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NON-REFILLABLE BOTTLE.

APPLICATION FILED APR. 5, 1906.

Fig. 1.

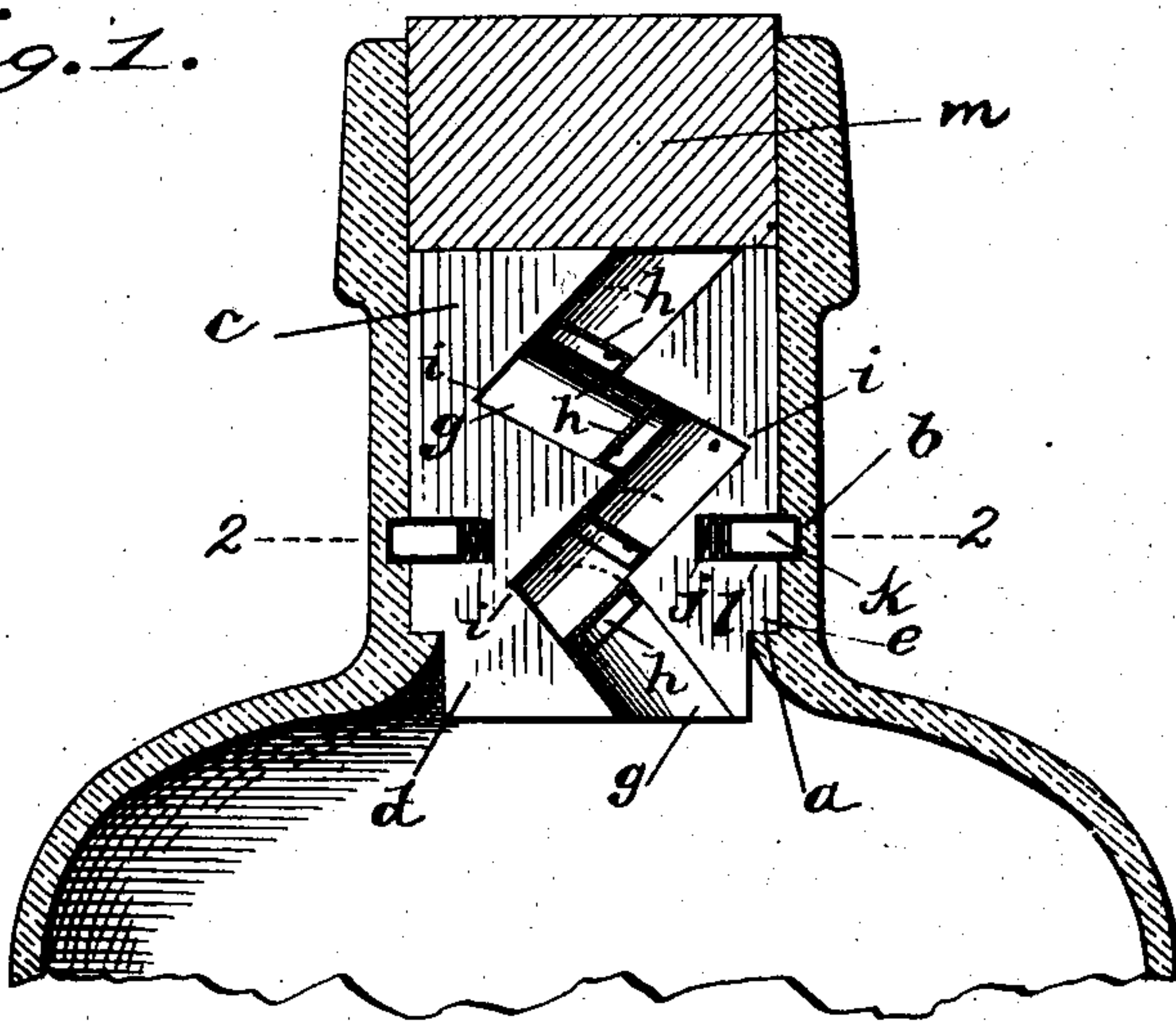


Fig. 2.

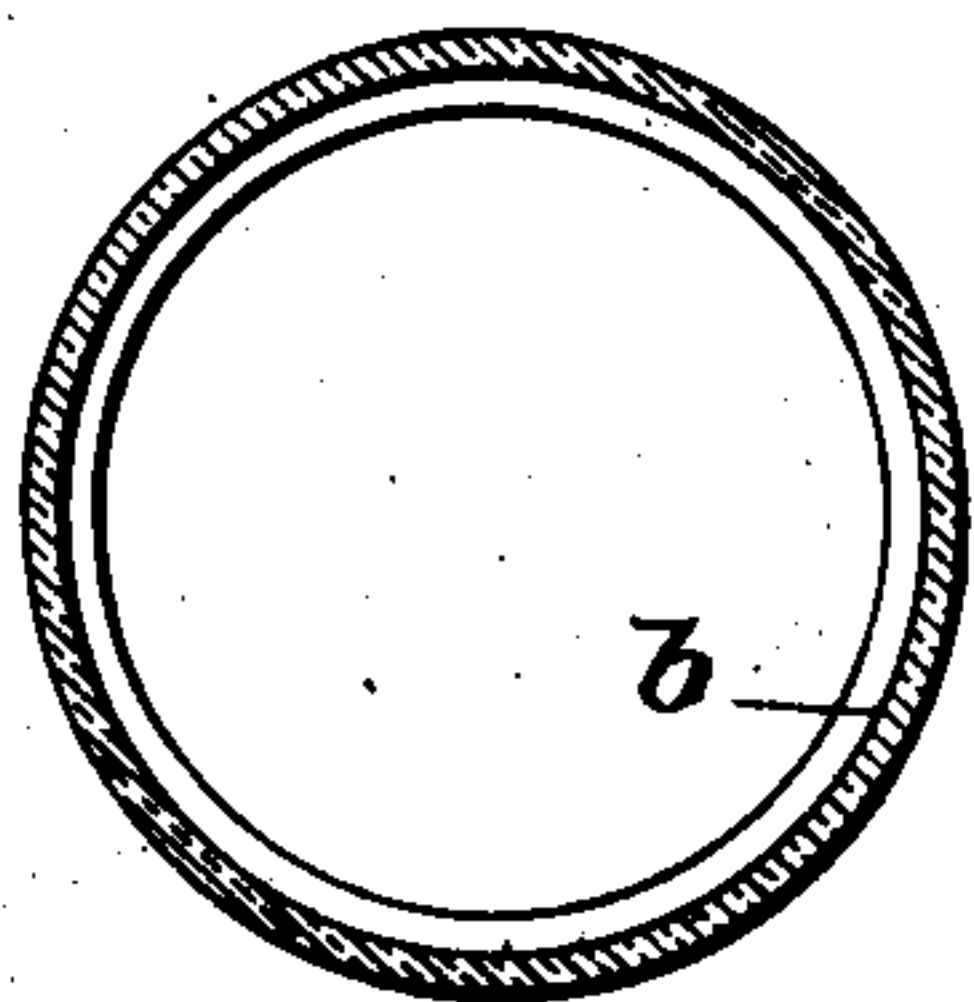


Fig. 3.

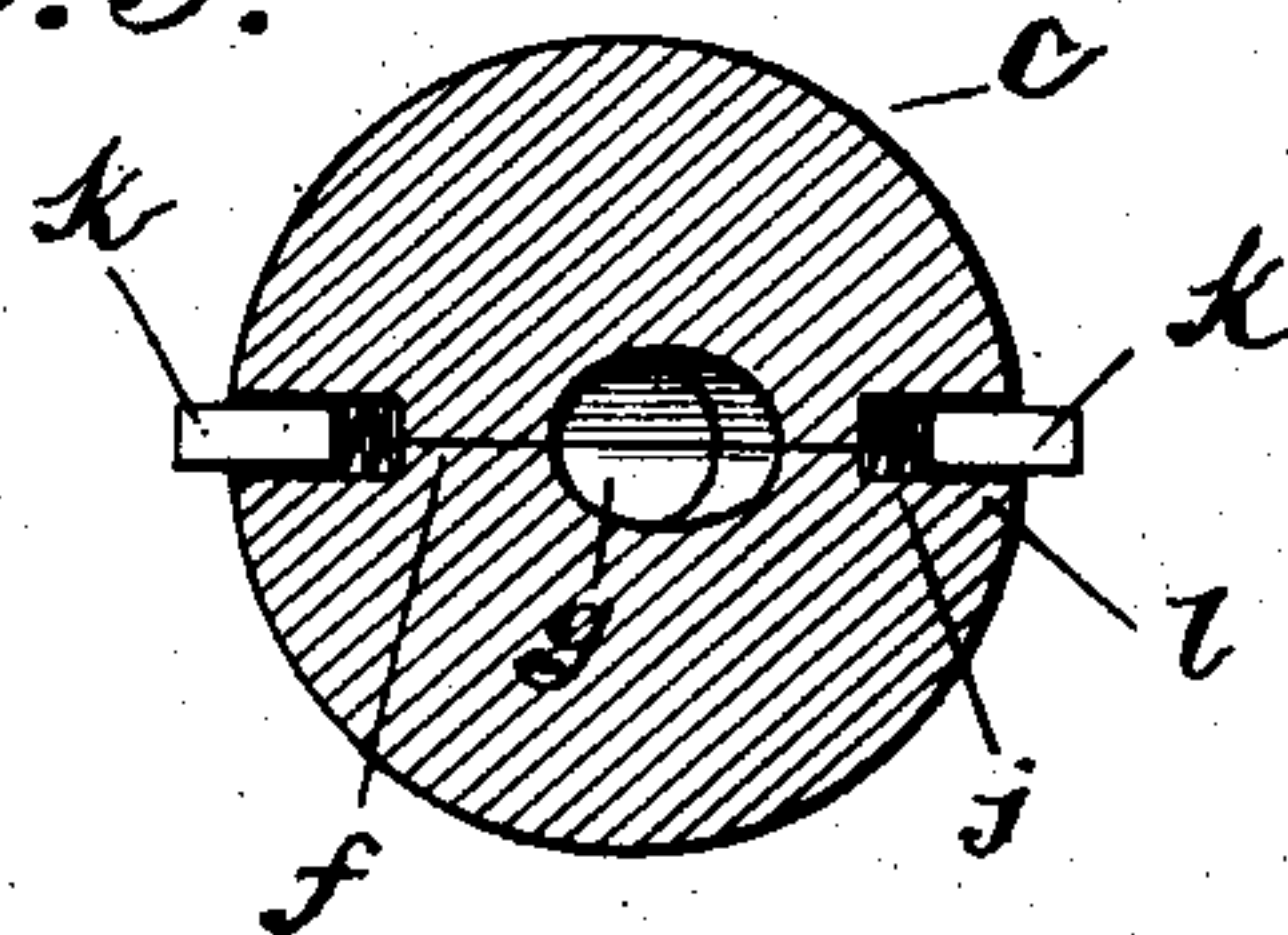


Fig. 4.

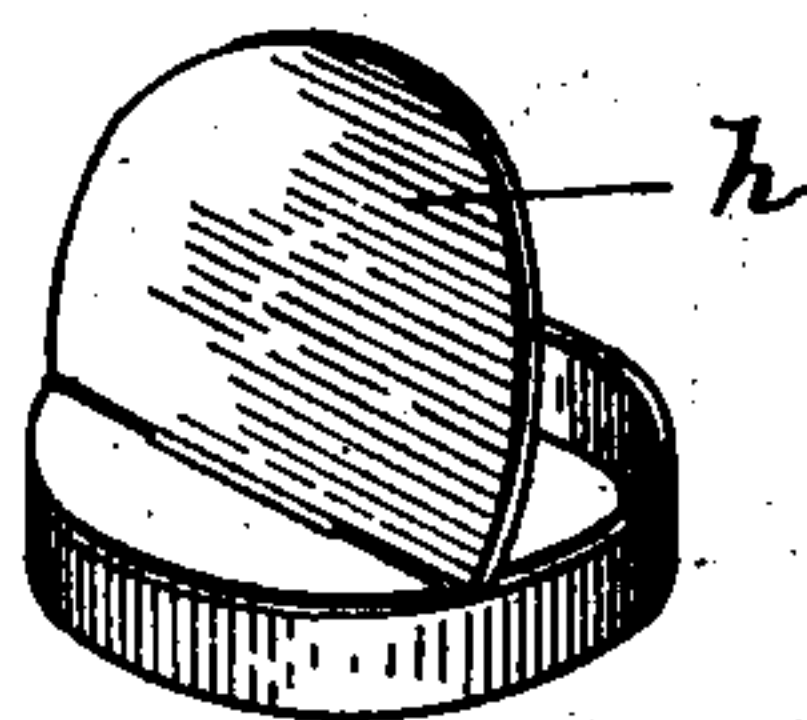
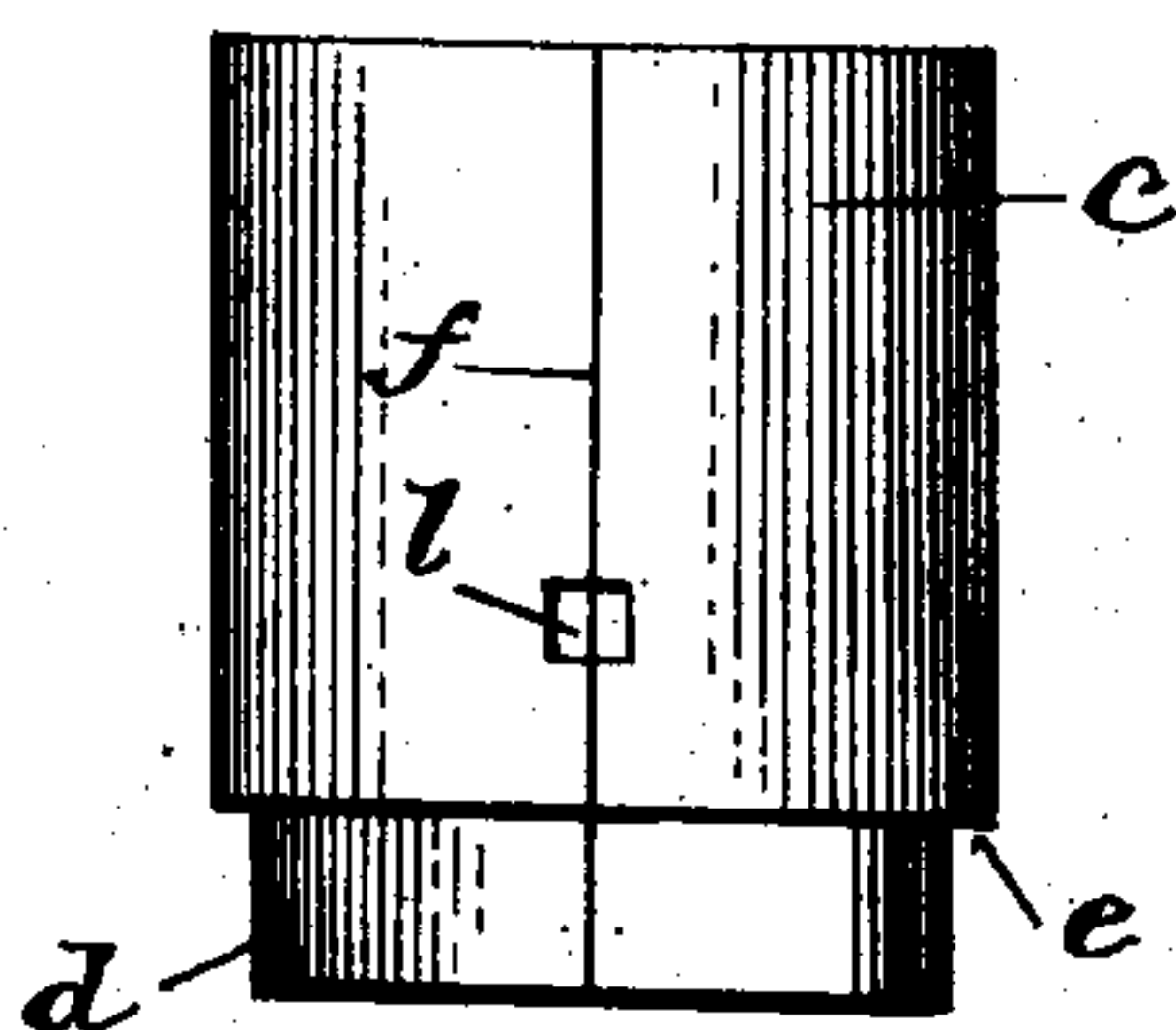


Fig. 5.



Witnesses

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NON-REFILLABLE BOTTLE.

No. 835,115.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WILLIAM LEWIS ROWE and WILLIAM W. COY, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to an improved non-refillable bottle.

The improvement will first be described, and the features of invention will then be pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a vertical section of the neck and upper part of a bottle embodying our invention. Fig. 2 is a horizontal section of the neck of the bottle on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section of the plug, which is permanently fitted in the bottle-neck. This is also on the line 2 2. Fig. 4 is a perspective view, on a larger scale, of the flap-valve and ring-seat. Fig. 5 is a side view of the plug.

The bottle-neck near its base or joiner with the body of the bottle has an inward-projecting shoulder *a*, and above said shoulder the interior of the neck has an annular groove *b*. In other respects the interior of the neck is straight and smooth like an ordinary bottle.

A plug *c*, of porcelain, vitreous substance, or any suitable material, has a cylindric form to fit snugly within the neck. The lower end *d* of the plug in the present instance is of a size reduced from that of the upper portion, and thereby an offset *e* is formed.

By reference to Fig. 1 it will be seen this offset rests down upon the inward-projecting shoulder *a*, which latter thus supports the plug in the neck. In its construction the plug is made in two equal semicylindric parts, each part having a flat surface and the two flat surfaces being in contact or joined, as indicated by the line *f*. By constructing the plug in two parts, as described, we are enabled to form a zigzag passage *g*, extending entirely through from the top to the bottom of the plug. Within this passage are a plural number of flap-valves or hinged valves *h*—say from two to five—one of the valves being secured in each of the straight sections,

which are separated by bends *i*. Each valve is hinged or pivoted so as to open in the outward direction—that is, to open in a direction that will allow the liquid contents of the bottle to discharge; but it is to be observed that the alternate valves are reversely positioned, by which we mean that the lowermost valve *h* has its hinge or pivot at one side of the passage, and the second or next valve above has its hinge or pivot at the opposite side of the passage, and the third valve has its hinge or pivot at the same side as the lowermost valve, and the fourth or upper valve has its hinge or pivot at the same side of the passage as the second one. By thus having the alternate valves in the zigzag passage reversely hinged or pivoted all the valves will not swing open when the bottle is tilted. Some of the valves will swing open as a result of merely tilting the bottle; but other valves will remain closed. Of course when the bottle is tilted to pour out the liquid the action of the liquid that flows through the passage *g* to discharge will open any of the valves that may be closed.

The zigzag passage and the valves distributed between the bends in said passage and the alternate valves reversely hinged constitute an impediment that will practically prevent the bottle from being filled through the said passage. After the valves have been positioned in the passage the two semicylindric parts of the plug are placed together and cemented.

The plug *c* in practical operation will not be fixed in position within the neck until the bottle has been filled with the liquid it is desired to hold. The plug carries one or more spring-pressed bolts *k*, which project from its cylindric side. Each bolt (in the present instance two) occupies a socket *l* in the side of the plug, and a small spring *j* in the socket presses against the end of the bolt and causes it to be pushed outward.

After the bottle has been filled the plug *c* will be inserted within the neck of the bottle. To insert the plug, it is only necessary to press back the projecting bolts *k* in order that they may be entered and pass down into the neck. As soon as the offset *e* at the bottom of the plug becomes seated on the shoulder *a* in the bottle-neck the bolts *k* in the plug

will have position coincident with the annular groove *b* in the neck, and thereupon the springs *j* will push the bolts out and the ends of the bolts will enter the said groove *b* and
5 serve to permanently lock the plug to its position. There is a space in the bottle-neck above the plug *c* to receive an ordinary cork or other stopper *m*.

From the foregoing description and the
10 drawings both the construction and operation of the device will be understood.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

15 1. A non-refillable bottle having a neck with an interior annular groove; a cylindric plug filling the neck and provided with a passage having zigzag bends; a plurality of valves in said passage, each valve being be-
20 tween two of said bends, and means engaging

the said annular groove and the cylindric plug to retain the latter in place.

2. A non-refillable bottle having an annular groove at the interior of the bottle-neck; a cylindric plug having a zigzag passage ex- 25 tending through the plug from top to bottom and provided with a plural number of flap-valves—the alternate valves having their hinges on opposite or reverse sides, and spring-pressed bolts projecting from the cy- 30 lindric side of the said plug and engaging in the said annular groove of the bottle-neck.

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

WILLIAM LEWIS ROWE.
WILLIAM W. COY.

Witnesses:

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JOHN N. HEWES.