June 16, 1942. F. M. GAINES 2,286,906

BOTTLE POURING SPOUT

Filed May 13, 1940

Fig. 1.

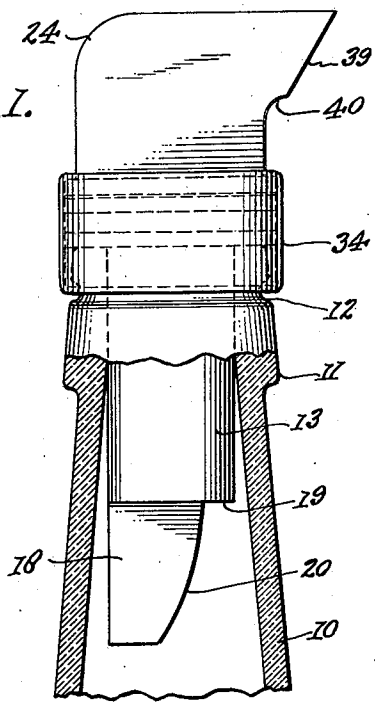


Fig. 2.

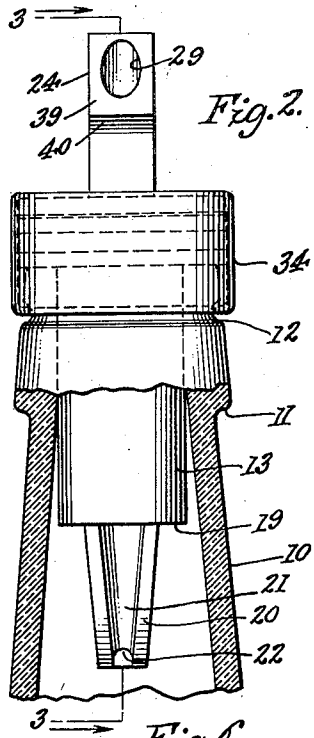


Fig. 3.

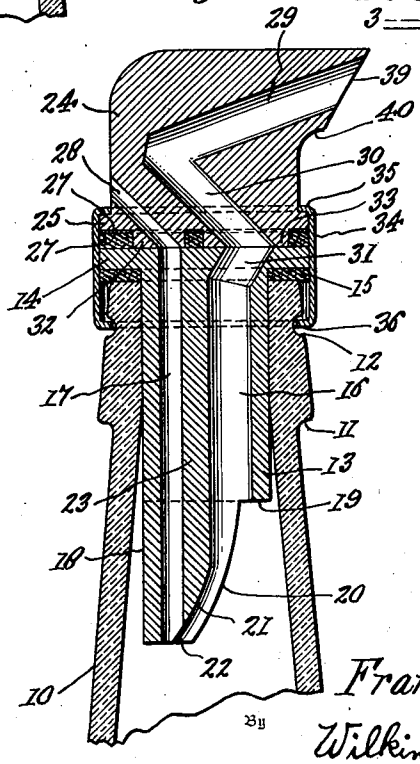


Fig. 4.

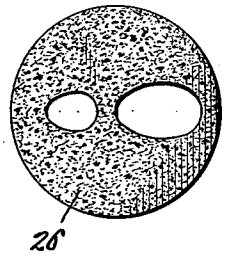
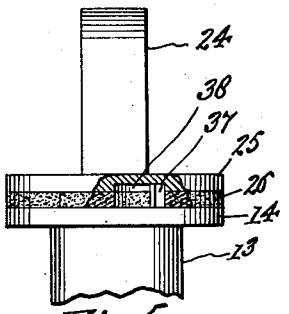


Fig. 5.



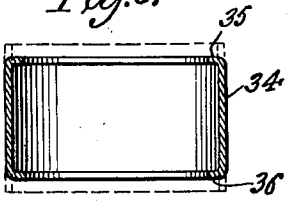


Fig. 6.

Inventor

Frank M. Gaines

By Wilkinson & Mawhinney

Attorneys.

Patented June 16, 1942 2,286,906

UNITED STATES PATENT OFFICE

2,286,906

BOTTLE POURING SPOUT

Frank Melton Gaines, Louisville, Ky., assignor to Frankfort Distilleries, Incorporated, Louisville, Ky., a corporation of West Virginia

Application May 13, 1940, Serial No. 334,933

1 Claim. (Cl. 215—79)

The present invention relates to improvements in bottle pouring spouts, and has for an object to provide an improved spout for use in connection with whiskey and other bottles in which convenience is promoted in the pouring and decanting of liquors and other liquids and in which the refilling of the bottle with counterfeit contents will be discouraged.

Another object of the invention is to provide an improved fitment for whiskey or other bottles involving a movable valve spout adapted to occupy closed and opened positions, and which when opened enables the bottle to empty faster.

The invention also has for an object the inclusion in the fitment of an internal member in the bottle having the function to avoid leaving in the bottle any substantial residue of the liquid in the final pouring or decanting of the contents.

The invention also contemplates the provision of an improved device or fitment for bottles in which pouring will be practically dripless and which when the pouring operation is concluded and the fitment moved to closed position will avoid the discharge of any residual drops of the liquid which may have remained in and about the discharge mouth of the pouring spout.

Further objects of the invention are to produce a pouring device or fitment which will be easy to apply mechanically, not unreasonable in cost and fast emptying.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claim appended hereto.

In the drawing, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a side elevation, with parts broken away and parts shown in section, of an improved bottle pouring spout constructed in accordance with the present invention and shown applied to the fragment of a whiskey or other bottle.

Figure 2 is a similar view taken at substantially right angles to Figure 1.

Figure 3 is a vertical central section taken on the line 3—3 in Figure 2.

Figure 4 is a plan view of an improved gasket employed.

Figure 5 is a cross section through a form of ferrule or ring employed, and

Figure 6 is a fragmentary front elevation of the adjoining parts of the two fitment members showing a method of limiting the relative rotary movement of the same.

Referring more particularly to the drawing, 10 designates the neck of a whiskey bottle or other container. Such bottles usually have a lip 11 with an annular groove 12 therein.

In accordance with the invention I place a plug 13 in the neck of the bottle so it fits with frictional tightness therein. Such plug is provided with an external substantially horizontal flange 14 at its upper portion which overlies the rim of the bottle neck and rests upon a washer 15 which seats upon such rim of the bottle neck.

The washer may be made of rubber, fiber or other desired material and its presence at this point prevents leakage from the bottle along the outside of the plug 13.

Extending vertically and longitudinally through the plug are liquid outlet and air inlet passages 16 and 17 respectively. At the lower end of the plug is a quill 18 which is a reduced part of the plug 13 and is produced by the formation of a step 19 and curved walls 20 and 21. The curved wall 20 extends from the step 19 downwardly and toward the left as viewed in Figure 3. The curved wall 21 slopes in the same direction and is substantially concentric with that portion of the curved wall 20 within which it extends. The curved wall 21 slopes down to a port 22 which establishes communication at the lower end of the quill between the passages 16 and 17. The curved wall 21 is on the lower end of partition 23 which separates the passages 16 and 17.

Positioned above and upon the plug is a valve spout 24. A substantially horizontal outstanding flange 25 at the lower portion of the valve spout 24 rests in common with the bottom of the valve spout upon a gasket 26 of rubber or other appropriate material which may or may not be connected or affixed to the valve spout 24 by suitable adhesive indicated at 27. An air inlet passage 28 in the valve spout 24 is oblique in position and communicates at its lower end with the upper end of the similar passage 17 of the plug 13, which passage 17 is preferably coaxial throughout the entire length of the plug and quill.

In the valve spout 24 is also a liquid outlet passage composed of the acutely angled sections 29 and 30, of which the section 29 is the outlet section. This outlet section 29 slopes upwardly toward the discharge orifice 39. The discharge orifice is in an outwardly projecting part 40 of the valve spout 24 and the orifice 39 is undercut as indicated in Figure 3. The lower end of the passage section 30 communicates with the angular upper end 31 of the liquid outlet passage 16 of the plug.

Bosses 32 and 33 extend downwardly from the lower portion of the valve spout 24 and surround the lower ends of the passages 28 and 30 respectively. These bosses extend into openings made to receive the same in the gasket 26 whereby portions of the gasket 26 surround both bosses 32 and 33. The gasket 26 also lies against the upper face of the plug 13 and the lower face of the valve spout 24. It therefore forms an effective seal against any liquid seeping out of the passages between the plug 13 and the valve spout 24.

A ferrule 34 of metal, Celluloid or like material is of a sufficient diameter to fit over the flanges 14 and 25 and the same has upper and lower inturned ends 35 and 36. The inturned lower end 36 occupies the annular groove 12 of the bottle neck while the upper inturned end 35 engages over the flange 25. Thus the ferrule 34 performs the dual function of binding the valve spout 24 to the plug 13 and binding the entire fitment or device to the neck of the bottle.

As shown in Figure 6 a pin 37 on the plug 13 projects upwardly and into a circumferential slot 38 in the valve spout 24 in order to limit the rotational movement of the valve spout 24 in either angular direction.

In use of the device when the valve spout 24 is turned in one direction it will cause its passages to align or register with the similar passages in the plug. This position of the parts is shown in Figure 3. By decanting or tilting the bottle to the right in this figure the liquid contents will flow out through the liquid outlet passages 16, 31, 30 and 29 and out the discharge orifice 39 into a whiskey glass or other destination. Meantime air may be drawn in through the aligning passages 28 and 17 in order to relieve any vacuum which would tend to be created by the removal of the liquid contents. In this way fast emptying of the bottle is provided for.

When the valve spout 24 is rotated to the opposite limit of its movement the alignment between the passages of the spout 24 and those of the plug 13 is destroyed and the bottle is closed effectively for all purposes as though a stopper had been inserted in the same.

In assembling the parts the washer 15 may be first slipped over the plug 13 and the plug thereupon inserted in the neck of the bottle until the flange 14 and the washer 15 are tightly against the rim of the neck. Then the ferrule 34 in the condition shown in dotted lines in Figure 5 is slipped downwardly over the flange 14 and the bottle neck and thereupon the valve spout 24 with its gasket 26 in place is inserted downwardly upon the plug 13 and within the upper end portion of the ferrule 34.

The ends 35 and 36 of the ferrule may be thereupon upset inwardly so as to bind the parts together and to the bottle, allowing of the free rotation of the valve spout 24 within the limits of the pin and slot connection 37, 38.

The step 19 and the open side of the quill 18 permit all of the contents of the bottle to be drained out the liquid discharge passages while the continuance of the air inlet passage 17 down to the lower end of the quill and the continuance of the partition 23 down to the low point of the quill insures that the liquid contents of the bottle does not get into the air inlet passages and spill out of the diagonal or oblique passage 28. The curved walls 20 and 21 also subserve this purpose and tend to guide the liquid contents down into the passage 16 when the bottle is upturned or decanted.

The port 22 provides a means of communication between the passages 16 and 17 at their highest points when the bottle is upturned in order to break the vacuum in alignment with the outlet of the liquid which is the most favorable point for breaking such vacuum and the point at which any trapping of the liquid would be most apt to occur.

The valve spout 24 may be of any solid material, transparent or opaque and the gasket 26 may be of cork, rubber or any flexible material.

The plug 13 may likewise be solid and held rigid to the bottle with an intervening washer 15 to prevent leakage. All the parts are held together in their proper relation by the ring or ferrule 34.

In the "off" position the gasket 26 closes the ends of the passages 16 and 17 and thus thoroughly seals off any seepage of liquid. The turns in the larger liquid outlet passage and the slope 20, 21 from the larger opening 16 to the smaller opening 17 make refilling difficult. The plug 13 fitting into the bottle makes the bottle empty faster and prevents the leaving of much liquid in the bottle when empty. The arrangement also makes the device substantially dripless, easy to apply mechanically and fast emptying. Any residual liquid in and about the orifice 39 or in the passage section 29 will tend to flow back into the bottle when the bottle is placed upright and due to the undercutting of the orifice 39 the action of dripping will also be minimized.

When the bottle is erected after being decanted the return flow of the liquid contents down through the passage 16 and past the port 22 will tend to syphon air into the bottle through the passages 28 and 17 and this will further tend to draw down the liquid throughout all the passages 29, 30, 31 and 16 thus avoiding dripping and leakage.

The gasket 26 may be integral with either the valve spout 24 or the plug 13 and it may be of soft rubber or of hard rubber or other material. The washer 15 may also be of soft rubber or of hard rubber.

The ring or ferrule 34 may be of a material which is well known, having the capacity to sustain a bending in only one direction so that after the bends 35 and 36 have been made therein in the act of installing the device upon the bottle, any attempt by counterfeiters to remove the ring as a preliminary to taking off the valve spout 24 for the purpose of refilling the bottle with spurious contents, would result in the breakage of the ring 34 and if this ring were marked with the name of the genuine proprietor of the whiskey product or with some trade-mark or trade name, owing to the inability of the counterfeiter or bootlegger to obtain a new supply of the rings or ferrules from the authorized source, even though a substitute ferrule could be utilized to reaffix the valve spout 24 in place, the lack of the proper ferrule would immediately reveal the fraud and thus the public would be apprised that the contents was not genuine.

Important particulars in connection with this invention are: first, the zigzag opening which prevents refilling; and second, the small groove which leads to the opening of the air-vent on the inside of the bottle. This last-mentioned also prevents refilling or at least makes it difficult.

Should the bottle be laid on its side with the orifice 39 up refilling would be difficult, if not impossible, with the zigzag passages but in any

event if liquid did enter the bottle as soon as it built up to the level of passage 17 an air-lock would be established preventing the entrance of further liquid. Also during the entrance of the liquid through passage 16 such entering liquid would flow down curved wall 21 and through port wall 22 across passage 17 thus forming a substantial air-lock. While this amount of fluid in the end of passage 17 might be forced out of the passage 17 by the pressure still it would make the action of refilling ineffectively intermittent and troublesome and besides the piston of liquid moving out passage 17 would tend to draw other liquid out with it and thus the passages 17 and 28 would tend to move the liquid out almost as fast as it entered. The opening 28 will be very small so as to prevent filling from this side.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claim.

What is claimed is:

An improved bottle pouring spout comprising a plug having liquid outlet and air inlet passages therein, a quill portion on the inner part of said plug with a laterally cut-away and stepped portion laying open one side of said liquid outlet passage for an appreciable distance upwardly along said plug, the walls of said cut-away portion being curved from the stepped to the lower free end of said quill, said quill having a port between the two passages at the lowermost part of said quill, said quill and plug having a partition between said passages with a lower curved edge sloping toward said port, a valve spout rotatably mounted upon said plug and having corresponding liquid outlet and air inlet passages, and means for connecting said spout to the plug and to the bottle.

FRANK MELTON GAINES.