

No. 862,120.

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F. GROVATT & W. TEMPLE.

NON-REFILLABLE BOTTLE.

APPLICATION FILED SEPT. 22, 1906.

Fig. 1.

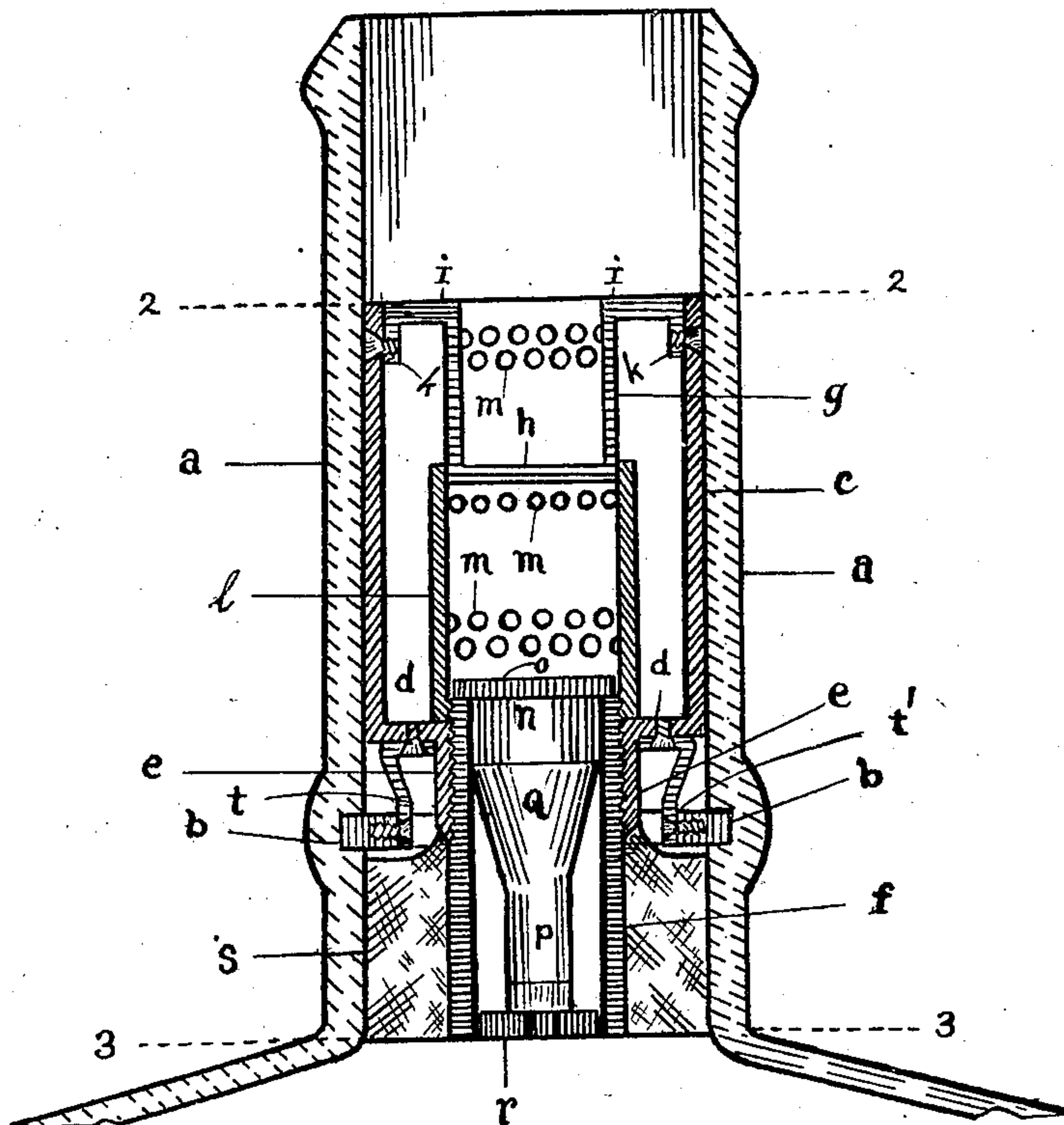


Fig. 2.

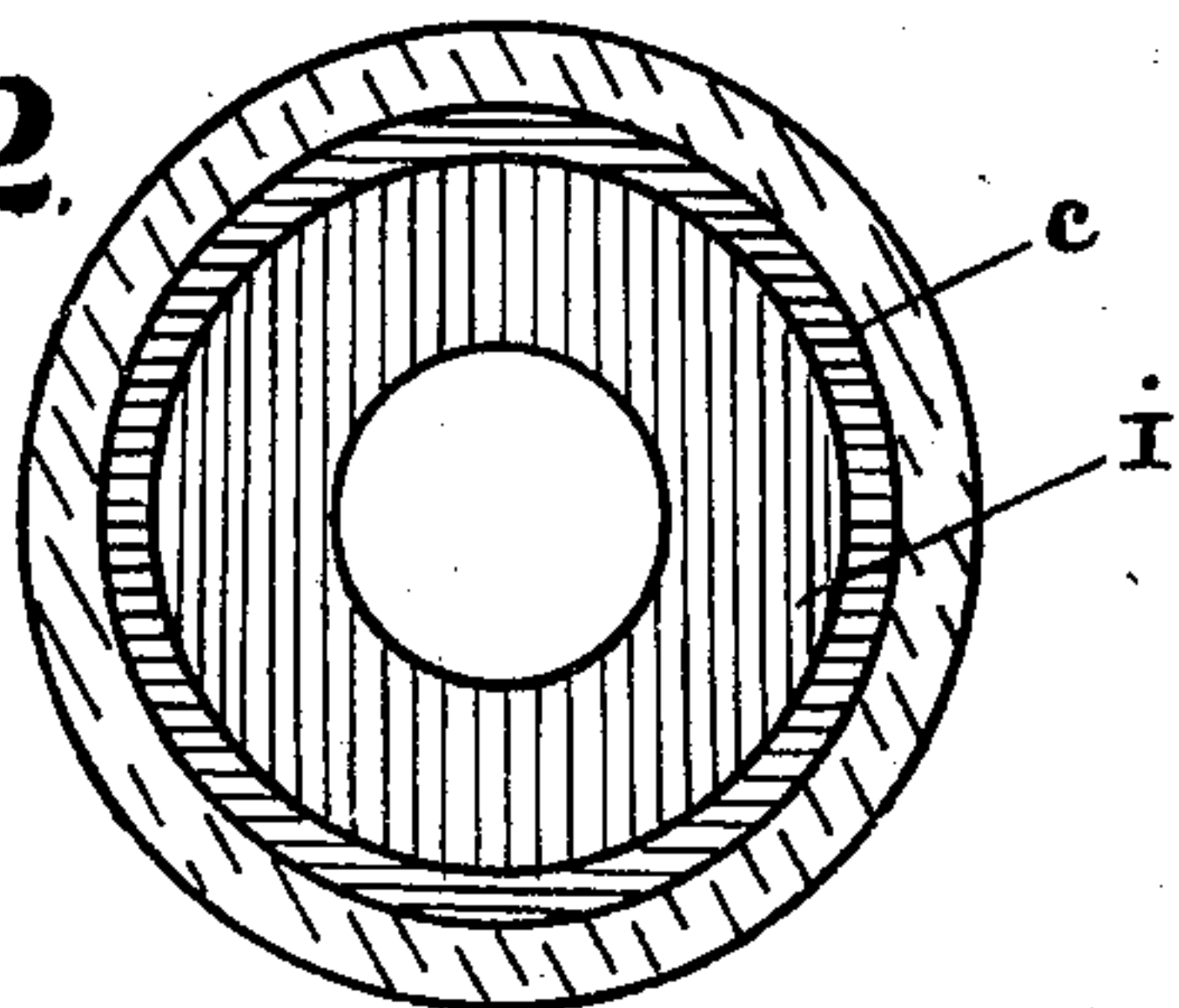
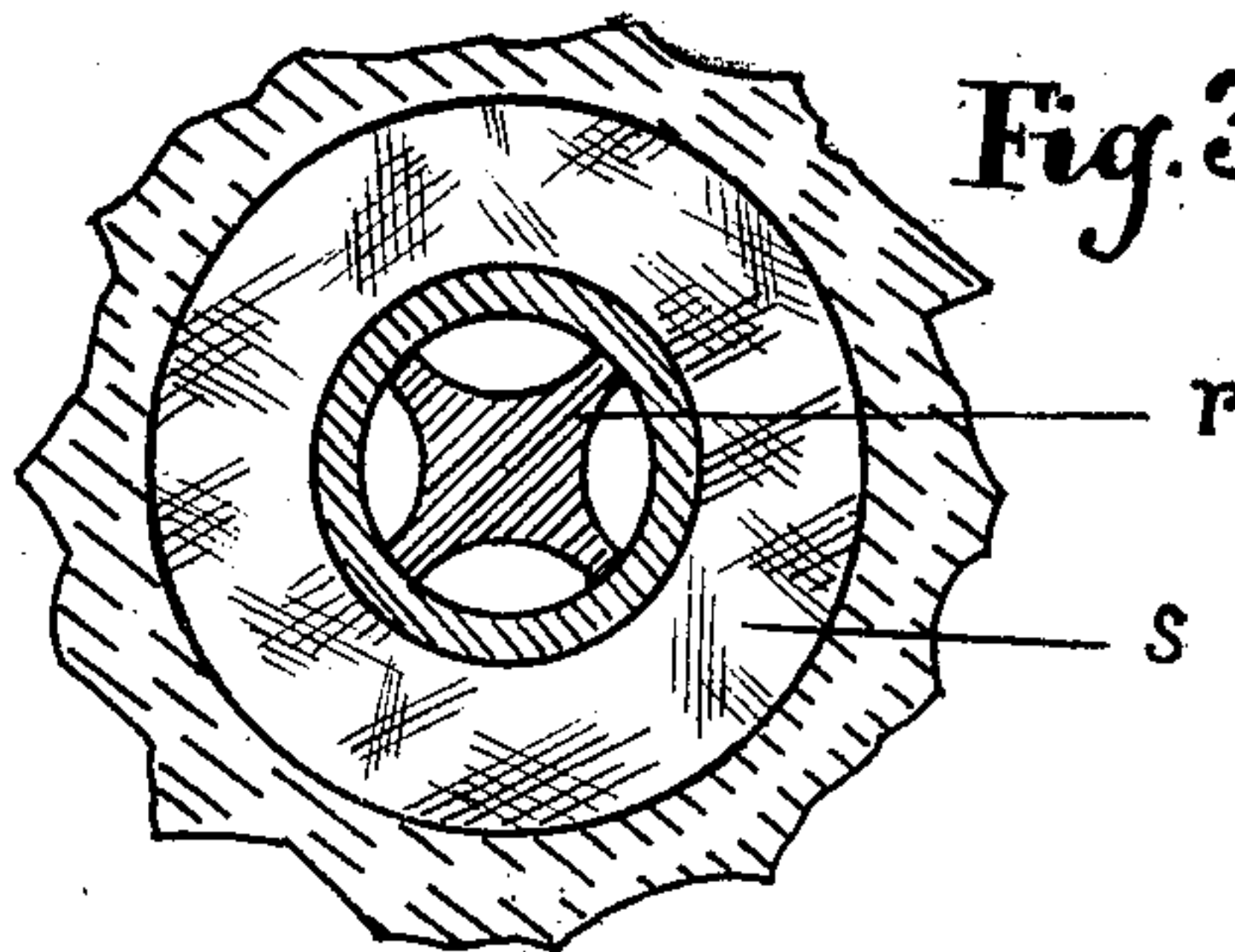


Fig. 3.



Witnesses:

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NON-REFILLABLE BOTTLE.

No. 862,120.

Specification of Letters Patent.

Patented July 30, 1907.

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To all whom it may concern:

Be it known that we, FRANK GROVATT and WILLIAM TEMPLE, both citizens of the United States, and residing at Trenton, in the county of Mercer and State of New Jersey, have jointly invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

The object of our invention is to produce a bottle which can not be refilled after the liquid originally placed therein shall have been exhausted, and at the same time to provide a cheap, simple, and easily assembled construction for said purpose, adapted to be fitted within the neck of the bottle and to be permanently retained therein.

Briefly described, our invention consists of a peculiarly constructed buoyant valve having a seat in and adapted to slide within a chamber having openings in its wall, and a chamber surrounding the first mentioned chamber and having an outlet into a tube or channel opening into the outer end or neck of the bottle, whereby, when liquid is poured from the bottle, it is left free to pass said valve and find its way through said chamber and tube, and pour from the neck of the bottle; while any attempt to refill the bottle is defeated by the valve being forced to its seat either by gravity or its buoyancy according to the position in which the bottle is held during the attempt to refill it.

In the drawings Figure 1 is a diametrical sectional view of the neck of the bottle embodying our invention, the body of the bottle not being shown; Fig. 2 is a cross-sectional view on the line 2—2 in Fig. 1, looking downward; and Fig. 3 is a cross-sectional view on the line 3—3 in Fig. 1, looking upward.

In the drawings, *a*, is the neck of a glass bottle within which neck is formed the annular recess, *b*; *c*, is a tube, made preferably of non-corrosive metal and having a circular offset, *d*, in its wall with the projecting reduced portion, *e*. This reduced portion, *e*, is internally threaded as shown in Fig. 1 of the drawings. *f* is a tube of similar material and of smaller diameter externally threaded at its upper end, and is screwed into the said tube, *c*.

g is a circular chamber having its lower end, *h*, closed and having a flanged extension, *i*, which has a depending portion, *k*, which depending portion, *k*, may be outwardly threaded to screw into the upper portion of the tube, *c*, or may be attached to the same by rivets or screws as shown in Fig. 1. Said chamber, *g*, is open at its upper end. The said chamber, *g*, has its closed end fixed within another tube, *l*, at the upper end of said tube while the lower end of said tube, *l*, takes on to the

threaded upper end of the tube, *f*. The chamber, *g*, and tube, *l*, have apertures, *m*, formed in their walls, as shown in Fig. 1.

Within the tubes, *f*, and *l*, the valve, *n*, is adapted to move. This valve, *n*, has a circular head with an extended upper portion, *o*, and a reduced shank, *p*, the portion of the shank of the least diameter being connected with the larger head of the valve by the part, *q*. At the lower end of said shank is formed the spider, *r*, which is so shaped and located as to act as a guide and holds the axis of the valve, *n*, parallel to the walls of tubes, *f*, and *l*, and at the same time to permit of the outflow of liquid from the body portion of the bottle past said spider and valve into the tube or chamber, *l*, when the bottle is tilted. This valve, *n*, is preferably made of wood with the flanged head portion, *o*, of metal, but the valve may be made entirely of thin metal filled with air so as to insure its buoyancy.

Surrounding the tube, *f*, is a cork washer, *s*, adapted to tightly close the lower portion of the neck of the bottle.

Attached to the circular offset, *d*, of the tube, *c*, are the springs, *t*, *t'*, provided with lugs or heads adapted to take into the annular groove, *b*, formed on the inside of the neck of the bottle.

The bottle being filled with the desired liquid, the structure thus assembled is placed in the neck of the bottle with the cork washer, *s*, down and is thrust down into the neck until the said springs, *t*, *t'*, take into the annular groove, *b*, when the structure becomes locked within the neck of the bottle and can not be removed without breaking the bottle, and the bottle may then be corked in the usual manner. When it is desired to obtain liquid from the bottle the outer cork in the end of the neck of the bottle (not shown in the drawing) is removed in the usual manner and the bottle is tilted. Thereupon the liquid within the bottle flows past the spider, *r*, on the lower end of the valve, *n*, and floats said valve out of its first position and along through the tube or chamber, *l*, until its head, *o*, contacts with the closed end, *h*, of the tube, *g*, the liquid following the valve from the bottle then passes through the two lower rows of openings, *m*, into the circular chamber formed between said tubes, *l*, and *g*, and the enveloping tube, *c*. From thence the liquid passes through the openings, *m*, in the tube *g*, and out through the neck of the bottle into the receptacle provided for it. Upon righting the bottle the valve, *n*, drops back to its normal position and becomes seated upon the upper end of the tube, *f*. If an attempt be made to refill the bottle by pouring liquid in through the neck with the bottle in an upright position, the valve *n*, resting on its seat prevents all

access of the liquid poured to the interior of the bottle.

If the effort be made to refill the bottle by forcing the liquid into it while holding the bottle in an inverted or tilted position the liquid quickly floats the buoyant valve back to its seat and the valve is held there by the pressure of the liquid so that the liquid can not enter the bottle.

Having thus described our invention we claim:

1. In a non-refillable bottle, the combination of a buoyant valve having a head adapted to rest upon a seat, and having a reduced shank and a spider on the reduced end of the said shank, a tube and a chamber within which said valve is adapted to move, said chamber having one or more openings in its wall; a seat for said valve within said chamber; a chamber located above said first mentioned chamber and having an open end and one or more openings in its wall, and a wall surrounding said chambers and

forming an annular chamber between it and said two chambers, substantially as described.

2. In a non-refillable bottle, the combination of a buoyant valve having a head and a circular extended portion adapted to rest upon a seat, and having a reduced shank and a spider on the reduced end of said shank; a perforated chamber wherein said valve may move, and a seat for said valve within said chamber; an open ended chamber located above said first mentioned chamber and having openings in its side walls; a wall surrounding said two chambers and forming an annular chamber between it and them; a spring adapted to retain said structure within the neck of the bottle and a washer surrounding the lower end of said perforated chamber, substantially as described.

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Witnesses:

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