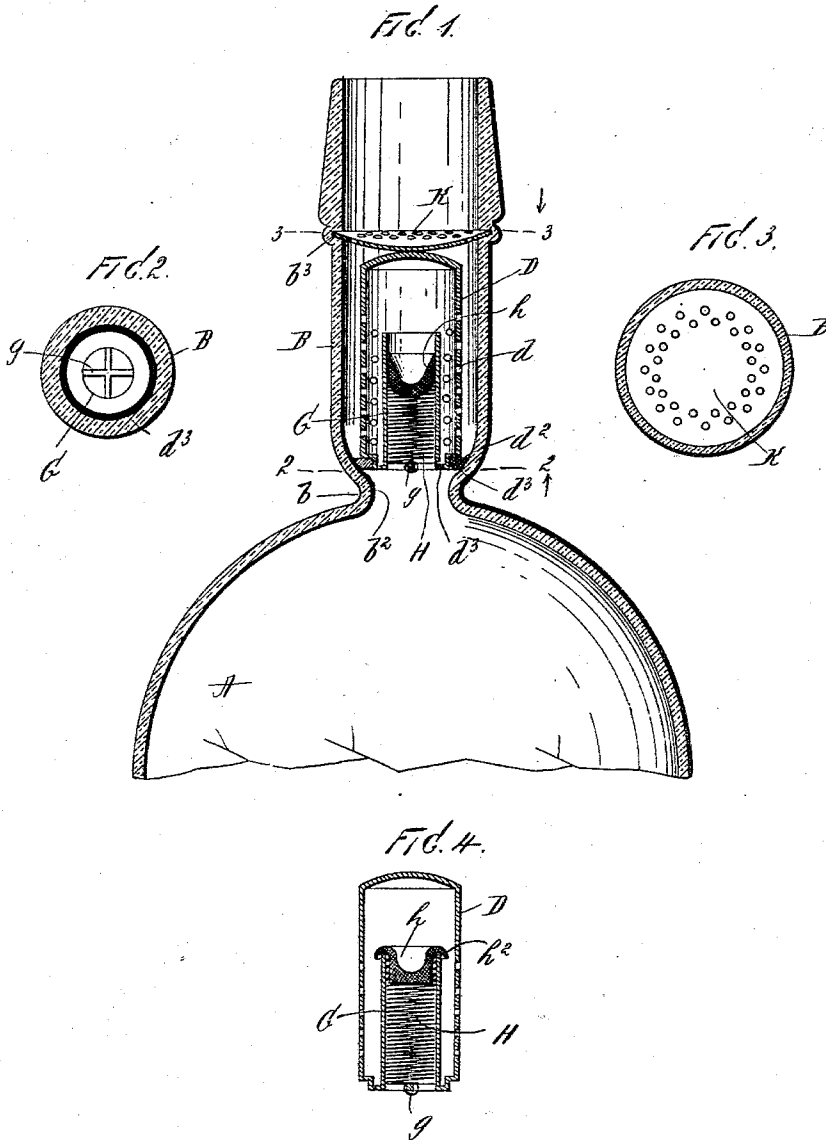


(No Model.)

S. J. SMITH.
BOTTLE.

No. 562,671.

Patented June 23, 1896.



WITNESSES:

John Buckler
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UNITED STATES PATENT OFFICE.

SAMUEL JEFFERSON SMITH, OF PASSAIC, NEW JERSEY.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 562,671, dated June 23, 1896.

Application filed February 3, 1896. Serial No. 577,836. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JEFFERSON SMITH, a citizen of the United States, and a resident of Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to bottles, jugs, jars, and similar vessels, and the object thereof is to provide a vessel of this class with a neck attachment in which is placed an automatic valve, the construction and arrangement being such that when the vessel has once been filled and the neck attachment applied said vessel may be emptied of its contents, but cannot be refilled or reused.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a central vertical section of the upper part of a bottle provided with a neck, showing my improvement connected therewith; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3, and Fig. 4 a central vertical section of a part of the neck attachment.

In the drawings forming part of this application, I have shown my invention applied to a bottle, and in the practice of my invention I provide a bottle or other vessel A, having a neck B, the lower portion of which is inwardly directed, as shown at *b*, so as to form therein an inwardly-directed annular shoulder *b*². I also employ a neck attachment comprising a main tube D, the upper end of which is closed and the lower end open, and the side walls of which are perforated, as shown at *d*.

The lower open end of the tube D is provided with an annular recess *d*², in which is placed a packing-ring *d*³, of rubber or any desired material, and extending inwardly from said annular recess is an annular flange *d*³, on which is mounted, or to which is secured a supplemental tube G, which is arranged concentrically within the tube D, and both ends of which are open.

The tube G is provided with a spider *g* at its lower end, and secured thereto is a fine

spiral spring H, within the upper end of which is placed a conical float or valve *h*, the base of which is directed upwardly, and said valve is provided with a central chamber which is also conical in form, and the sides of the valve are adapted to closely fit within the tube G, and said valve is connected with the spring H by being secured within the upper coils thereof in any desired manner, the diameter of said spring and the diameter of the larger portion of the valve being substantially the same, and also substantially the same as the inner diameter of the tube G.

Formed in the upper portion of the neck B, above the tube D, is an annular groove or recess *b*³, and I also employ a perforated diaphragm or plate K, which is composed of spring metal, and adapted to be forced downwardly into the neck or nozzle, the edges thereof entering the annular groove or recess *b*³, or said plate may be so formed as to closely fit within the neck and provided with shoulders or projections adapted to enter said annular groove or recess. In this class of devices the bottle or other vessel must first be filled before the neck attachment is applied, and the bottle A having been filled the tube D is inserted therein, as shown in Fig. 1, so that the packing-ring *d*³ rests upon the annular shoulder *b*², and the plate K is then forced into the neck and into the position also shown in Fig. 1, in which position it bears upon the annular shoulder *b*², and the neck or nozzle B may then be closed by the ordinary stopper or plug in the usual manner.

When it is desired to empty the bottle or vessel or to discharge a portion of its contents, it is only necessary to remove said plug or stopper and to invert or tilt the bottle, when the contents will flow out through the central tube G, through the perforations in the tube D, and out through the perforated plate or partition K; and in this operation the valve is forced from its seat by the pressure of the liquids within the bottle, almost any appreciable amount of pressure being sufficient for this purpose.

The spring H is a contractile spring, and is quite long and very weak, and in whatever position the bottle may be held in an attempt to pour liquids therein said spring will draw the valve back into the end of the tube

G, and when in this position it will be impossible for any liquids to enter the bottle through the neck thereof. When the bottle is inverted, and the contents therein flow out, as hereinbefore described, the valve H will entirely leave the concentric tube G, but be supported by the spring I, and when the flow of the liquid ceases, and the bottle is held in a horizontal or in its normal position, said valve will again be drawn into the tube by said spring. It is evident, therefore, that the bottle or other vessel may be entirely emptied of its contents, and that it cannot be refilled by pouring liquids therein, and in Fig. 4 I have shown a modified form of construction, in which the valve H is provided with an annular outwardly and downwardly directed flange or rim h^2 , which rests upon the top of the tube G, and in this form of construction the operation will be substantially the same as hereinbefore described. It will thus be seen that I accomplish the object of my invention by means of a device which is simple in construction and operation and comparatively inexpensive.

The plate or partition K cannot be removed from the neck of the bottle, and this plate or partition, together with the tube G, absolutely prevents the insertion of a tool or instrument in an attempt to interfere with the operation of the valve, and it is evident that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

The combination with a bottle the neck of which is restricted at the lower portion thereof, and is provided near the upper portion with an annular interior groove of an antifilling device adapted to be placed therein after the bottle has been filled, consisting of a cylindrical portion, the upper end of which is closed, and the lower end of which is directed inwardly and downwardly forming an angular shoulder from which there projects upwardly into the interior of said cylindrical portion, a short tube, said cylindrical portion being provided with apertures or openings in the sides thereof and a bell-shaped valve, the concave portion of which is directed upwardly and the annular outwardly-directed rim of which incloses the upper end of the tube to close the same, a spring within said tube adapted to draw said valve downwardly and an annular packing-ring secured in said angular shoulder formed in the bottom of said cylindrical portion adapted to bear against the inwardly-directed part of the neck of the bottle, and an apertured disk of spring metal secured to the top of said cylindrical portion, and adapted to be forced within the neck of the bottle and the periphery to engage an annular groove therein to retain said device in position, substantially as herein set forth and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 20th day of January, 1896.

SAMUEL JEFFERSON SMITH.

Witnesses:

C. GERST,

A. M. CUSACK.