

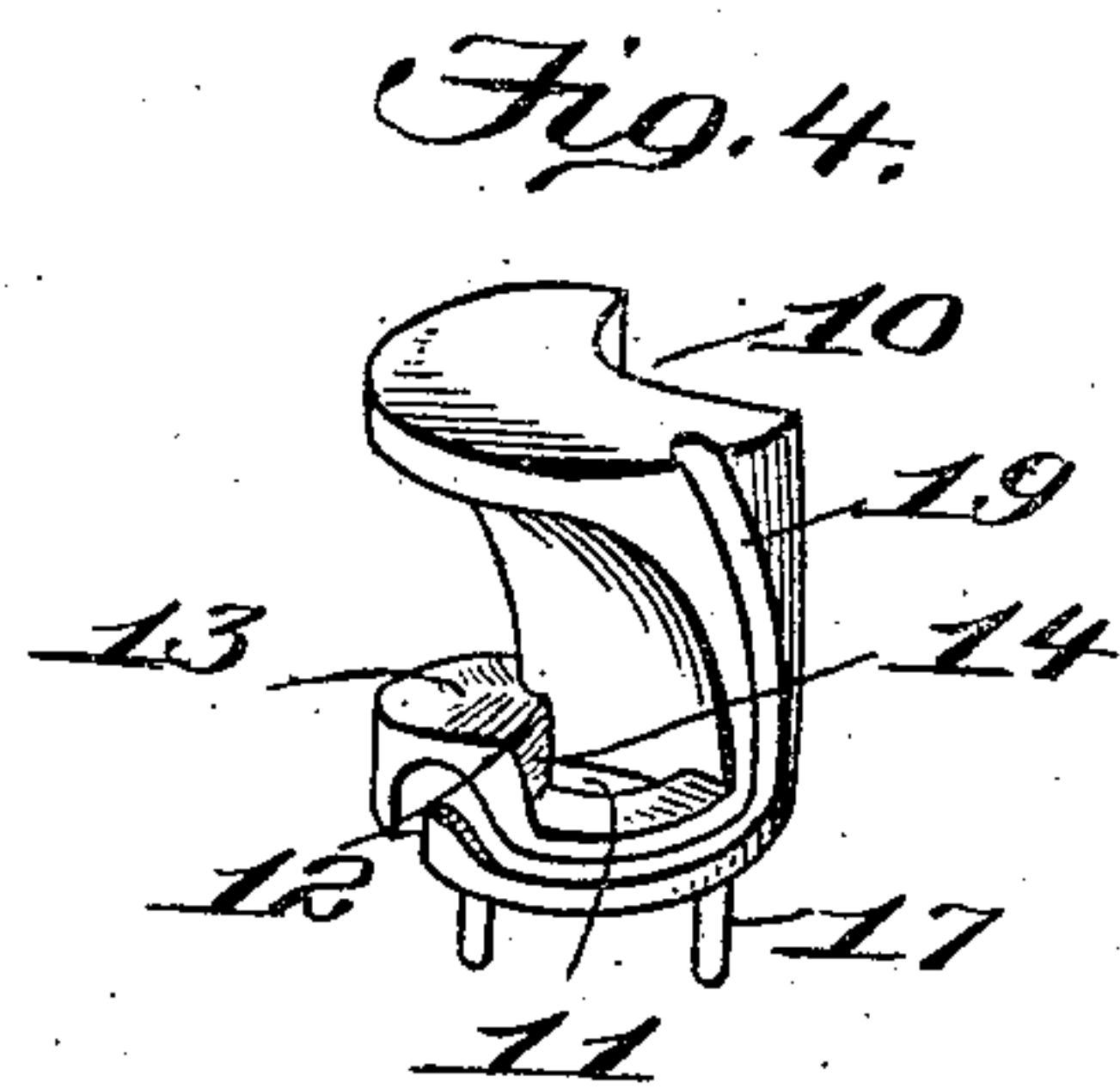
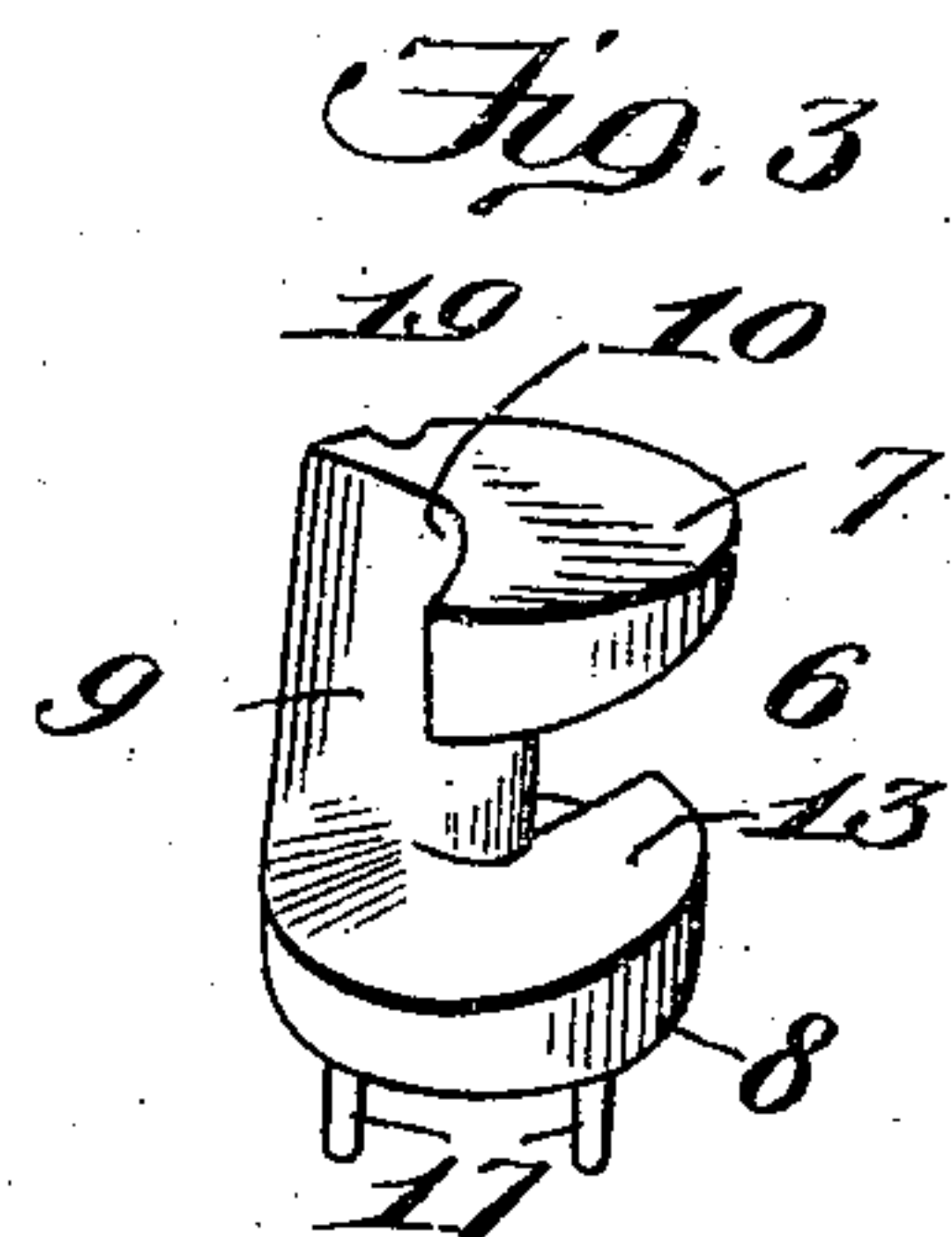
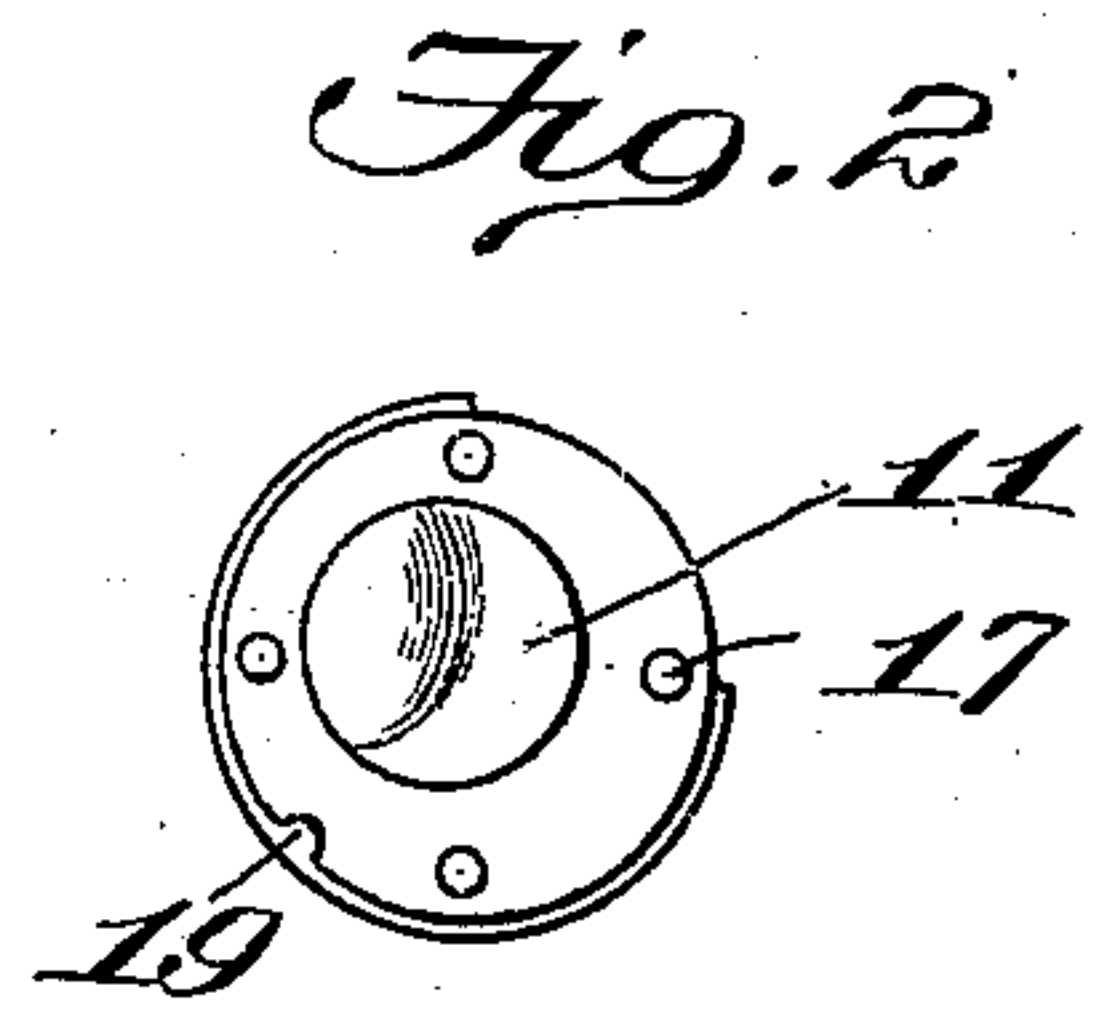
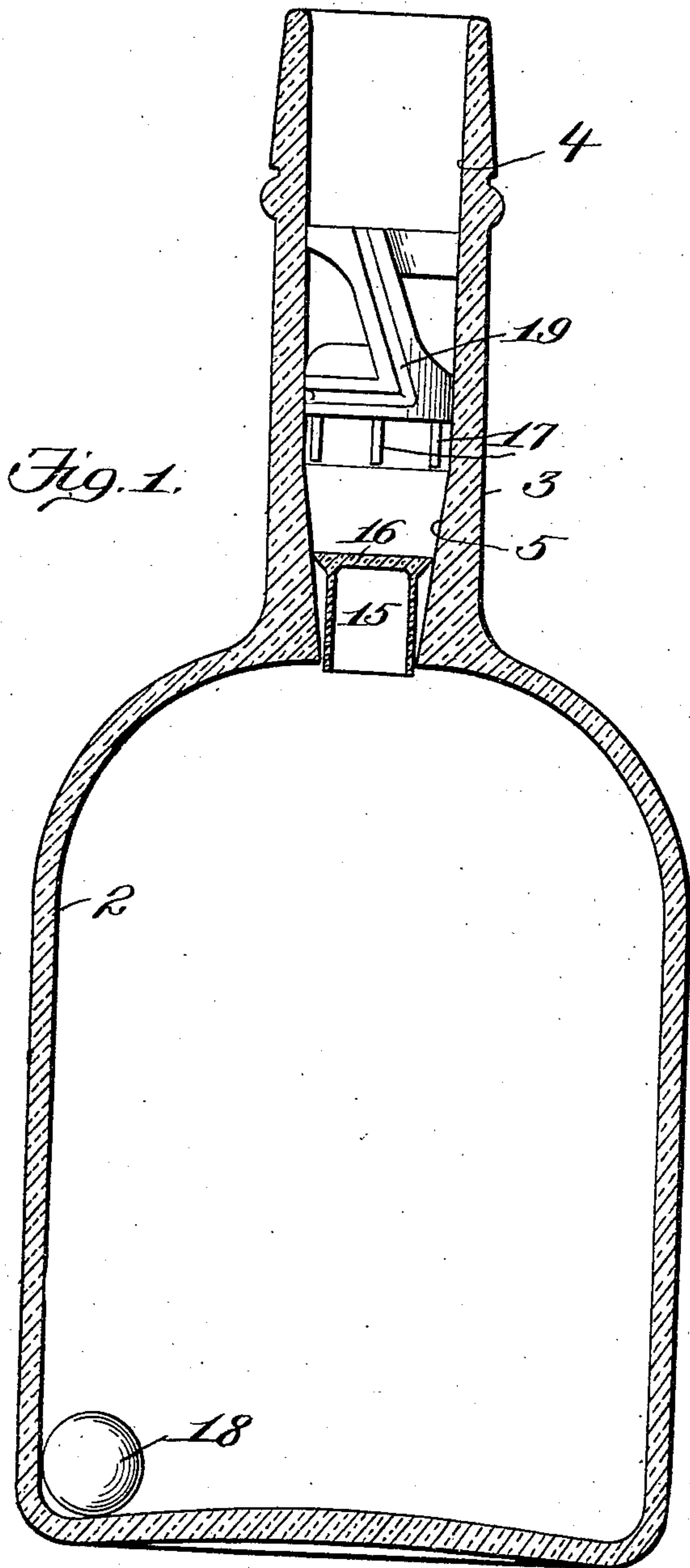
No. 855,211.

PATENTED MAY 28, 1907.

F. S. TULL.

BOTTLE.

APPLICATION FILED JAN. 14, 1907.



Witnesses:  
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Inventor  
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*Att'y*



# UNITED STATES PATENT OFFICE.

FRANCIS S. TULL, OF HOUSTON, TEXAS.

## BOTTLE.

No. 855,211.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed January 14, 1907. Serial No. 352,275.

*To all whom it may concern:*

Be it known that I, FRANCIS S. TULL, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented new and useful Improvements in Bottles, of which the following is a specification.

This invention relates to bottles, and more especially to that class having means to prevent the refilling of a bottle when the original contents have been poured therefrom.

In the present case, and in accordance with my invention, I insert in the neck of a bottle a plug and a valve, the parts being so constructed and related as to permit the free pouring of the liquid within the bottle therefrom and prevent the introduction of liquid from without the bottle into the same.

In the drawings accompanying and forming a part of this specification Figure 1 is a vertical section of a bottle embodying my invention; Fig. 2 is a bottom plan view of the plug shown in Fig. 1; and Figs. 3 and 4 are perspective views of said plug.

Like characters refer to like parts throughout the several figures.

In the drawings I have illustrated an advantageous form of embodiment of my invention which to enable those skilled in the art to practice the invention will be fully set forth in the following description; while the novelty of the invention will be included in the claims succeeding said description.

I prefer to make the bottle, the plug, valve and valve actuator hereinafter described of glass, although of course this is not essential for while the bottle itself might be made of glass or some equivalent substance, it is not necessary absolutely that the plug, valve and valve actuator be made of such material.

Referring now more particularly to the drawings and especially to Fig. 1 thereof, the numeral 2 designates the body of a bottle, and 3 the neck thereof. The passage through the neck is formed by a substantially cylindrical portion 4 and an inwardly tapered portion 5, the cylindrical portion 4 merging into the tapered portion 5, and the latter opening directly into the interior of the body 2.

Within the neck 3 and preferably situated in the cylindrical portion 4 thereof is a plug such as that denoted in a general way by 6. The plug 6 is ordinarily so disposed within the neck 3 as to leave ample space in said neck beyond the top face of the plug for an

ordinary stopper, although when a cap closure is employed for the neck the top of the plug may be substantially coincident with the upper edge of the bottle neck. In other words, it is not essential that the plug 6 be located at any particular place in the bottle neck. In the present case said plug consists of an upper head as 7 and a lower head as 8, and a connecting neck as 9, the three parts being usually integral and being permanently held within the bottle neck in any desirable way. For example, the bottle neck before the plug is introduced thereinto can be slightly fused, after which the plug can be put into place and when the glass cools down it will hold the plug solidly and firmly in position. Or the plug may be cemented in place by material other than that composing the bottle.

In the periphery of the upper head or disk 7 I form an aperture as 10 which constitutes an outlet in the plug for the liquid in the bottle. In the lower head or disk 8 I form a perforation or hole as 11 which forms an inlet for the plug. In the present instance the inlet 11 is disposed as nearly as possible centrally of the said lower head or disk 8 and the peculiar purpose for this will hereinafter appear. The neck 9 extends at an angle to the two heads 7 and 8, and it will be seen that the outlet 10 is at one side of the neck 9; while the inlet 11 is at the opposite side thereof, whereby the neck acts as an effective barrier between said outlet and inlet to prevent the passing of an instrument exteriorly of the bottle through said inlet.

Upon the lower head 8 is a bulge or enlargement 12 having an upwardly sloping face 13 and a downwardly sloping face 14. I speak of the face 13 as upwardly sloping as it slopes upward toward the inlet 11 and the face 14 is downwardly sloping as it slopes toward said inlet. Should a piece of wire be passed through the outlet 10 with the object of projecting the same through the inlet to reach the valve hereinafter described, the lower end of the piece of wire will strike the sloping face 13 whereby such wire will be bent or doubled on itself. I thereby provide two effective barriers to prevent the passing of wire through the inlet 11. Should a slender stick strike the inclined face 13 and should sufficient downward end thrust be exerted thereon, the face 13 will break said stick.

The valve works below the plug 6 and that



shown is designated by 15, it consisting of a cylindrical body provided with an upper head 16, but having no lower head. In other words, the lower end of the valve 15 is open. The head 16 extends outward beyond the body of the valve and is tapered inward. The valve is adapted to play in the tapered portion 5 of the bottle neck, and to find a seat against said tapered portion thereby to prevent the flow of liquid into the bottle from outside the same. By tipping or inverting the bottle the valve 15 can be moved away from its seat in the narrower part of said portion 5 to travel toward the wider part of said tapered portion in order to permit liquid from the bottle to pass through said tapered portion around the valve through said inlet 11 and finally through the outlet 10.

There are shown as depending from the lower head 8 of the plug several stop pins 17. These may be of any number, for example four, and they extend at substantially right angles from said lower head near the periphery thereof and prevent the valve coming in contact with the plug as in case there was a direct engagement between the valve and plug when the latter was moved away from its seat, liquid could not pass from the bottle.

It will be remembered that the inlet 11 has been described as being disposed substantially centrally of the head 8, this being for the purpose of causing the projection of a stream of fluid passed into the bottle neck from outside of the same to strike approximately centrally of the valve and to force the same squarely toward its seat.

Within the body of the bottle is a valve actuator as 18 which may consist of a ball, and which when the bottle is inverted or tipped over, will be caused to strike against the valve with a force sufficient to cause the unseating of the valve should there be any tendency of the latter to remain closed by the action of the vacuum in the bottle body. This ball 18 when the bottle is fully inverted closes the opening between the neck and body thereby acting as a valve to prevent refilling of the bottle when the same is in such condition. Should one by manipulation of the bottle or shaking thereof attempt to refill the bottle, such action will result in breaking the valve by the ball, and as soon as this is seen it will be evident at once to a purchaser that an attempt has been made to reuse a bottle emptied of its original contents.

Exteriorly of the plug I prefer to provide an air vent as 19 which extends in an irregular direction from the lower head to the upper head. This vent which is made in the form of a channel commences at the lower face of the lower head 8, extends upward a short distance, then downward angularly for a short distance, then horizontally, then up-

wardly at an angle along the neck 9 and across the head 7.

Having described the invention what I claim, is:—

1. A bottle having a discharge passage, a plug fitted in said passage and involving two heads and a connecting neck, one head having an outlet located at one side of said neck, and the other head having an inlet located at the opposite side of said neck, and said lower head having means between the outlet and inlet whereby a wire which may be inserted into the bottle will be bent.

2. A bottle having a discharge passage, and a plug fitted in said passage involving upper and lower heads and a neck connecting the heads, the upper head having an outlet at one side of said neck, and the lower head having an inlet at the opposite side of said neck, and said lower head also having a bulge on its upper side provided with an inclined face which slopes upward toward said outlet.

3. A bottle provided with a discharge passage, a plug fitted in said discharge passage and provided with upper and lower heads and a connecting neck for the heads, the upper head having an outlet, and the lower head having an inlet substantially centrally thereof, and a valve in said passage below the plug.

4. A bottle provided with a discharge passage, a plug fitted in said discharge passage and provided with upper and lower heads and a connecting neck for the heads, the upper head having an outlet, and the lower head having an inlet substantially centrally thereof, and a valve in said passage below the plug, said lower head having depending pins to prevent the valve from directly engaging the plug.

5. A bottle provided with a discharge passage, a plug fitted in said passage and involving upper and lower heads, and a connecting neck for said heads, the upper head having an outlet, and the lower head having a substantially centrally disposed inlet, and a valve movable below the plug, the latter having pins to prevent the valve coming into direct contact therewith.

6. A plug for use in bottles comprising two heads and a connecting neck, one head having an outlet at one side of the neck, and the other head having an inlet at the opposite side of the neck, and said plug having an air vent extending along the lower head, along the neck and across said upper head exteriorly thereof.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANCIS S. TULL.

Witnesses:

L. CRAWFORD,  
CHAS. C. McRAE.