

(No Model.)

W. E. FORSTER.  
BOTTLE LOCK.

2 Sheets—Sheet 1.

No. 537,970.

Patented Apr. 23, 1895.

FIG. 1.

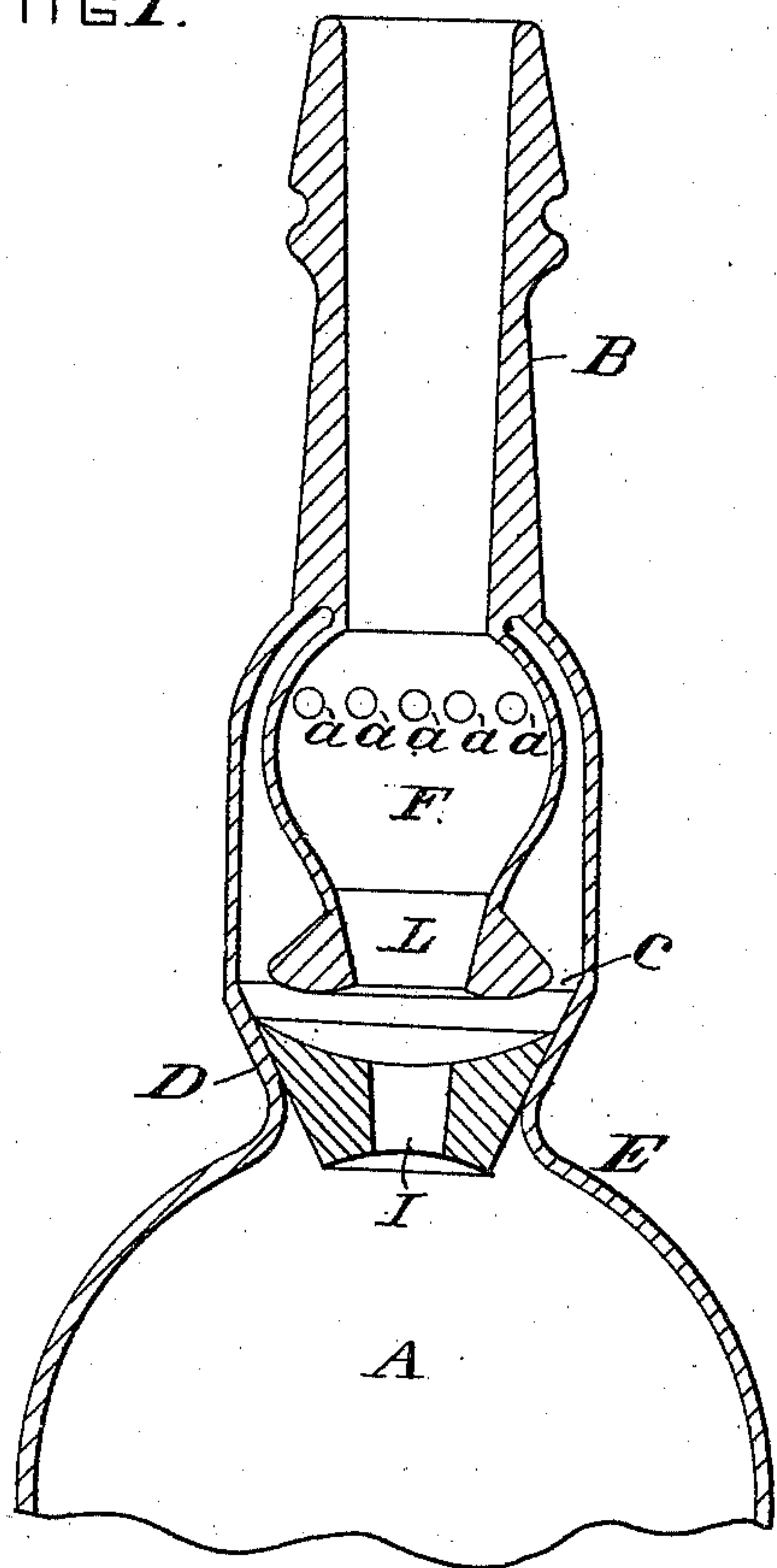


FIG. 2.

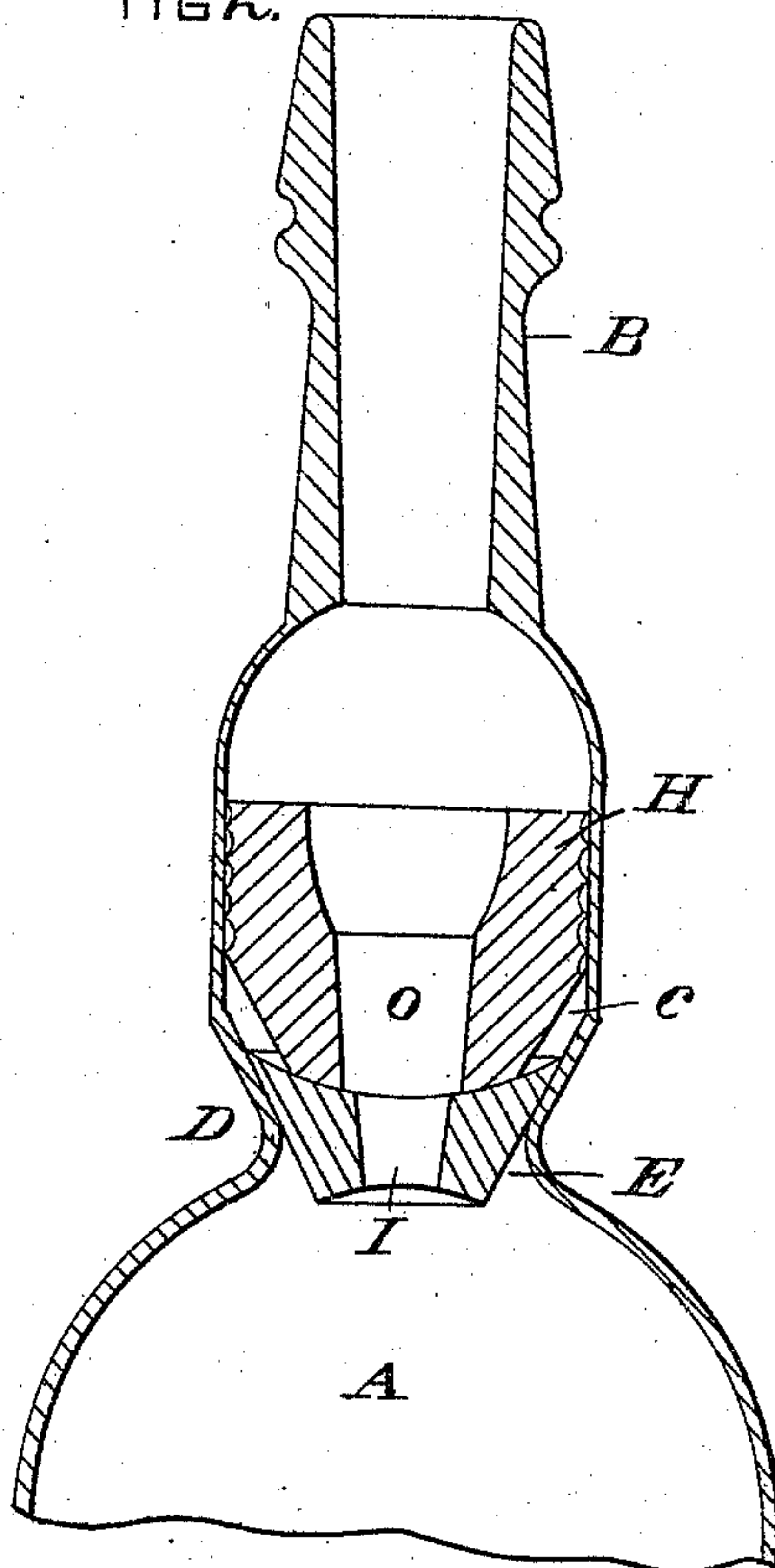


FIG. 3.

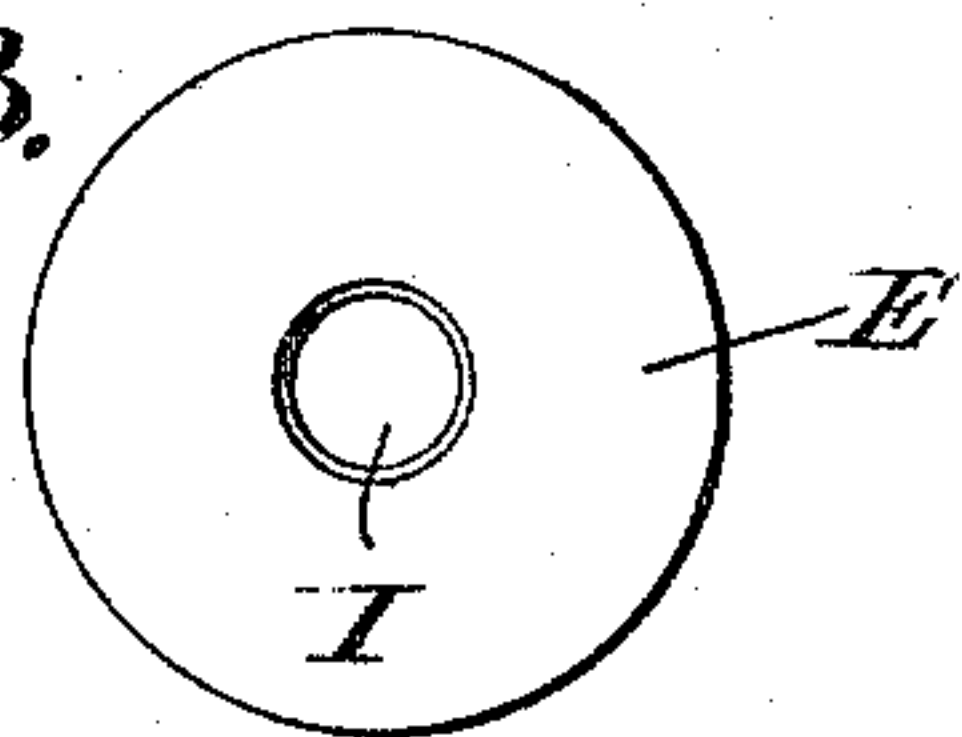


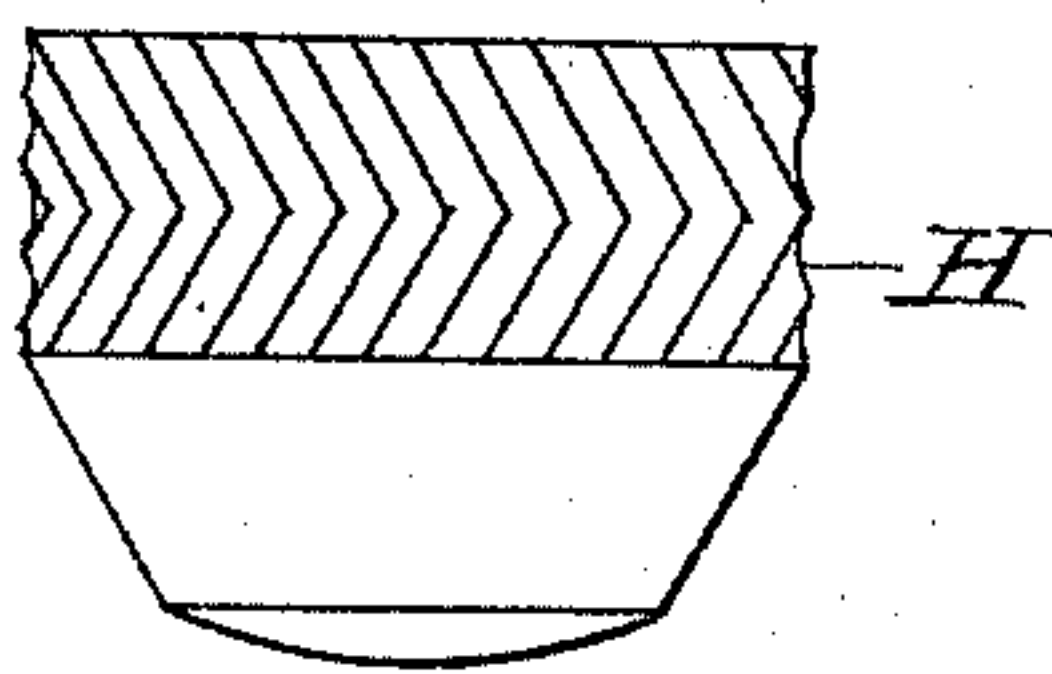
FIG. 5.



FIG. 6.



FIG. 4.



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(No Model.)

2 Sheets—Sheet 2.

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FIG. 7.

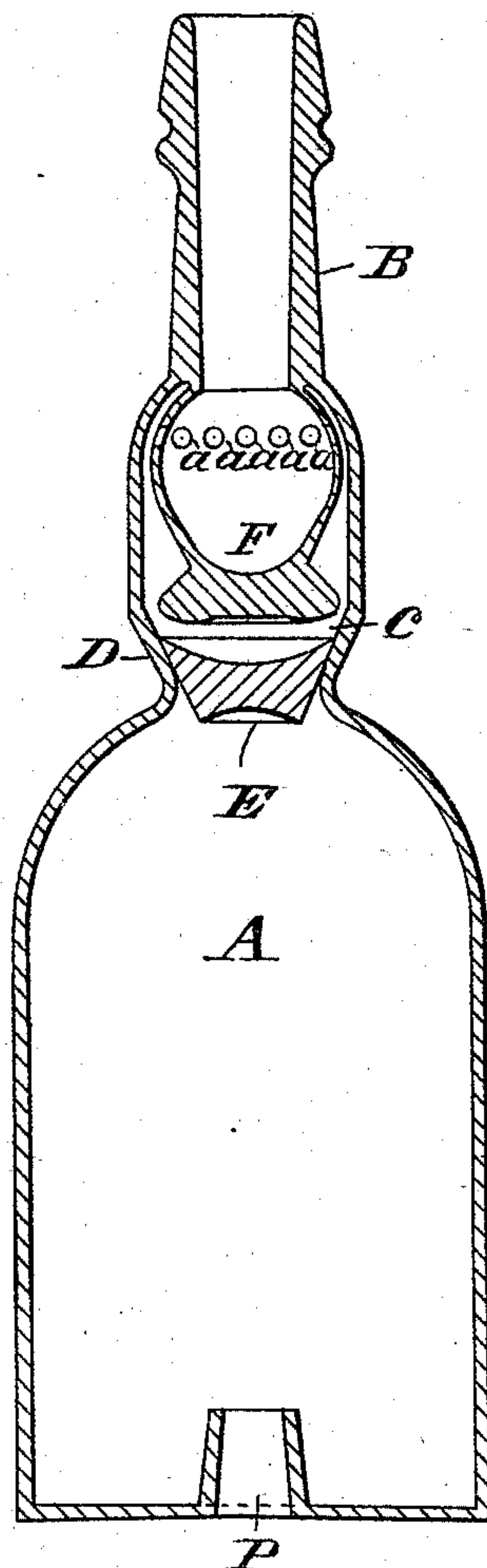


FIG. 8.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM E. FORSTER, OF LYNN, MASSACHUSETTS.

## BOTTLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 537,970, dated April 23, 1895.

Application filed June 16, 1894. Serial No. 514,735. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. FORSTER, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Bottle-Locks, of which the following is a specification.

My invention relates to improvements in devices of the above class and consists of a valve chamber formed in the neck of the bottle, a valve seat communicating with said chamber, a valve working against said valve seat, and a device for protecting the valve.

My invention further consists of the devices and combination of devices hereinafter more specifically set forth and claimed.

The object of my invention is to provide a device which will prevent the re-filling of a bottle after it has been emptied of its contents.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a sectional view of a bottle lock embodying my invention. Fig. 2 is a similar view, showing another method of constructing the same. Fig. 3 is a top view of the valve as used in one form of my invention. Fig. 4 is a side view of the valve guard in form shown in Fig. 2. Figs. 5 and 6 are devices for closing the perforations in the valve and valve guard. Fig. 7 shows a form of my invention with filling device at the bottom of the bottle, and Fig. 8 a device for closing said filling device.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, A represents a bottle of ordinary form (the portion not needed for illustration in Figs. 1 and 2 being broken out). In the neck B of the bottle A is formed a valve chamber C, communicating with which is the valve seat D, against which works the valve E. The valve E is so arranged upon the valve seat D that liquid flowing into the bottle through the valve chamber C will close the same, while liquid flowing out of the bottle will open the valve E. A device may be provided for preventing the valve E, when the liquid flows out, from working too far from the valve seat, but I prefer to accomplish this by the valve guards as hereinafter described. The further function of the valve

guard is to prevent the valve from being held open by an instrument inserted in the neck of the bottle. It is evident that this result may be secured by various devices, all of which I regard as within the scope of my invention, and of which I have shown two of the most convenient forms, which are described as follows:

In the first form (as shown in Figs. 1 and 7) a bulb F is located in the neck of the bottle, preferably in and formed integral with that portion enlarged to form the valve chamber C, and placed slightly above the valve E so as to allow the valve E sufficient play above the valve seat D to permit the outflow of the liquid, but preventing it from being carried too far to be readily closed by the inflowing liquid. The bulb F is provided with an opening at the top communicating with the neck of the bottle above the bulb, and a series of perforations *a, a, a, a*, at the side communicating with the chamber C. In certain forms of my invention the bulb F is provided with an opening at the bottom communicating with the chamber C, the function of which will be hereinafter set forth. A convenient method of constructing this portion of my invention is to form the bulb F at the end of a tube, placing it in the chamber C, and afterward forming the neck of the bottle about the tube. The bulb F is held at a sufficient distance from the sides of the chamber C to allow the liquid to flow around the same freely and out of the perforations *a, a, a, &c.*

The form of valve guard shown in Fig. 2 consists of a disk H of glass or other suitable material placed in the chamber C above the valve E, preferably fitting closely in said chamber and having its periphery corrugated to allow the passage of the liquid around the same. These corrugations are preferably made on broken or curved lines to prevent the insertion of a wire or similar instrument to reach the valve E. (See Fig. 4.) The disk H may be secured at a proper distance above the valve E (by projections from the side of the chamber C) to allow play to, and act as a stop for the valve E, or it may be left movable, as shown in Fig. 2, and rest upon the valve E, when the bottle A is upright. In such construction sufficient play must be given the



disk H in the chamber C to allow space for the operation of the valve as hereinbefore described.

When desired to fill the bottle through the neck or from a point above the valve E, the valve E is formed with a perforation I which is preferably circular and centrally placed, and in constructions where bulb F is used as a valve guard the bulb F is provided with a somewhat larger opening L, similarly shaped, at the bottom of the bulb, and above the opening I in the valve E. In constructions where disk H is used the disk H is provided with a similar opening O immediately above the opening I in valve E.

When the bottle is filled from a point below the valve E the valve E and valve guards are formed without opening I, L, or O. To close the opening I, L, or O, I prefer to use stoppers of glass or other suitable hard material as represented by I' and L' in Figs. 5 and 6, which in practice may be coated on the periphery with cement or other adhesive material and firmly set in said openings. A similar device P' (Fig. 8) may be used to close the opening P used to fill the bottle at a point below the valve.

The method of using my invention is as follows:—When filled through the neck or from a point above valve E, the liquid is first poured into the bottle until sufficiently full and the stoppers are then inserted in the valve guard and valve; a stopper being first inserted in valve, through opening in valve guard, and the opening in valve guard then closed by another stopper. The position of stoppers is such that if made of glass or other hard

material it is practically impossible to withdraw them. When filled from a point below the valve it is simply necessary to close opening P as hereinbefore described.

I claim as my invention and desire to secure by Letters Patent—

1. In a bottle lock, the combination with the neck of a bottle having a valve seat therein, a perforated valve loosely seated on the seat, a valve guard above the valve having passages in its sides and a central opening above the opening in the valve and in line with the bore of the neck, and stoppers fixedly seated in the openings of the valve and guard, substantially as described.

2. In a bottle lock, the combination with a chambered neck having a valve seat at its base, of a valve loosely seated on the seat and having a central fill opening therein, a valve guard above the valve formed with liquid passages, a central opening in line with the bore of the neck and of a size greater than the opening in the valve and means for sealing the openings, substantially as described.

3. In a bottle lock, the combination with the neck having a valve seat therein, of a loosely fitting valve on the seat having a fill aperture therein, a guard above the valve having a fill aperture in line with the valve aperture and bore of the neck, and means for sealing the apertures, substantially as described.

In witness whereof I have hereunto set my hand this 28th day of July, A. D. 1893.

WILLIAM E. FORSTER.

Witnesses:

WILLIAM S. BABBITT,  
WILLIAM H. McKEEN.