pouring therefrom there are shown a plurality of holes 24, 25 and 26. The holes 26 are provided close to the stopper 10 in order to enable the last portion of the liquid to be delivered to the tube 13 when the container is inverted.

As the liquid in the container is depleted, more and more container-held air must get into the tube 13 exchanging places with the liquid that is in the tube when the container is upright. Therefore a plurality of holes 24, 25 are provided to provide for the various heights when the container is tilted. To allow the last of the liquid to escape readily from the pouring end of tube 13, an air intake 27 is shown closely adjacent the cap 28 of the stopper.

Liquid can only flow out of the bottle as air is admitted thereto and therefore the adjustment of screw 17 will determine the rapidity of flow. If no further provisions were made except the control of air intake, liquid would continue to flow as long as the device was tilted or any liquid remained in the container. The ball 20 is provided to place a limit on the time during which the liquid is allowed to flow, which time is that required for the ball 20 to roll from seat 21 to seat 23. If the container be tilted sharply with reasonable uniformity, this time of flow will be sufficiently uniform for all practical purposes to deliver a desired amount at each tilting, but will of course differ with the viscosity of the different liquids. Therefore a few trials will enable the user to adjust the screw 17 so that the desired amount of liquid will flow during the roll of the ball, at each successive tilting of the container.

It is obvious that the projection of the tube 13 and 14 above the closure may be made of plastic integral with the body 11, and the portions thereof within the container may be made of another material as glass with their upper ends received in the passages through the body, their ends surrounded with packing material as cork sleeves.

Minor changes may be made in the physical embodiment of the invention within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A dispensing device for use with a tiltable container comprising, in combination: a con-

tainer closure; a pouring conduit extending in both directions from the closure, opening there-through and formed with an internal port adjacent said closure; an air inlet pipe also opening through the closure and extending in both directions therefrom, said pipe opening into the conduit adjacent its end to be within the container to which the closure is applied; a perforated seat at the last named end of the conduit; a ball movable in the conduit, normally seated upon said seat and movable to close said port when the device is tilted to pour liquid therefrom; said conduit formed with perforations adjacent the closure; and means to adjust the rate of flow of air through said pipe.

2. A dispensing device for use with a tiltable container comprising, in combination: a container closure; a conduit passing through, and projecting from said closure to serve as a pouring spout; said conduit projecting below said closure

a substantial distance to dip into the liquid in a container to which the device may be applied; said conduit having a liquid ingress opening adjacent said closure and a series of air ingress openings beginning at a point adjacent its lower end; a valve seat in said conduit above said liquid ingress opening; a ball movable in said conduit to said valve seat when the device is tilted to pouring position; a vent tube passing through said closure parallel with and opening into said conduit adjacent its lower end; vent adjusting means carried by said tube above said closure; and means at the lower end of said conduit to retain the ball therein; whereby said ball freely slidable in a fixed path in the conduit determines the time of flow, and adjusted air intake determines the rate of flow of liquid from a container when applied thereto and when the container is tilted.

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