

(No Model.)

F. L. COOK.
NON-REFILLABLE BOTTLE.

No. 574,193.

Patented Dec. 29, 1896.

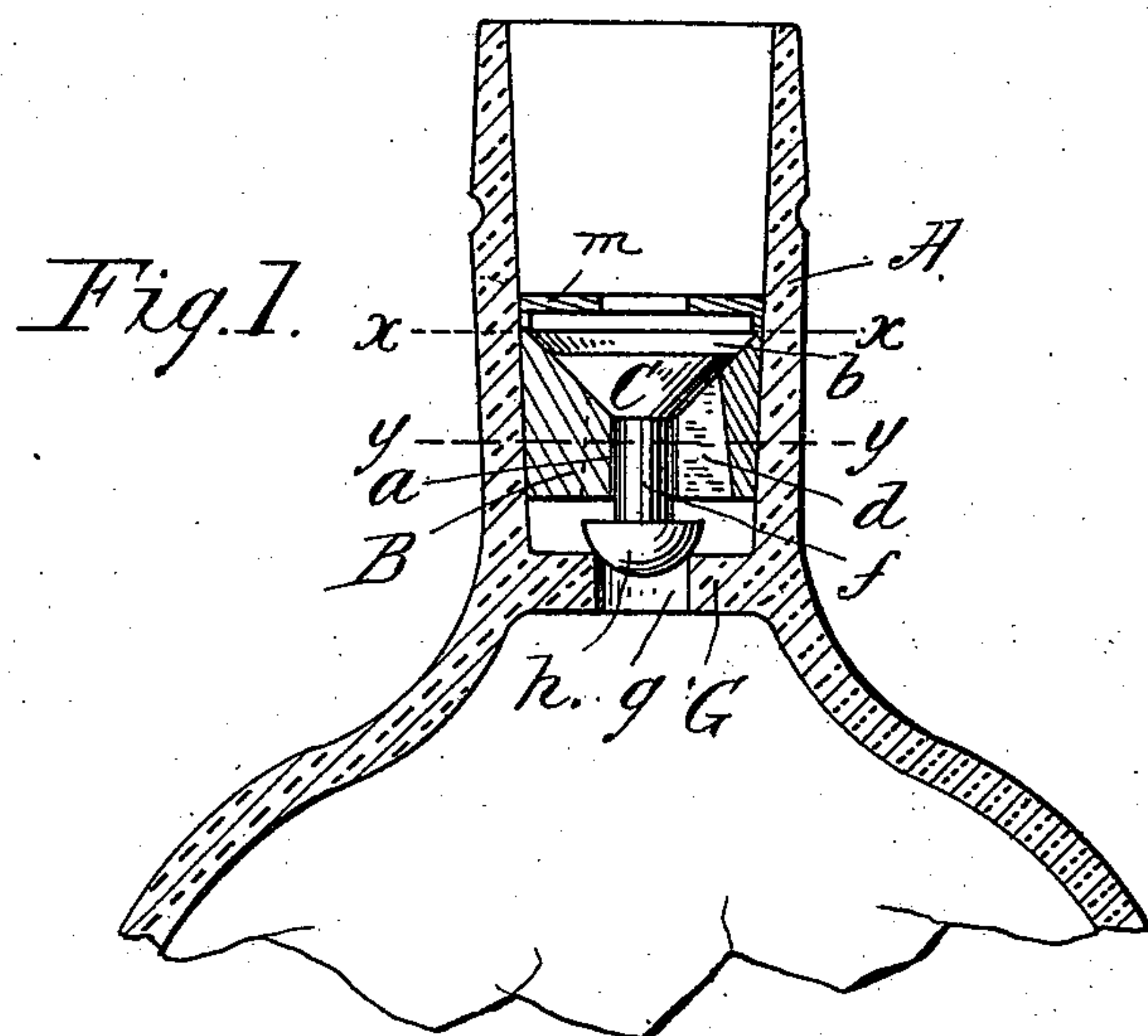
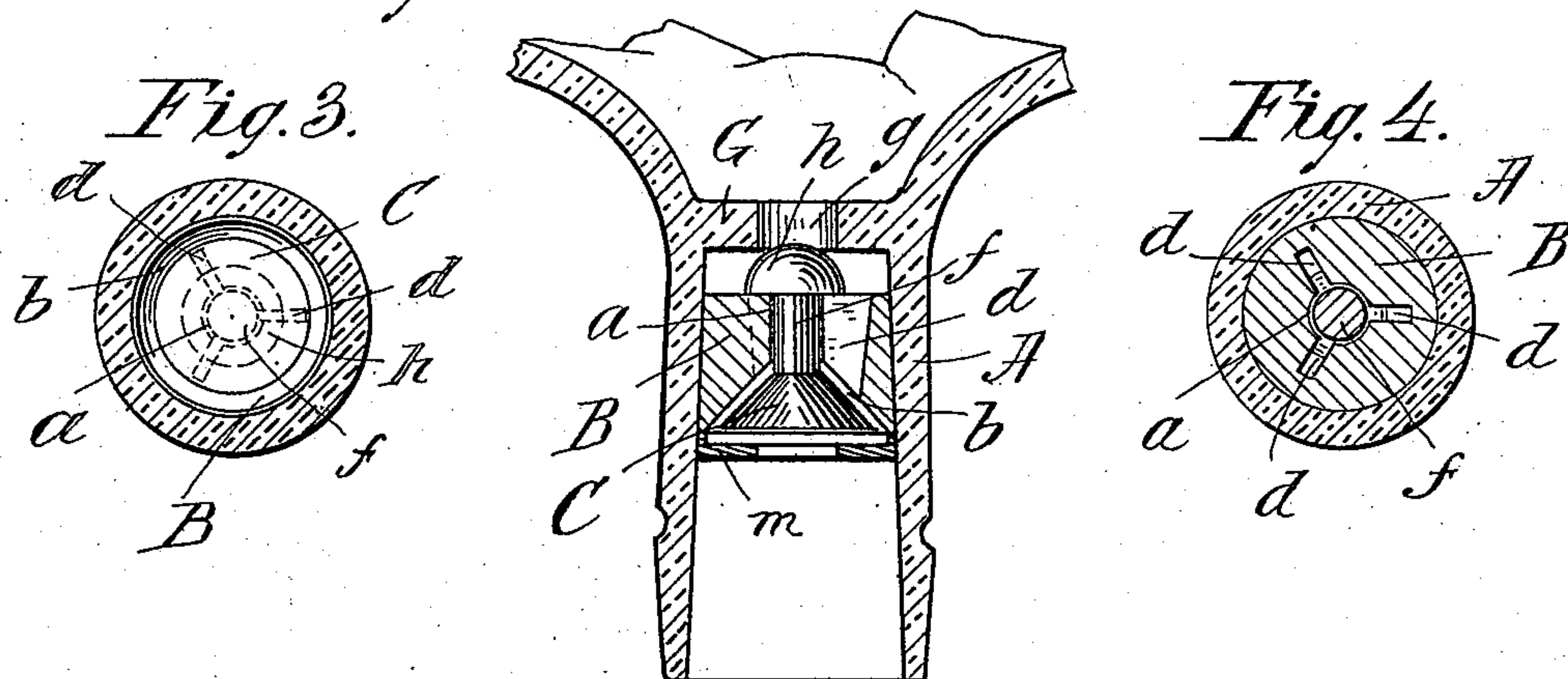


Fig. 2.



Witnesses:

N. M. Bellows

A. D. Porter

Inventor,

Francis L. Cook,

by N. M. Bellows,
Attorney.

UNITED STATES PATENT OFFICE.

FRANCIS L. COOK, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO SYLVESTER A. RYAN, OF SAME PLACE.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 574,193, dated December 29, 1896.

Application filed April 15, 1896. Serial No. 587,616. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS L. COOK, a citizen of the United States, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to improvements in non-refillable bottles, the object being to provide a device of the class named which shall be simple, practical, inexpensive, and efficient; and the invention consists in constructions and combinations of parts, all substantially as will hereinafter fully appear, and be set forth in the claim.

Reference is to be had to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a central sectional view vertically through the neck portion of a bottle, showing the improved appliances as in position when the bottle is upright. Fig. 2 is a similar sectional view, the parts being inverted as permitting the outflow of liquid from the bottle. Fig. 3 is a cross-sectional view on line *x x*, Fig. 1. Fig. 4 is a cross-sectional view on line *y y*, Fig. 1.

The neck A of the bottle has therewithin a partition B, preferably produced by a separately-formed insertible plug. The internal wall in the neck of the bottle may be slightly downwardly tapering, so that the plug will seat itself sufficiently far below the mouth to allow the insertion of the usual cork or stopper. The said plug or partition has an axial perforation *a* and at its upper end an upwardly-flaring seat *b*, and it also has leading from said flaring seat, downwardly through it, one or more (as shown, three) passages *d*. C represents a conical valve adapted to rest within and close upon said seat, it having the depending stem *f*, which projects below the partition and has on its lower end the enlargement *h*, which is normally but a slight distance below the bottom of the partition, whereby the conical valve is permitted to have only a slight axial movement as necessary to uncover the upper ends of the passages *d*. In practice I prefer to have the said passages opening radially from the central

perforation *a*, as seen in Fig. 4, and the conical valve is of such size that when seated it closes the upper orifices of said passages. I also prefer that when seated the conical valve will be somewhat below the top of the flaring opening *b*, in which it rests.

Below the plug or partition B is a second partition G, having a central opening *g*, which is normally closed by the enlarged hemispherical end portion *h* of the valve-stem.

The conical valve C and the bottom enlargement *h* constitute double closures for the neck of the bottle and may render the provision of a cork or stopper unnecessary. The lower partition also serves to prevent the plug which constitutes partition B from being driven downwardly through the neck of the bottle.

In carrying out the invention I prefer to have the radial or wing-like passages *d* downwardly widened, as shown in Fig. 1, whereby, while their upper orifices are so inwardly disposed as to be efficiently overlaid by the cone C, their lower orifices will extend well outside of the area which, when the bottle is inverted, would be covered by the enlargement on the end of the valve-stem. I also prefer to further provide a guard to fit in the neck of the bottle above the valve and its seat for preventing the insertion of a wire or small pointed instrument for holding the valve up from its seat, whereby under certain conditions liquor might possibly be introduced into the bottle after the improved appliances had been provided therein; and this guard advantageously consists of a glass or porcelain washer *m*, crowded or cemented in the neck of the bottle, having its position near, but slightly separated from, the upper end of the partition.

I do not desire to be understood as limiting myself to the use of any particular material in the production of my improved appliances, but I prefer to construct the same of porcelain or glass, and while I do not consider it necessary to cement the plug-partition in its position shown I may readily do so by the use of any of the well-known glass or porcelain cements.

The plug-partition B with its valve, valve-stem, and lower-end enlargement may be

made of porcelain or glass by molding or otherwise, separately, and by being rendered plastic united and combined in their relations shown, and the guard *m* may be united
5 to the plug-partition B previous to introduction into the bottle.

In this device no metallic parts or springs or any material of a nature subject to corrosion are necessary, and the device is constructed with especial dependence on the
15 effect of gravity for insuring its operative-ness.

The neck of the bottle may terminate at about the level of the upper end of the improved appliance shown when it is not required that a cork or stopper be used.

I claim—

In a non-refillable bottle the combination with the neck proper having the integrally-
20 formed centrally-apertured partition G, and thereabove, and separated therefrom, the partition-plug B having the central perfora-

tion, the upwardly-flaring seat *b*, and the radially-arranged passages, *d*, *d*, leading from the seat down through said plug, of the cone- 25 valve C fitted in said seat, and, when seated closing the upper ends of said passages *d*, and having the stem playing with a sliding fit through said central perforation, depending below the plug and provided at its lower end 30 with the valve, *h*, normally adapted to seat itself in the central aperture of said partition, G, and serving as a stop to limit the upward movement of the valve C by abutment against the lower end of the plug, substantially as 35 described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of April, 1896.

FRANCIS L. COOK.

Witnesses:

FRANCIS C. COOK,
WM. S. BELLOWS.