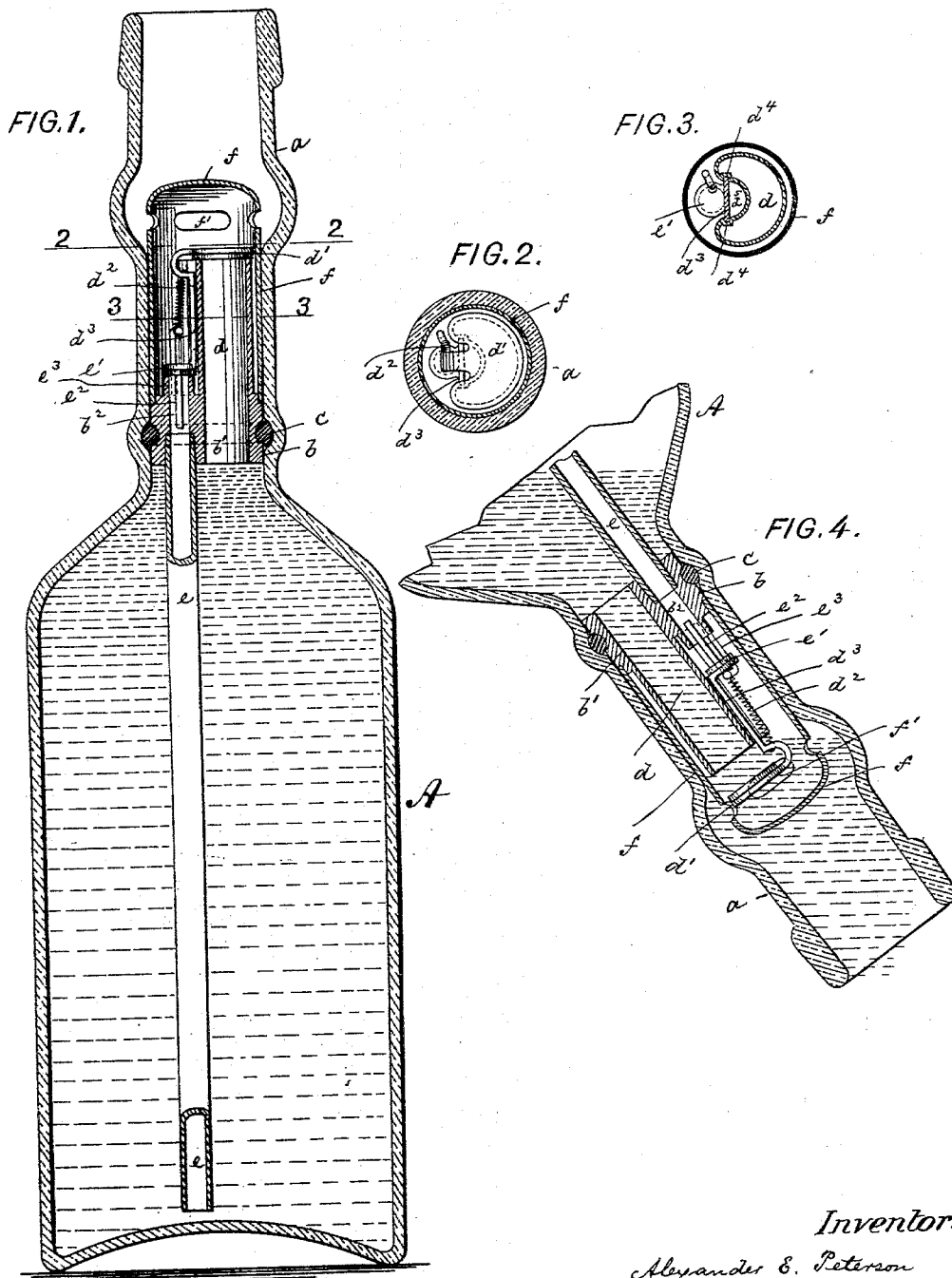


(No Model.)

A. E. PETERSON.
NON-REFILLABLE BOTTLE.

No. 593,117.

Patented Nov. 2, 1897.



Witnesses:
John Becker.
William Miller.

Inventor:
Alexander S. Peterson
by his attorneys
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UNITED STATES PATENT OFFICE.

ALEXANDER E. PETERSON, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 593,117, dated November 2, 1897.

Application filed August 27, 1897. Serial No. 649,712. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER E. PETERSON, of New York city, county and State of New York, have invented an Improved Non-Refillable Bottle, of which the following is a specification.

This invention relates to a non-refillable bottle which is of simple construction and in which a body of air is admitted near the bottom of the bottle and beneath the liquid during the discharge to expedite the outflow.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved non-refillable bottle; Fig. 2, a cross-section on line 2 2, Fig. 1; Fig. 3, a cross-section on line 3 3, Fig. 1, with the bottle omitted; and Fig. 4, a longitudinal section through the upper part of the bottle, showing the position of the parts when the bottle is tilted.

The letter A represents a bottle, into the neck *a* of which a disk *b* is securely fastened by a packing *c*, engaging opposing grooves in the neck and disk. From the disk *b* projects upwardly a liquid-discharge tube *d*, communicating at the bottom with a corresponding opening *b'* of the disk and closed on top by a valve *d'*, which is drawn normally upon its seat by a weak spring *d²*. A second smaller opening *b²* of disk *b* communicates at its lower side with a long air-tube *e*, that reaches nearly to the bottom of the vessel A and is placed side by side to the tube *d*, so that the egress of the liquid will not interfere with the ingress of the air.

At its top the air-tube is normally closed by a valve *e'*, the stem *e²* of which passes through the valve-seat *e³*.

The valve *e'* is connected to and movable with the stem *d³* of valve *d'*. This stem is guided within a pair of grooved ways *d⁴* of tube *d*, which tube is made with a reëntrant angle *d⁵* to provide an exterior chamber for the reception of the valve-stem, Fig. 3. A cap *f*, having discharge-openings *f'*, is per-

manently fitted to the disk *b* to inclose and protect the valves and operating mechanism.

Normally both the valves *d'* *e'* are closed to close both the liquid-tube *d* and air-tube *e*. When the bottle is tilted, the weight of the liquid will open valve *d'* (against action of weak spring *d²*) and also valve *e'*, because the latter is connected to the valve-stem *d³*. Thus the liquid is free to flow out of the bottle, the flow being greatly assisted by the influx of air into the bottom of the bottle beneath the body of the liquid. As soon as the bottle is righted both valves will be at once closed by the spring *d²*.

What I claim is—

1. In a non-refillable bottle, the combination of a perforated disk with an upwardly-extending liquid-discharge tube, and a downwardly-extending air-tube placed side by side, and with a pair of coacting valves that control such tubes, substantially as specified.

2. In a non-refillable bottle, the combination of a perforated disk with an upwardly-extending liquid-discharge tube, and a downwardly-extending air-tube placed side by side, a valve *d'*, having a stem *d³*, for closing the liquid-tube, a valve *e'*, for closing the air-tube and connected to the stem *d³*, and a perforated cap which incloses the valves, substantially as specified.

3. In a non-refillable bottle, the combination of a perforated disk with an upwardly-extending liquid-discharge tube having a reëntrant angle and exterior guideways, a valve *d'*, having a stem *d³*, engaging the same, an air-tube depending from the disk, a valve *e'*, for closing the same and connected to stem *d³*, and a perforated cap which incloses the valves, substantially as specified.

ALEXANDER E. PETERSON.

Witnesses:

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