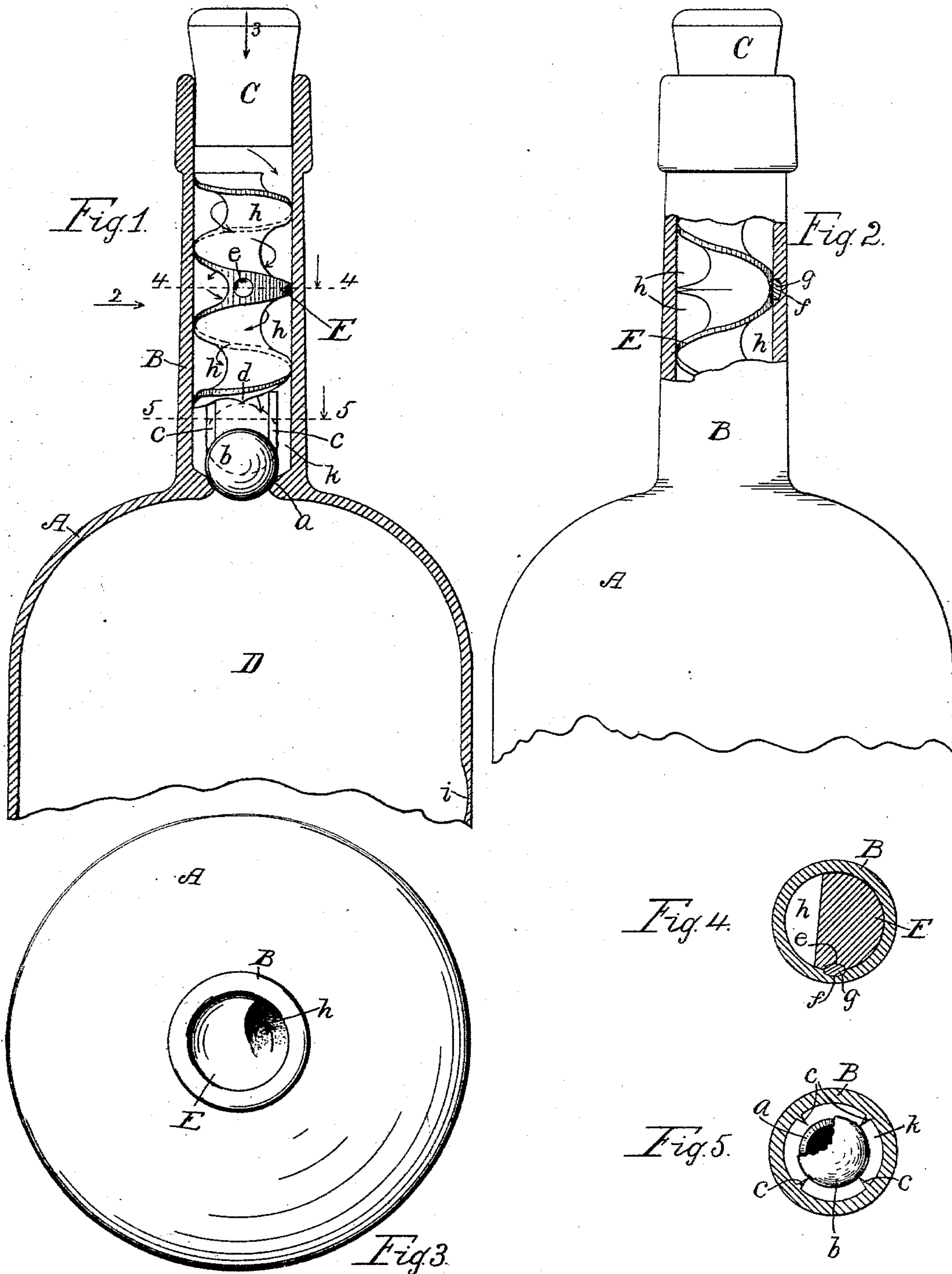


(No Model.)

W. J. BARRETT.
NON-REFILLABLE BOTTLE.

No. 597,095.

Patented Jan. 11, 1898.



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UNITED STATES PATENT OFFICE.

WESLEY J. BARRETT, OF MARION, NEW YORK.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 597,095, dated January 11, 1898.

Application filed August 6, 1896. Serial No. 601,857. (No model.)

To all whom it may concern:

Be it known that I, WESLEY J. BARRETT, of Marion, in the county of Wayne and State of New York, have invented a new and useful Improvement in Non-Refillable Bottles, which improvement is fully set forth in the following specification, and shown in the accompanying drawings.

My invention is a non-refillable bottle, the same being hereinafter fully described, and particularly pointed out.

Referring to the drawings, Figure 1 is an axial section of the upper part of a bottle, showing my invention. Fig. 2 is a side elevation of said part of the bottle, seen as indicated by arrow 2 in Fig. 1, a part being longitudinally sectioned. Fig. 3 is a view looking into the neck of the bottle, indicated by arrow 3 in Fig. 1, the stopper being omitted. Figs. 4 and 5 are cross-sections of the neck of the bottle on the dotted lines 4 and 5 respectively, in Fig. 1, and viewed as indicated by the arrows pointed on said dotted lines.

Referring to the drawings, A is a bottle of any common form or kind, B being the neck, and C any suitable stopper therefor. At the base of the neck the latter is formed with an internal circular seat or rest *a*, Figs. 1 and 5, for a valve *b*, which, as shown, is spherical and normally rests on said seat to inclose the interior D of the body of the bottle. Above the valve is placed in the neck of the bottle a body or core E, extending from a point near the stopper downward to a point near the valve, leaving a valve-chamber *k* above the valve, as shown in Fig. 1. This core is cylindrical in form and closely fits the caliber of the neck B of the bottle, and it is formed with a passage *h*, leading inward to the valve-chamber or valve, out through which the liquid in the bottle may flow when the bottle is inverted. The valve-chamber is large enough to allow the valve to move off of its seat *a* sufficiently to allow the liquid to escape.

The valve-chamber *k* is provided with several longitudinal knife-edged ribs or tracks *c*, Figs. 1 and 5, along which the ball moves or rolls when the bottle is inverted or reinverted. The number of these tracks is not essential save that they must be sufficiently numerous so the ball when off of its seat will always be in contact with two of their edges and not al-

lowed to drop between any two of them and so touch the wall of the neck of the bottle. The upper ends of the ribs together form a stop for the core, so as to leave space for the valve-chamber *k* beneath it.

The passage *h* through or along the core is made crooked or to vary from a straight line, it being preferably made spiral in form and in two parts, an upper and a lower, in which the spirals are reversed—that is to say, the spiral passage turns in one direction about half-way down from the upper end of the core and then is reversed or made to turn in the opposite or contrary direction to the lower end of the core.

The core constitutes a stop for the valve, and its lower end is formed with a point *d*, Fig. 1, over the center of the ball, so that when the bottle is tipped or inverted and the ball moves against the core the area of contact between the ball and the core will be very small.

The bottle is formed, in the first instance, with the valve-seat *a* and the ribs *c*, the core being formed separately and subsequently put to place in the neck of the bottle. The core may be made of any suitable material, but it is preferably made of thin glass. The bottle is filled with the liquid it is intended to hold before the ball and the core are inserted, these parts being subsequently put in place. The core is formed with a small cavity *e*, Figs. 1 and 4, and the interior of the neck of the bottle is formed with a corresponding cavity *f*, Figs. 2 and 4, which cavities are filled with cement in plastic state before the core is inserted. The latter being put in place, so that the two masses of cement meet, they unite into a single mass *g*, which hardens and so holds the core rigidly and immovably to place in the neck of the bottle.

When the bottle is inverted to pour out its contents, the ball will move off of its seat and allow the liquid to escape, following the spiral passage *h* along the core E. A refilling of the bottle would be prevented by the ball reoccupying its seat when the bottle is again turned right end up. If the bottle be submerged for the purpose of refilling, the ball would still prevent an inflow of the liquid, unless the mouth of the bottle were inclined sufficiently to cause the ball to roll away from

its seat, in which case the air confined in the bottle would prevent the liquid from flowing in to more than partially fill the bottle.

The bottle is originally formed with a thin side or a thin spot *i*, Fig. 1, somewhere about the body, so that should an attempt be made to exhaust the air from the bottle before submerging for the purpose of filling the atmospheric pressure from without would crack or break it.

The knife-edged ribs *c* and the point *d* of the core are provided so the area of contact between the ball and the surrounding parts shall be as small as possible at all times when the ball is off of its seat. This is for the purpose of preventing the ball from being held up off of its seat against the action of gravity by the introduction into the neck of the bottle of some adhesive substance, as moccas, for example, for the purpose of refilling the bottle. The points of contact between the ball and the surrounding parts above the seat when the ball is off of the latter being small, the adhesive substance could not hold the ball, and a further use of the ribs is to hold the ball in such positions when off of its seat that its center shall always substantially coincide with the axis of the neck of the bottle. Thus held the ball will quickly roll back upon its seat whenever the axis of the bottle is slightly varied from a horizontal, with its mouth above that line. Were the ribs absent the ball would drop from its seat down against the side of the neck of the bottle when the latter is turned upon its side and the mouth of the bottle could be considerably elevated before the ball would again assume its place upon its seat. This considerable elevation of the mouth of the bottle would allow a good deal of air to escape and a corresponding inflow of liquid in an attempt

to refill the bottle before the ball would check such inflow by assuming its position on its seat.

The reverse spiral of the core is intended to prevent a probe or instrument being inserted to hold the ball off of its seat for the purpose of refilling the bottle. Should an instrument, as a piece of wire, for example, bent in spiral form to correspond with the spiral of the upper part of the core, be turned downward in the passage *h*, as indicated by the curved arrows in said upper half of the core in Fig. 1, it could be inserted only about to the dotted line 4 4, for at that place the direction of the spiral is reversed and the progress of the wire would be arrested.

What I claim as my invention is—

1. A bottle having a valve in its neck, and a core above the valve, the core having a spiral passage communicating with the valve, the spiral being reversed or turned in a contrary direction between the ends of the core, substantially as specified.

2. The combination, with a bottle, the neck of which is recessed near its upper end, of a valve in the neck, a core above the valve, the periphery of which is provided with a spiral, the spiral being reversed intermediate its ends whereby a wedge-shaped portion is formed at the point where the two spirals meet, the core being recessed at the wider portion of the wedge and adapted to register with the recess in the neck, and a key of cement in the recesses, substantially as set forth.

In witness whereof I have hereunto set my hand, this 30th day of July, 1896, in the presence of two subscribing witnesses.

WESLEY J. BARRETT.

Witnesses:

ENOS B. WHITMORE,
M. L. WINSTON.