

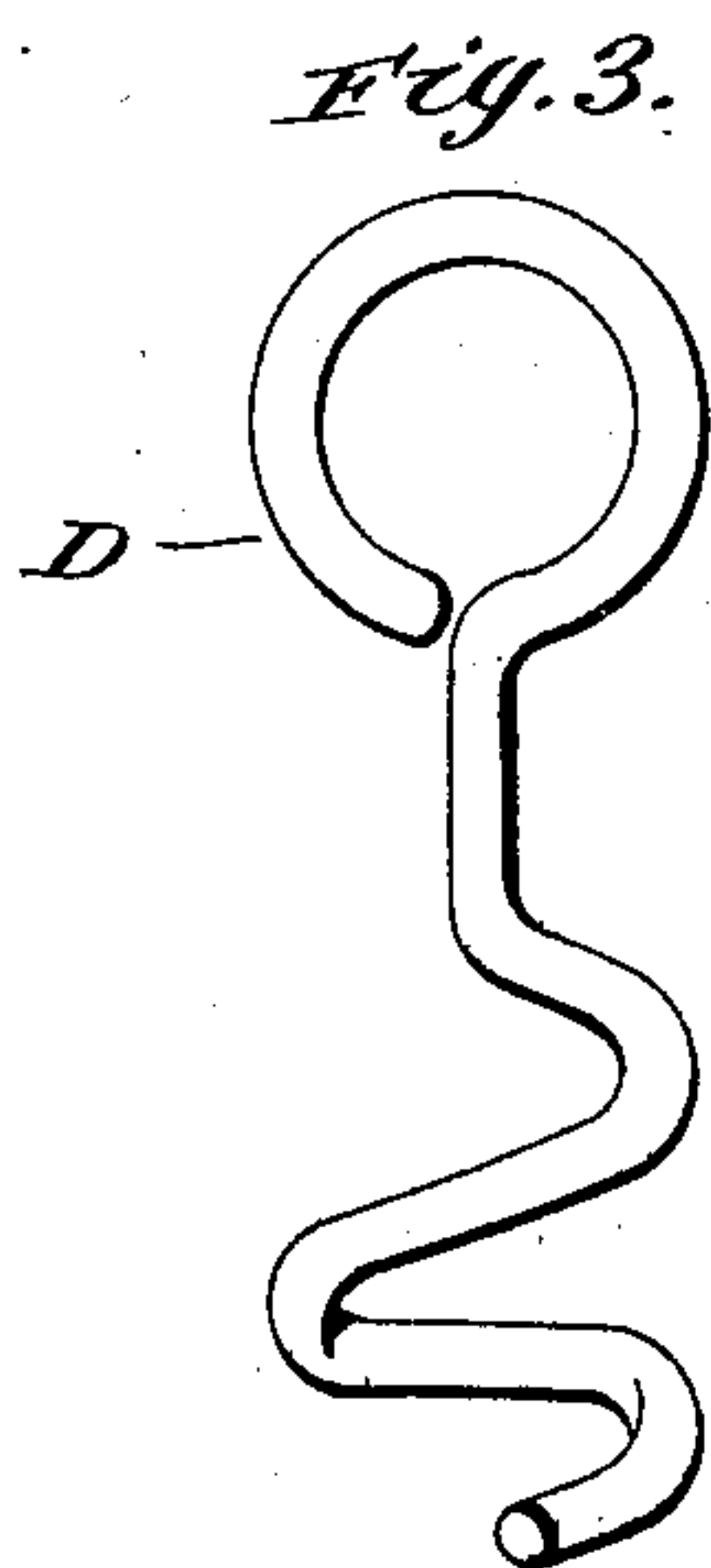
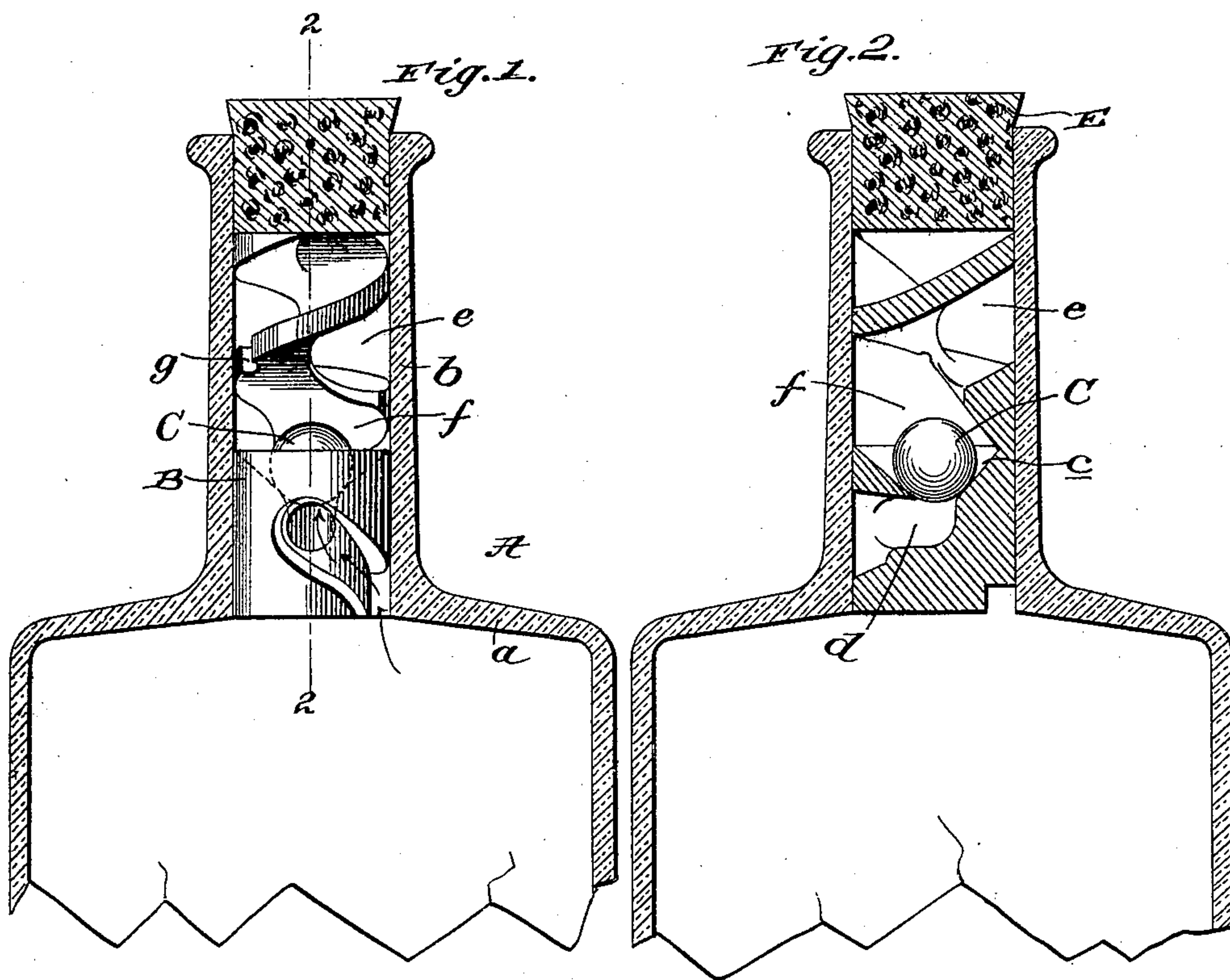
No. 680,405.

Patented Aug. 13, 1901.

W. H. AARON.
NON-REFILLABLE BOTTLE.

(Application filed May 13, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. AARON, OF STOCKTON, CALIFORNIA.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 680,405, dated August 13, 1901.

Application filed May 13, 1901. Serial No. 60,071. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. AARON, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to improvements in non-refillable bottles; and it consists in a certain peculiar construction, the novelty, utility, and advantages of which will be fully understood from the following description and claim when taken in connection with the annexed drawings, in which—

Figure 1 is a diametrical section of the upper portion of a bottle equipped with my improvements, the cylindrical core of the latter being shown in elevation. Fig. 2 is a similar view with the cylindrical core as well as the upper portion of the bottle in diametrical section. Fig. 3 is a detail view of the implement employed to force the rubber ball-valve embraced in my improvements to its seat.

Referring by letter to the said drawings, A is a bottle, comprising the usual body *a* and neck *b*, and B is the cylindrical core, which forms part of my improvements. The said core, which may be made of glass or any other material suitable to the purpose, is of a diameter to snugly fit in the neck *b* and is fixedly secured thereto by cement or any other suitable means. It is provided about the proportional distance illustrated above its lower end with a concave valve-seat *c* and is also provided with a passage *d*, which leads from said seat and communicates with the interior of the body of the bottle, and a spiral passage *e*, which starts at about the distance illustrated above the valve-seat and extends to the upper end of the core. The spiral passage *e* is designed for the introduction of a rubber ball-valve C to the seat *c* and is of a width less than the diameter of the ball, this in order to preclude the removal of the ball from the chamber *f* above the valve-seat. The passage *e* is also designed to permit of the free flow of liquid from the bottle, and in order to accelerate such flow when the bottle is inverted the core is provided in the edge of one of its spiral whirls with an air-vent *g*, as best shown in Fig. 1.

In the practice of my invention the core B is secured in the neck of the bottle in the position illustrated, and the bottle is then filled, after which the ball C is crowded, with the aid of the spiral implement D, down through the spiral passage *e* and into the chamber *f* above the valve-seat *c*. When the ball-valve is in the said chamber *f* and the bottle is inverted to pour its contents, the valve will fall away from its seat and permit of a free flow of liquid from the interior of the bottle through the passage *d*, chamber *f*, and passage *e*, and out of the mouth of the bottle. When, however, the bottle is held in an upright or approximately upright position with a view of refilling same, the ball-valve will return to its seat and securely close the passage *d*, and thereby effectually prevent liquid from entering the interior of the body of the bottle.

The core B is preferably of such length as to extend from the base of the neck of the bottle to a point adjacent to the upper end thereof, and ordinarily a stopper E is employed to close the upper end or mouth of the bottle and prevent evaporation of its contents.

It will be readily appreciated from the foregoing that when my improved core B and ball-valve C are placed and secured in the neck of an ordinary bottle after the manner described they are calculated to convert said bottle into a highly efficient and reliable non-refillable bottle. It will also be appreciated that the core and ball-valve are easy of production, and consequently cheap, and also that they are adapted to be quickly and easily placed and secured in the bottle-neck.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of the bottle, the core snugly arranged and secured in the neck thereof and having the concave valve-seat at an intermediate point of its length, the passage *d* leading downwardly from said seat and connecting the same with the interior of the body of the bottle, the chamber *f* above the valve-seat, the spiral passage *e* extending upwardly from said chamber *f*, and the air-vent *g* arranged in the edge of one of the whirls forming the spiral passage, and the rubber

ball-valve arranged in the chamber *f* of the
core; said valve being of a diameter greater
than the width of the spiral passage *e* whereby
it may be crowded through the passage to the
5 chamber *f* but cannot be drawn outwardly
through said passage.

In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-
nesses.

WILLIAM H. AARON.

Witnesses:

L. H. CUTTING,
FRANCIS CUTTING.