

No. 626,516.

Patented June 6, 1899.

A. D. AVEDISYAN.
NON-REFILLABLE BOTTLE.

(Application filed Apr. 17, 1899.)

(No Model.)

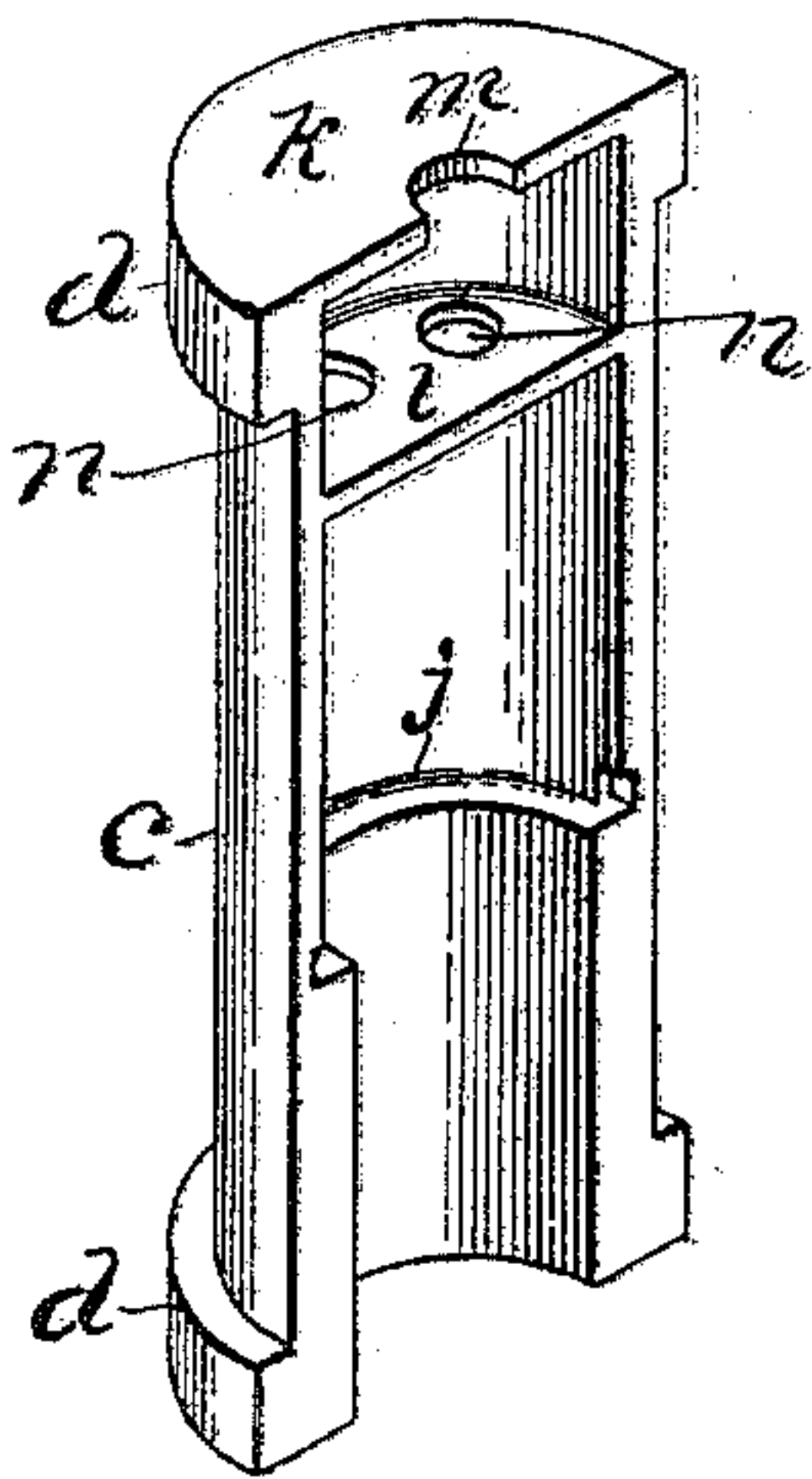


Fig. 3.

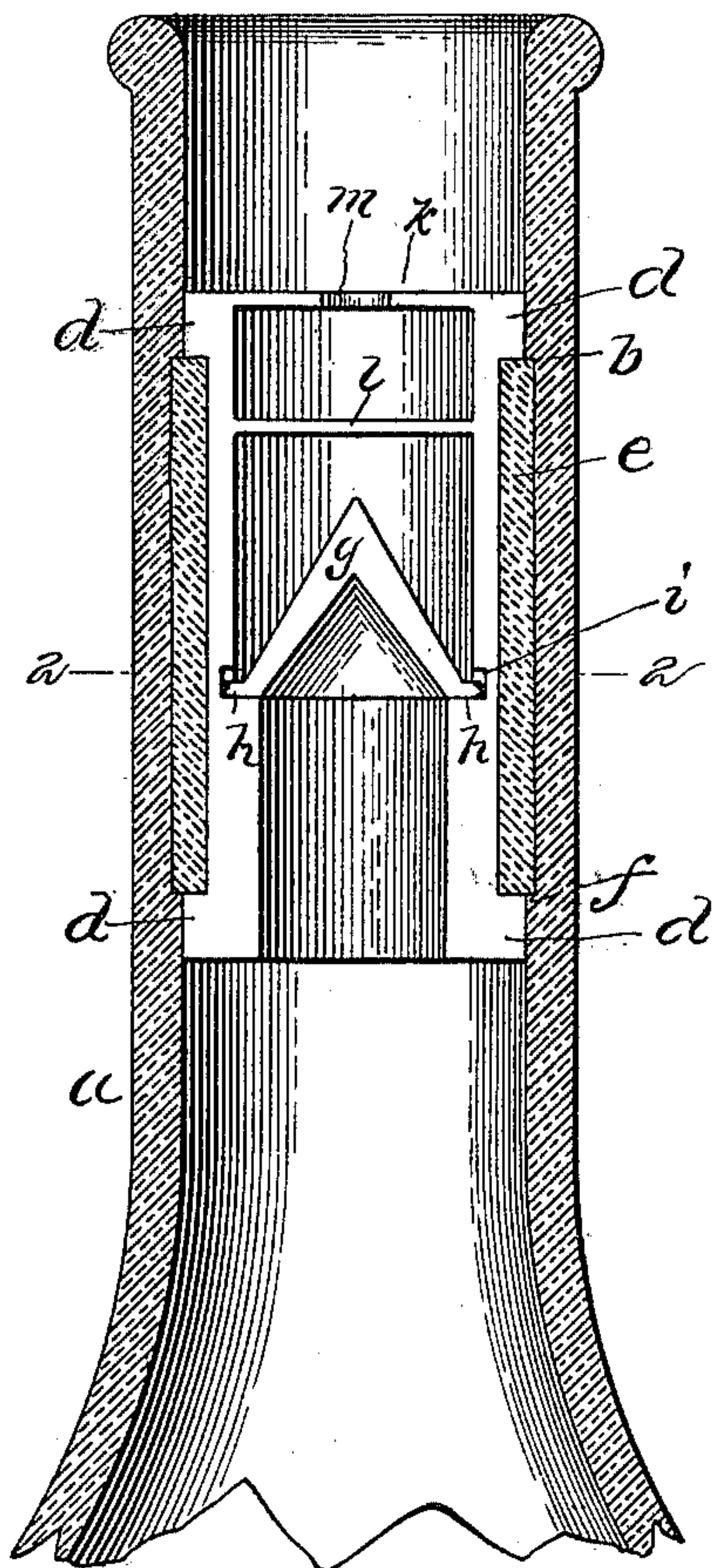


Fig. 1.

Fig. 2.

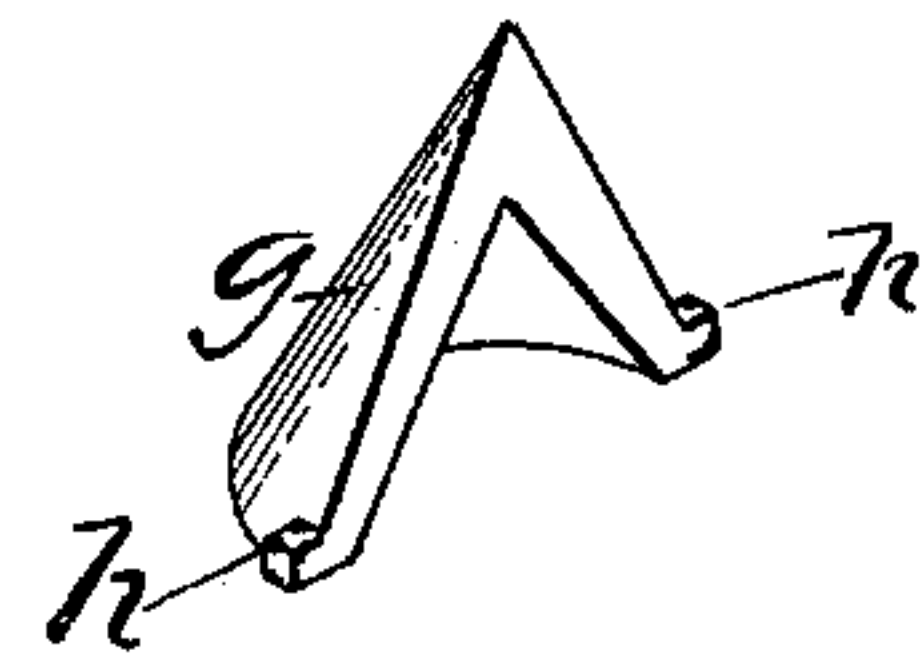
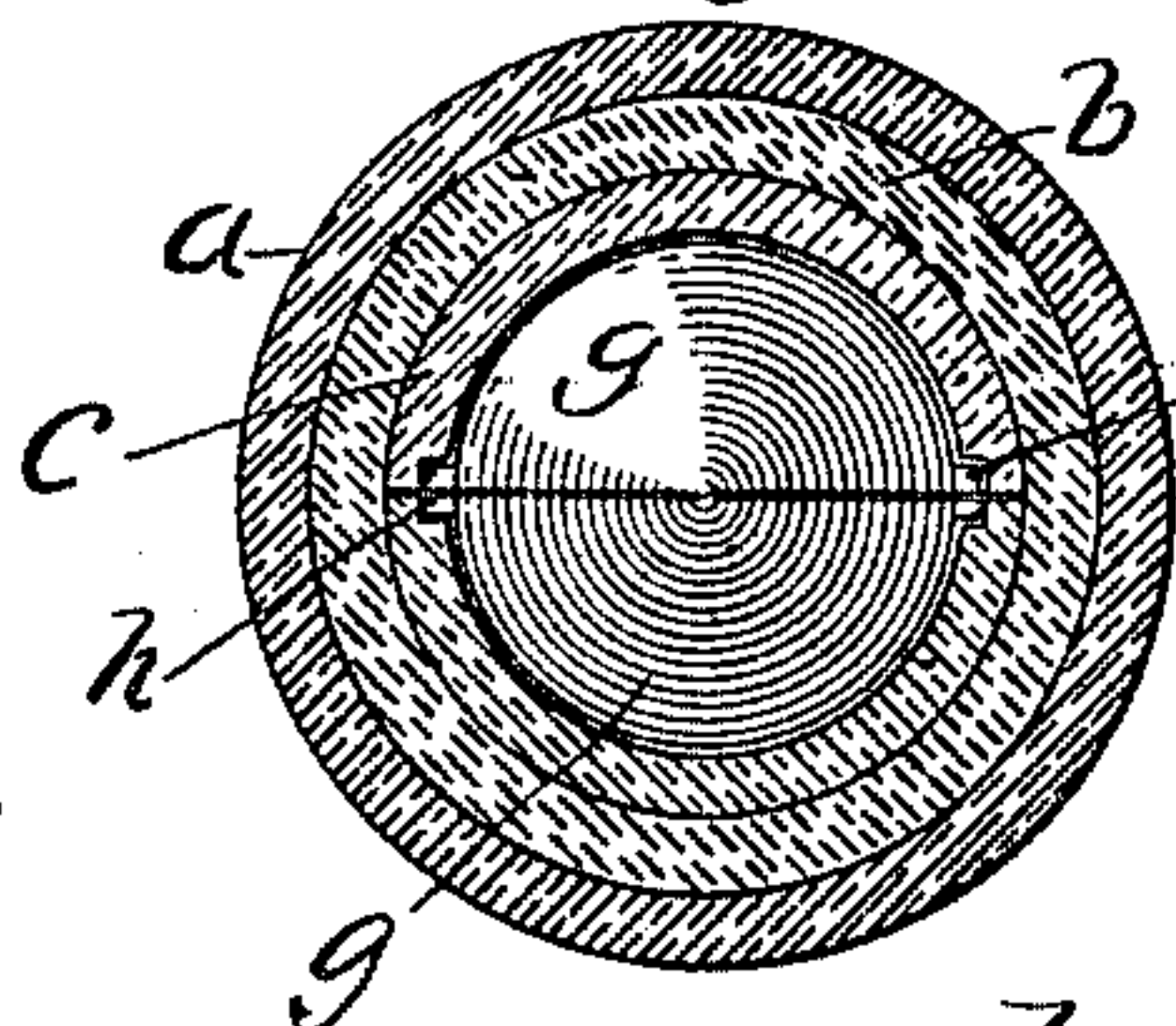


Fig. 4.

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 626,516, dated June 6, 1899.

Application filed April 17, 1899. Serial No. 713,286. (No model.)

To all whom it may concern:

Be it known that I, AVEDIS D. AVEDISYAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention has relation to so-called "non-refillable bottles"—that is, to bottles which, after having been once filled and decanted, cannot, by reason of the structure of the stopple or mechanism in the neck or other part of the bottle, be again filled without detection. Many devices for accomplishing this end have heretofore been proposed, of which many have been so complicated as to preclude their adoption, many have been quite imperfect, while many, in addition to their inadequacy, have contained deleterious substances in their structures.

It is recognized by those skilled in the art that a non-refillable bottle to be acceptable must be to all intents and purposes incapable of being filled after decantation without more trouble and expense than it is worth to do the work. Again, the device must be of simple construction and must not require for its use a too-great distortion of the form of the bottle. Furthermore, the means for preventing filling must not contain any deleterious substance, such as metal, which will affect the nature of the liquid contained in the bottle. By my invention I attain these desirable ends.

My invention consists of a split cylinder having flanged ends, with a sleeve of cork or equivalent substance surrounding the cylinder between the flanges, and a split cone-shaped valve arranged within the cylinder in such manner that the two parts of the valve may have a little play or be loose at their bases, while their conical ends may be allowed to separate slightly when the bottle is being decanted, but be at other times closed, so that no liquid or other substance can be readily gotten into the bottle. The cylinder is provided at its upper end with guards to prevent the valve from being tampered with by

wires or the like, and means are also embraced in the structure to prevent the cylinder from being extracted from the neck of the bottle, all as I will now proceed to describe and claim.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a vertical central sectional view of a neck of a bottle provided with my improved non-refillable mechanism. Fig. 2 is a horizontal sectional view of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of a divided half of the cylinder constituting part of my improvements. Fig. 4 is a perspective view of one-half of the divided conical valve.

In the drawings, *a* designates the neck of a bottle, which may be constructed with a shoulder or offset *b*, for a purpose to be presently explained.

c designates one half of a cylinder provided with flanged ends *d*, adapted to fit within the neck of the bottle, as indicated in Fig. 1. Between the flanges *d* of the cylinder there is a sleeve *e*, of cork or equivalent material, which surrounds the sleeve when the two halves are arranged together and forced into the neck of the bottle. With the cylinder so constructed and surrounded by the cork sleeve *e* between the flanges the cylinder and its sleeve may be forced into the neck of the bottle, with the upper edge of the sleeve *e* extending just below the offset or ledge *b*, so that the cork sleeve can swell outward into the enlarged circumference of the neck of the bottle below the ledge *b* and between the same and it may be another ledge of similar character *f*, thus securing the cylinder within the neck of the bottle against extraction by a cork-screw or any other means. The cylinder is provided at an intermediate point with a centrally and vertically divided conical valve *g*, each half of the valve having at opposite sides lugs *h*, which extend into recesses *i* slightly larger than the lugs, so that the lugs of the two halves of the conical valve may have slight play in the said recesses. The lower edge of the conical valve rests upon

a ledge *j*, formed in the cylinder *c*, as is clearly indicated in Fig. 3. With this construction the halves of the conical valve may be readily placed in the respective halves of the cylinder *c* and the two halves of the cylinder put together, as before described, thus bringing the two halves of the conical valve together and completing a complete cone. Under these circumstances the faces of the valve (which may be ground so as to fit closely) will be brought together, forming a practically liquid-tight joint, and owing to the form of the valve the two halves will not be separated no matter what position the bottle may be turned into, excepting when liquid within the bottle is being decanted or poured out therefrom, when the pressure of the liquid will separate the tops of the two halves *g* of the valve slightly, allowing the liquid to flow out between the two faces of the valve, and as soon as the bottle is turned to position to stop the outflow of the liquid or as soon as all of the liquid within the bottle is poured out the two halves of the valve will by their own gravity fall together, forming a tight joint between the two halves, thus effectually preventing any liquid being poured in from the top of the bottle.

If it should be attempted to pump air out of the bottle and then allow liquid to flow in after the air is pumped out, while during the process of pumping the halves of the conical valve may for a time separate, still as soon as pressure comes from the outside the two halves will be brought together, forming a perfectly-air-tight connection and preventing the inflow of liquid or air into the bottle. If it should be attempted to fill the bottle by shaking it in a bath of liquid, the halves of the valve will still, by their own gravity, be held together, effectively preventing any liquid from passing into the bottle by this process.

It has been found from careful experimentation that a bottle equipped as hereinbefore described will withstand all of the tests applied to so-called "non-refillable" bottles to ascertain their effectiveness.

I propose to construct the cylinder *c* with guard-plates *k l*, the former at the top of the cylinder and the latter lower down. Through the upper guard-plate *k* there may be formed a hole *m* and through the lower guard-plate holes *n n* at points which will prevent the insertion of a wire or similar means to interfere with the operation of the valves.

The device comprising my improvements may be inserted in the neck of a bottle sufficiently deep to leave space above the same for the insertion of a cork or stopple (not shown) of usual construction.

In practice the lugs *h* on the halves of the conical valve will generally be made somewhat rounded, as shown in the drawings, and for that matter the recesses *i* may be similarly formed, or any other construction may

be given to the lugs and recesses that will insure their not binding in the recesses when the valves open and close. It may, furthermore, be stated that from experiments made with the invention it is doubted as to whether if an air-pump should be applied to the top of the bottle to draw the air from the interior of the bottle the valves would open to allow the air to be drawn out.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A bottle having a cylinder secured in its neck, provided with recesses *i*, and a conical valve divided centrally and vertically, each half of the valve being provided with lugs *h* extended into the said recesses.

2. A bottle having a cylinder secured in its neck, provided with recesses *i* and a ledge *j*, and a conical valve divided centrally and vertically, each half of the valve being provided with lugs *h* extended into said recesses, and the bases of the valves resting upon the said ledge.

3. A bottle having a cylinder secured in its neck, provided with recesses *i*, and a conical valve divided centrally and vertically, each half of the valve being provided with lugs *h* extended into the said recesses, and the recesses being of slightly greater area than the size of the lugs.

4. A valve for non-refillable bottles consisting of a centrally and vertically divided cone, each half of the valve being provided at opposite sides with lugs *h*.

5. The combination, with the neck of a bottle provided with the recesses *i* and ledge *j*, of the vertically-divided conical valve having the lugs *h* adapted to extend into said recesses and the base of the valve adapted to rest upon the said ledge.

6. The combination of the cylinder provided with the recesses *i* and ledge *j*, the vertically-divided conical valve having the lugs *h* adapted to extend into said recesses, and the guard-plates *k l* connected with the cylinder above the valve.

7. The combination of the neck of a bottle having an offset *b*, the divided cylinder with flanged ends, a cork sleeve surrounding the cylinder between the flanges of the ends and being adapted to be forced into the neck of the bottle below the flange *b*, the divided conical valve supported in the cylinder to permit the top portions to separate slightly when liquid is being poured out of the bottle and to close at other times.

8. The combination of the neck of a bottle having an offset *b*, the divided cylinder with flanged ends, a cork sleeve surrounding the cylinder between the flanges of the ends and being adapted to be forced into the neck of the bottle below the flange *b*, the divided

conical valve supported in the cylinder to permit the top portions to separate slightly when liquid is being poured out of the valve and to close at other times, and guard-
5 plates in the cylinder above the valve, as set forth.

In testimony whereof I have signed my

name to this specification, in the presence of two subscribing witnesses, this 4th day of April, A. D. 1899.

AVEDIS D. AVEDISYAN.

Witnesses:

ARTHUR W. CROSSLEY,
ANNIE J. DAILEY.