

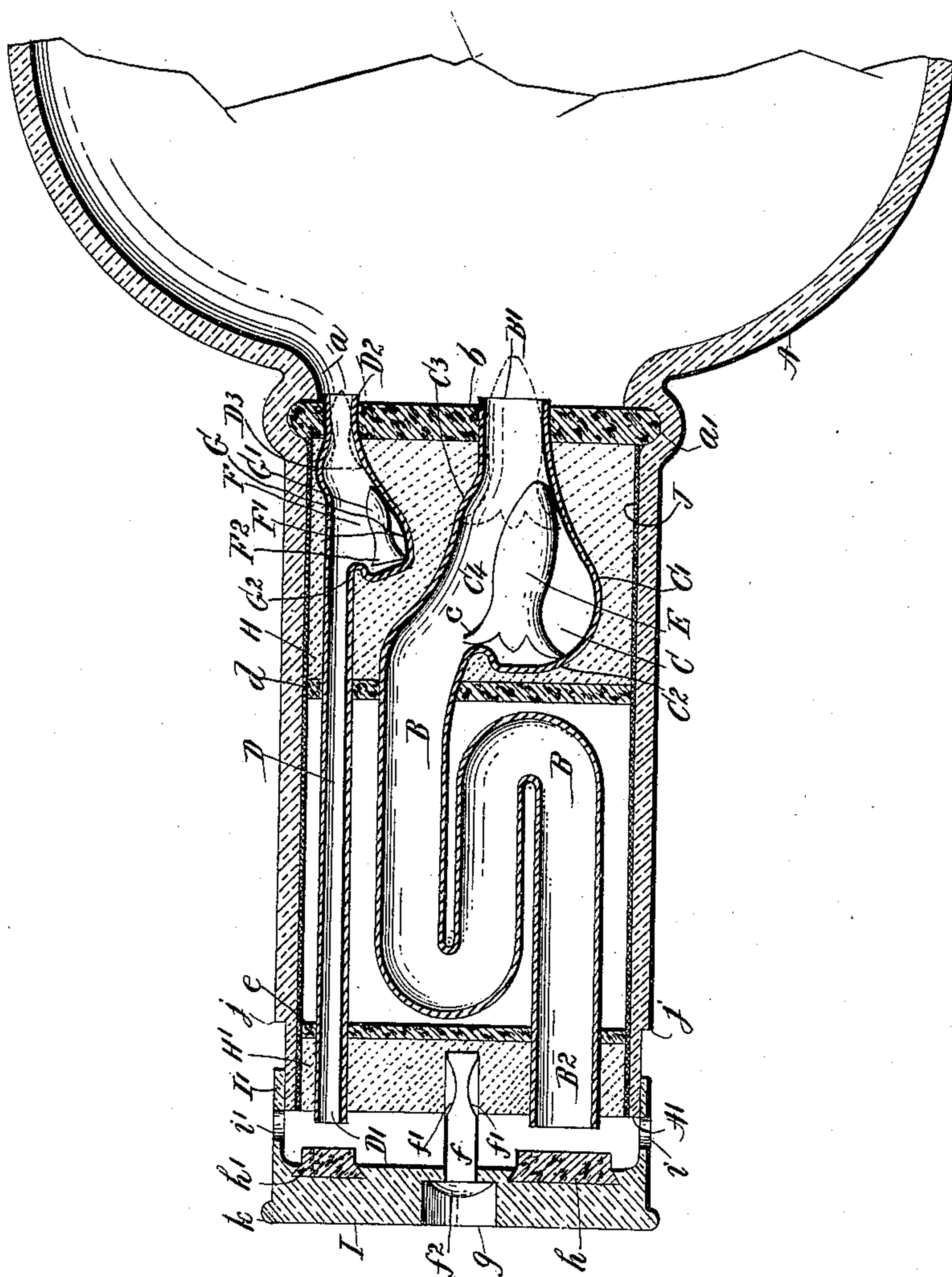
No. 644,343.

Patented Feb. 27, 1900.

J. V. R. VAN NAME.  
NON-REFILLABLE BOTTLE.

(Application filed Nov. 10, 1899.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOSHUA V. R. VAN NAME, OF NEW YORK, N. Y., ASSIGNOR OF ONE-FOURTH  
TO JOHN ELSWORTH STEVENS, OF SAME PLACE.

## NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 644,343, dated February 27, 1900.

Application filed November 10, 1899. Serial No. 736,504. (No model.)

*To all whom it may concern:*

Be it known that I, JOSHUA V. R. VAN NAME, a citizen of the United States, residing at New York, (Mariner Harbor,) in the county  
5 of Richmond and State of New York, have invented certain new and useful Improvements in Non-Fillable Bottles, of which the following is a full and complete specification, such as will enable those skilled in the art to which  
10 it appertains to make and use the same.

This invention relates to non-fillable bottles, and has for its object to provide an improved and measurably more efficient device of this character which will be essentially  
15 practical in its construction, accurate and reliable in its operation, and which will present many incidental advantages material in bottles of this class.

The invention consists in the novel construction and arrangement of parts herein-  
20 after fully described.

The accompanying drawing represents a central longitudinal section of the upper portion of a bottle embodying my invention, several minor parts being in elevation, the figure  
25 showing the bottle in a horizontal position, as if about to be used for decanting the liquid.

In the practice of my invention I construct the bottle A with an inwardly-directed shoulder *a* at the lower end of the neck thereof,  
30 with an outwardly-directed groove *a'* above the same, in which is seated a cork disk *b*, which accordingly rests upon the shoulder *a*. Mounted within the neck of the bottle immediately above this cork disk are the liquid-  
35 outflow and air-inlet tubes B and D, having their lower ends inserted in and projecting through the disk *b*. The liquid-outflow tube flares upwardly and outwardly from its lower  
40 end B' and forms (upon what is in the act of pouring the liquid the lower side thereof) a chamber C, the lower wall C' of which ranges diagonally upwardly with respect to the  
45 mouth of the bottle and downwardly with respect to the under horizontal surface thereof. The upper wall C<sup>2</sup> of the chamber C is flat, and the remaining side C<sup>3</sup> thereof is formed with an inwardly-directed portion C<sup>4</sup>, from  
50 which and from the upper wall C<sup>2</sup> of the chamber the upper portion of the tube B projects, being separated from said wall C<sup>2</sup> by a

downwardly-projecting shoulder C<sup>5</sup>. The upper portion of the tube B is formed into an S-shaped trap, the free end B<sup>2</sup> of which projects  
55 above the level of the mouth A' of the bottle. In the lower end of the chamber C is mounted a hollow glass valve E, which is circular in cross-section and the lower portion E' whereof is conical in form and tapers to a point. The upper portion thereof is projected or  
60 flared outwardly in the form of a plurality of curved wings or fingers *c*, which when the valve is in seated position, as shown in dotted lines in the drawing, will rest upon the  
65 downwardly-tapering faces of the chamber C. In the opposite side of the neck of the bottle the air-inlet tube D is mounted, with its upper end D' above the level of the mouth of  
70 the bottle and its lower end D<sup>2</sup> projecting through the cork disk *b* and outwardly flared to form a depression D<sup>3</sup>, above which is a chamber F, which is deflected toward the liquid-outflow chamber or toward that side of  
75 the bottle which in practice is undermost when tilted. The deflected wall F' of this chamber F is diagonally inclined, and between the chamber and the main portion of the tube D is a shoulder F<sup>2</sup>. In this chamber F is a valve G, the lower portion G' of which is conoidal and the upper portion F<sup>2</sup> of which is  
80 frusto-conical and widest at the top, the said valve being sectionally circular throughout.

Immediately above the cork disk *b* and extending slightly above the top wall C<sup>2</sup> of the chamber C is a filling of plaster-of-paris H,  
85 upon which is laid a cork disk *d*, through which pass the tubes B and D. A slight distance below the top of the bottle is a third cork washer *e*, above which is another filling of plaster-of-paris H', which extends to a level  
90 with the mouth of the bottle and therefore slightly beneath the level of the ends B<sup>2</sup> and D' of the respective tubes. Inserted in this filling H', of plaster-of-paris, is a sectionally-rectangular post *f*, cut out at *f'*, so as to be  
95 firmly held by the plaster-of-paris after the latter has hardened, this post being provided with a head *f*<sup>2</sup> upon the top thereof. Mounted to slide vertically upon the post *f* is a glass cap or cover I, which fits exactly upon the rec-  
100 tangular post, to be thereby prevented from turning, and which is provided with a coun-



tersunk recess  $g$  in the top thereof to receive the head  $f^2$  therein. Upon the under surface of the cap I are immovably secured two corks or stoppers  $h$  and  $h'$ , which when the cap is depressed will close the mouths of the tubes B and D, respectively. The rim or flange  $I'$  of the cap is provided with two apertures  $i$  and  $i'$  in relative lateral alinement with the tubes B and D and constituting means for causing said tubes to communicate with the outside of the bottle when the cap is raised. The rim or flange  $I'$  closely surrounds the mouth  $A'$  of the bottle, which is preferably reduced in external diameter thereat or otherwise formed with an annular shoulder  $j$ , against which the rim or flange  $I'$  bears when the device is closed. The cap I is provided with an annular bead  $k$ , by which it may be operated. I prefer to secure all these parts within a cylinder J, of pasteboard, cork, or other material, which is of a diameter to closely fit the inside of the bottle-neck.

The operation of my invention will be readily understood from the foregoing description when taken in connection with the accompanying drawing.

The bottle being tilted to the horizontal position shown in the drawing or even beyond the horizontal position, the valve E will move from its valve-seat and fall into the recess or chamber C, whereupon the liquid will flow freely over the same through the trap-shaped portion of the tube B and out through the mouth  $B^2$  and through the aperture  $i$  in the cap I, which is of course in the open position. (Shown in the drawing.) Air will at the same time flow through the aperture  $i'$  and the tube D, the valve G of which will fall into the chamber F the moment the bottle is tilted, and thus a free and substantial flow of the liquid will result. Should it be attempted to fill the bottle by introducing any liquid through the liquid-outflow thereinto, it first will be very difficult to get this liquid properly through the cap and, second, through the trap-shaped portion of the tube B; but should this be accomplished then when such liquid enters the chamber C it will float the valve E, and the conoidal and tapered portion thereof engaging either the side  $C'$  or the side  $C^3$  will direct said valve quickly to its seat before any liquid can enter the bottle. The wings  $c$  offer a substantial surface of resistance to the liquid, and also serve to prevent the valve from getting lodged in the upper portion of the tube B, which is also similarly prevented by the shoulders  $C^4$  and  $C^5$ . Moreover, should it be attempted to introduce any liquid to the bottle through the air-tube D the valve G will similarly act to close said tube and will be equally effective in preventing liquid inflow by reason of its general similarity to the valve E, and it will similarly be prevented from lodging in the upper portion of the tube by the shoulders  $D^3$  and  $F^2$ .

It will be understood that the device is inserted in a bottle after the same is filled and

that the plaster-of-paris fillings hold the two tubes in proper position and that the cork washers prevent disintegration of the said filling or escape thereof into the bottle, while they also contribute to the proper retention of the position of the tubes. When it is desired to close the bottle, the cap I is pressed downwardly so that the stoppers  $h$  and  $h'$  cover or inclose the mouths  $B^2$  and  $D'$  of the tubes, which stoppers, as well as the apertures  $i$  and  $i'$ , will always be in proper alinement with the said tubes by reason of the cap being prevented from rotating in virtue of its connection with the rectangular post  $f$ .

The advantages of my invention will be manifest to all skilled in the art to which the same appertains, since the mechanism can be made entirely of glass except for the cork washers and is therefore to that extent unobjectionable in a bottle for holding even the choicest liquors and since it further is practical in construction, effective in operation, the valves quick and sensitive in their action, and the degree to which refilling is prevented being measurably great. It will be understood that I do not confine myself to the exact details of construction or shape of the various parts.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a bottle or similar vessel, having a liquid-outflow tube and an air-inlet tube, of a cap slidably mounted upon the mouth of the vessel and carrying means which operate in connection with the upper ends of said tubes to close the same when said cap is depressed, and having apertures in alinement with said tubes; and means for preventing rotation of said cap.

2. The combination with a bottle or similar vessel, having a liquid-outflow and an air-inlet tube, of a cap slidably mounted upon and surrounding the mouth of the vessel having apertures in the rim or vertical portion thereof in alinement with said tubes, which apertures are open when the cap is raised and closed when it is depressed; stoppers mounted upon the under surface of the cap in alinement with each of the tubes; and means for preventing rotation of said cap.

3. The combination with a bottle or similar vessel, having a liquid-outflow tube and an air-inlet tube, of a sectionally-rectangular post having the lower end thereof secured immovably between said tubes, and a head upon the upper end; a cap slidably mounted upon said post and apertured to receive said head; stoppers upon the under surface of said cap above said tubes, and a rim depending from said cap and surrounding the mouth of the bottle, and having apertures therein in alinement with said tubes.

4. In a bottle or similar vessel, a liquid-outflow tube, the upper portion of which is formed into an S-shaped trap to prevent direct access to its lower portion, said lower portion



being formed into a chamber or recess deflected to one side of the bottle and having a downwardly-inclined side on which said valve rests when opened, and a flat upper wall, between which and the tube is a downwardly-projecting shoulder; the opposite side of said chamber being tapered or curved and provided with an inwardly-rangin shoulder, and the end of said chamber terminating in a tubular valve-seat; and a valve within said chamber or recess and adapted to close the lower end of said tube, said valve being hollow and air-filled, whereby it floats, and being sectionally circular in form, the lower portion thereof being conoidal and tapered, and provided at its upper end with a plurality of outwardly-directed curved wings; and an air-inlet tube mounted within the bottle adjacent to the liquid-outflow tube, and provided with a valve in the lower portion thereof.

5. A non-fillable bottle having mounted in the neck thereof, liquid-outflow and air-inlet tubes, both of which are formed with recesses or chambers deflected toward the same side of the bottle, valves mounted in said tubes normally to close the same, and adapted when the bottle is tilted to fall into their respective recesses, and permit the liquid and the air respectively to flow thereover; and a washer or disk mounted in the lower portion of the neck of the bottle and holding said tubes.

6. A non-fillable bottle having mounted in

the neck thereof, a disk firmly secured in position, liquid-outflow and air-inlet tubes mounted in said disk and having their lower ends projecting therethrough, chambers projecting to one side of said tubes, valves mounted therein, a disk mounted above said chambers, a filling between said disks and surrounding said tubes, a disk below the top of the bottle through which the liquid-outflow and air-inlet tubes pass, said liquid-outflow tube being formed into an S-shaped trap in the intervening space, a filling above the top disk, a post inserted in said filling and provided with means to prevent rotation thereof, said post being sectionally rectangular and provided with a head, and a cap slidably mounted upon said post having a recess in which said head works, and a depending rim surrounding the mouth of the bottle, and provided with apertures in lateral alinement with the liquid-outflow and air-inlet tubes; said cap carrying stoppers upon its under surface to close the respective tubes.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 4th day of November, 1899.

JOSHUA V. R. VAN NAME.

Witnesses:

F. A. STEWART,  
V. M. VOSLER.