

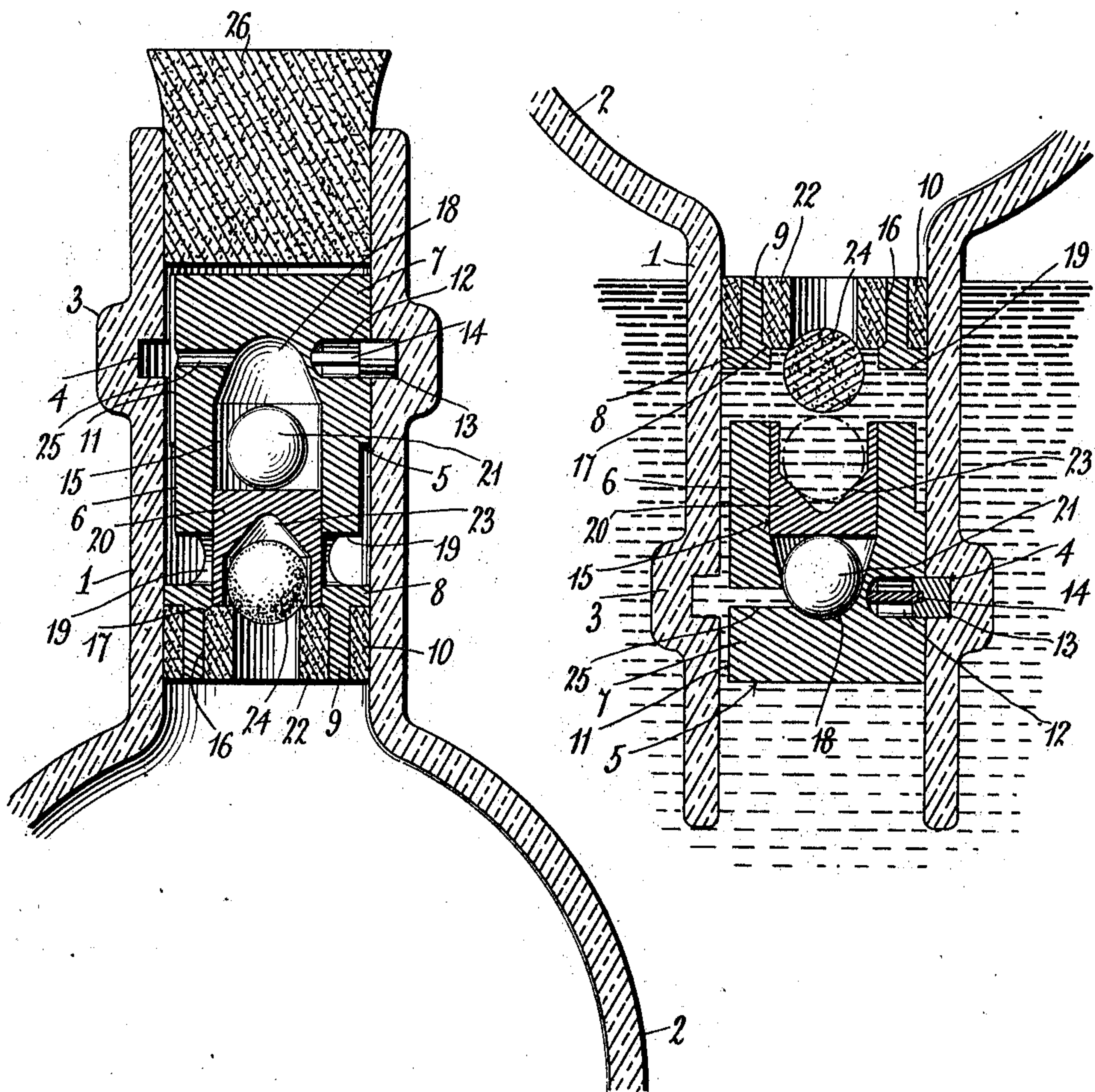
C. B. DAVIS & J. H. SMITH.  
NON-REFILLABLE BOTTLE.  
APPLICATION FILED APR. 22, 1910.

988,550.

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FIG. 1

FIG. 2



Witnesses

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# UNITED STATES PATENT OFFICE.

CLAUDE B. DAVIS AND JOHN HENRY SMITH, OF RICHMOND, VIRGINIA, ASSIGNORS TO  
THE NON-REFILLABLE BOTTLE COMPANY OF AMERICA INC., OF RICHMOND, VIR-  
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NON-REFILLABLE BOTTLE.

988,550.

Specification of Letters Patent.

Patented Apr. 4, 1911.

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*To all whom it may concern:*

Be it known that we, CLAUDE B. DAVIS and JOHN HENRY SMITH, citizens of the United States, residing at Richmond, in the  
5 county of Chesterfield and State of Virginia, have invented certain new and useful Improvements in Non-Refillable Bottles; and we do hereby declare the following to be a full, clear, and exact description of the  
10 invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in non-refillable bottles, and especially with  
15 relation to improvements in the construction of the stopper to be disposed and secured in the neck of the bottle, a valve to prevent refilling of the bottle and a float valve to prevent refilling of the bottle by in-  
20 verting and submerging the same in liquid, the invention consisting in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1  
25 is a vertical sectional view of the upper portion of a bottle constructed in accordance with our invention and provided with our improved means for preventing the refilling thereof. Fig. 2 is a similar view of the  
30 same, in an inverted position and illustrating the use of the float valve.

The neck 1 of the bottle, jar or other ves-  
35 sel 2 is provided with a circumferential bead 3 on the inner side of which is an annular groove 4. In accordance with our invention we provide an inner stopper 5 for insertion and permanent retention in the neck of the bottle. The said inner stopper is cylindrical in form and has a diametri-  
40 cally reduced intermediate portion 6 whereby a diametrically enlarged head 7 is provided to fit in the neck of the bottle and a lower flange 8 is provided also to fit in the neck  
45 of the bottle, there being a reduced portion 9 below the said flange, on which is placed a gasket 10 of cork or other suitable material which effectually seals the lower end of the inner stopper in the neck of the bottle. The  
50 head 5 is provided with peripheral channels 11 and is also provided with a transversely disposed opening 12 which is opposite the groove 4. A securing pin 13 is partly in the said groove and partly in the said opening, and is retained in engagement with the  
55 said groove by means of a spring 14 which

is made of rubber or other suitable elastic material. This spring admits of the said pin being pressed into the opening 12 prior to the placing of the inner stopper in the neck of the bottle and when the pin comes  
60 into register with the groove 4 the said spring presses the pin outwardly into engagement with the said groove, as shown, and causes the said pin to permanently lock  
65 the inner stopper in the bottle neck, so that it cannot be removed therefrom.

The inner stopper has a downwardly opening cylindrical bore 15 the lower por-  
70 tion of which is enlarged as at 16 and provides a shoulder 17. A conical recess 18 communicates with the upper end of the bore 15 and extends upwardly therefrom. Openings 19 are in the wall of the reduced  
75 intermediate portion of the inner stopper and in the bore of the said inner stopper is located a cylindrical valve 20 which is mov-  
80 able longitudinally in said bore and when lowered closes the said openings 19 to prevent the flow of liquid from the bottle. A spherical weight 21 is disposed in the conical  
85 recess 18 and bears on the valve 20 and serves to normally keep said valve in closed position. The valve 20 is retained in the bore of the inner stopper by a collar 22  
90 which fits in the enlarged lower portion 16 of the said bore and in practice is preferably made of cork but may be made of any other  
95 suitable material. The valve 20 has a cylindro-conical bore 23 which opens downwardly and in which is placed a spherical float valve  
100 24 which is made of cork or other suitable very light material. This float valve, when the bottle is in normal upright position, bears on the collar 22. The upper portion  
105 of the inner stopper is provided with a vent passage 25.

In practice an outer cork or stopper 26, of usual construction, is removably placed in the mouth of the bottle. When the said  
110 outer cork has been removed and the bottle is tilted the pressure of the liquid on the inner end of the valve 20 will move the latter a sufficient distance to cause the same to uncover the openings 19 so that liquid  
115 contents of the bottle may pass therefrom through said opening and through the channels in the head of the inner stopper, as will be understood. The valve 20 will close the openings 19 in the event of any attempt to  
120 refill the bottle while the latter is in an up-



right position. Should the bottle be inverted and its neck submerged in a liquid in an attempt to refill the bottle the float valve 24 will close against the seat formed by the collar 22 and prevent refilling as will be understood.

It will be understood that all the parts of our improved stopper device to prevent the refilling of a bottle are contained within the inner stopper and that our refilling device is exceedingly compact and simple and may be manufactured and applied to a bottle at very small cost.

What is claimed, is:—

1. A stopper for insertion and to be fastened in the neck of a vessel, said stopper having a pouring channel, a recess open at the inner end of said stopper, and an opening at one side of said recess and establishing communication between the same and said channel, a valve movable in the said recess across the said opening to cover and uncover the latter and having a recess therein open at its inner end, a float valve housed in the said recess of the first mentioned valve,

and a collar at the inner end of the said recess of said stopper and forming a seat for said first mentioned valve and also for said float valve.

2. A stopper for insertion and to be fastened in the neck of a vessel, said stopper having a pouring channel, a recess open at the inner end of said stopper, and an opening at one side of said recess and establishing communication between the same and said channel, a valve movable in the said recess across the said opening to cover and uncover the latter and having a recess therein open at its inner end, and a float valve housed in the said recess of the first mentioned valve and closing against the inflow of liquid into the vessel when the latter is in inverted position.

In testimony whereof, we affix our signatures, in presence of two witnesses.

CLAUDE B. DAVIS.  
JOHN HENRY SMITH.

Witnesses:—

J. W. GARNER,  
G. H. CHANDLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."