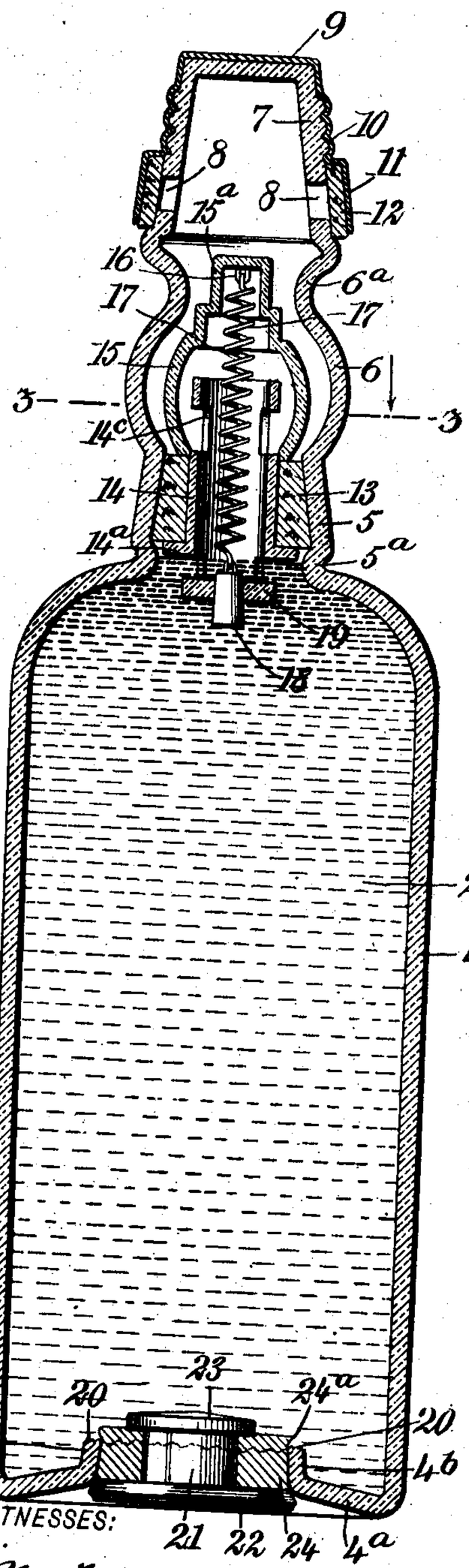
No. 835,081. PATENTED NOV. 6, 1906.

L. A. ROBERTSON.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JAN. 22, 1906.



Geo. W. Naylor.

Walton Harrison.

INVENTOR

Laurence A. Robertson

BY

Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

LAWRENCE A. ROBERTSON, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

No. 835,081. Specification of Letters Patent. Patented Nov. 6, 1906.

Application filed January 22, 1906. Serial No. 297,170.

To all whom it may concern:

Be it known that I, LAWRENCE A. ROBERTSON, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Non-Refillable Bottle, of which the following is a full, clear, and exact description.

My invention relates to non-refillable bottles, my more particular idea being to produce a bottle which may be filled in the first instance from the bottom thereof and then so closed that it cannot be subsequently refilled through the same aperture.

My invention further relates to such a construction of bottom as will permit the passage therethrough of certain mechanical parts used in and about the neck of the bottle for permitting the flow of a liquid in one direction only.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which similar characters of reference indicate corresponding parts in the figure.

The figure is a vertical section through a bottle provided with my invention.

The body portion 4 of the bottle is provided with a conoidal portion 5, separated therefrom by an annular constriction 5^a. The conoidal portion 5 merges into a bulbous portion 6, above which is an annular constriction 6^a. Another conoidal portion 7 of the neck is provided with inlet-passages 8 and is threaded externally. A metal cap 9, threaded internally at 10, is provided with an annular hood 11, integral therewith, and encircled by this annular hood is an annular cork member 12, fitted neatly over the apertures 8. By screwing the cap 9 downwardly upon the portion 7 of the neck the annular cork 12 is forced firmly into engagement with the portion 7, so as to close the outlet-apertures 8. An annular cork 13 is encircled by the conoidal portion 5 and is engaged internally by a sleeve 14, provided with a flange 14^a and made of any desired material, preferably glass or metal. The sleeve 14 is provided with inlet-apertures 14^b and with outlet-apertures 14^c for permitting the liquid contents of the bottle to be removed. A hollow valve 15 is provided with a closed end 15^a, upon which is secured a fastening 16, and connected with this fastening is a spiral spring 17. A plug 18 is supported in a bridge 19, which by the tension of the spring 17 is drawn tightly against the adjacent end of the sleeve 14, as will be understood from the drawing. When the bottle occupies the position indicated in the drawing or merely rests upon its side, the tension of the spring 17 maintains the hollow valve member 15 in contact with the annular cork 13, so that none of the liquid can escape. When, however, the bottle is inverted or turned beyond a predetermined angle, as indicated in the drawing, the weight of the valve member 15 causes it to stretch the spring 17, so that the liquid is free to pass from the body portion 4 of the bottle, the apertures 14^b, and the apertures 14^c and 8, thus making its escape. The cap 9 is of course removed from the bottle for the purpose of allowing the contents to flow out.

In order to insert the valve member 15, the annular cork 13, the sleeve 14, and parts carried by these members, they are first assembled and are next inserted through the bottom 4^a of the bottle. This bottom is provided with an annular flange 4^b, integral therewith, this flange projecting upwardly and inwardly and terminating at its top in a ragged edge 20. This ragged edge may conveniently be made by breaking away an excess of glass from the flange 4^b, the natural break or ragged edge formed by the fracture giving the flange 4^b an excellent edge or surface, as indicated in the lower portion of the drawing, the plug 21 terminating inwardly in a flange 23. An annular cork member 24 encircles the plug 21 and is disposed intermediate of the flanges 22 23.

In order to insert the valve 15, annular cork 13, and sleeve 14, these parts are first assembled and are let into the bottle from the bottom thereof, the bottle being preferably inverted for this purpose. The annular cork 13 being yielding is forced past the constriction 5^a, whereupon all of the parts assume the position indicated in the drawing and cannot readily be displaced. The liquid contents is now poured into the bottle through the bottom, and the plug 21, provided with the annular cork member 24, is forced into the bottom, so as to be encircled by the annular flange 4^b. The annular cork 24 being once in contact with the liquid 25 begins to swell at its inner portion 24^a, and in swelling it naturally obtrudes more or less over the broken surface 24, which being rough and jagged, as aboved described, cuts into the

cork to a greater or less extent and effectually prevents the removal of either the annular cork 24 or the plug 21. The greater the tendency of the portion 24^a of the cork to swell the more tightly is the plug drawn into the annular aperture constituted by the annular flange 4^b, as will be readily understood from the drawing.

As will be seen from the above, the bottle cannot be readily refilled from either of its ends.

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

1. In a non-refillable bottle, the combination of the body portion, an annular flange supported thereby and provided with a broken or jagged edge, and a closure member encircled by said annular member, and provided with a portion to be engaged by said broken or jagged edge.

2. In a non-refillable bottle, the combination of an annular member projecting internally and provided with a gripping edge, a member provided with a yielding surface and adapted to be forced into said annular member and gripped thereby.

3. A non-refillable bottle comprising a body portion provided with a bottom, said bottom having an annular flange integral therewith and projecting internally of said body portion, said annular flange having a rough jagged edge of uncertain conformity, and a closure-plug provided with a portion of resilient material, for engaging the said edge.

4. A bottle comprising a body member having an aperture, and a flange bounding said aperture, said flange being provided with a gripping edge, and a closure member provided with an absorbent portion capable of swelling when in contact with a liquid, said absorbent portion being so positioned as to engage said edge.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAWRENCE A. ROBERTSON.

Witnesses:

ALEXR. W. KYLE,

WILLIAM C. KYLE.