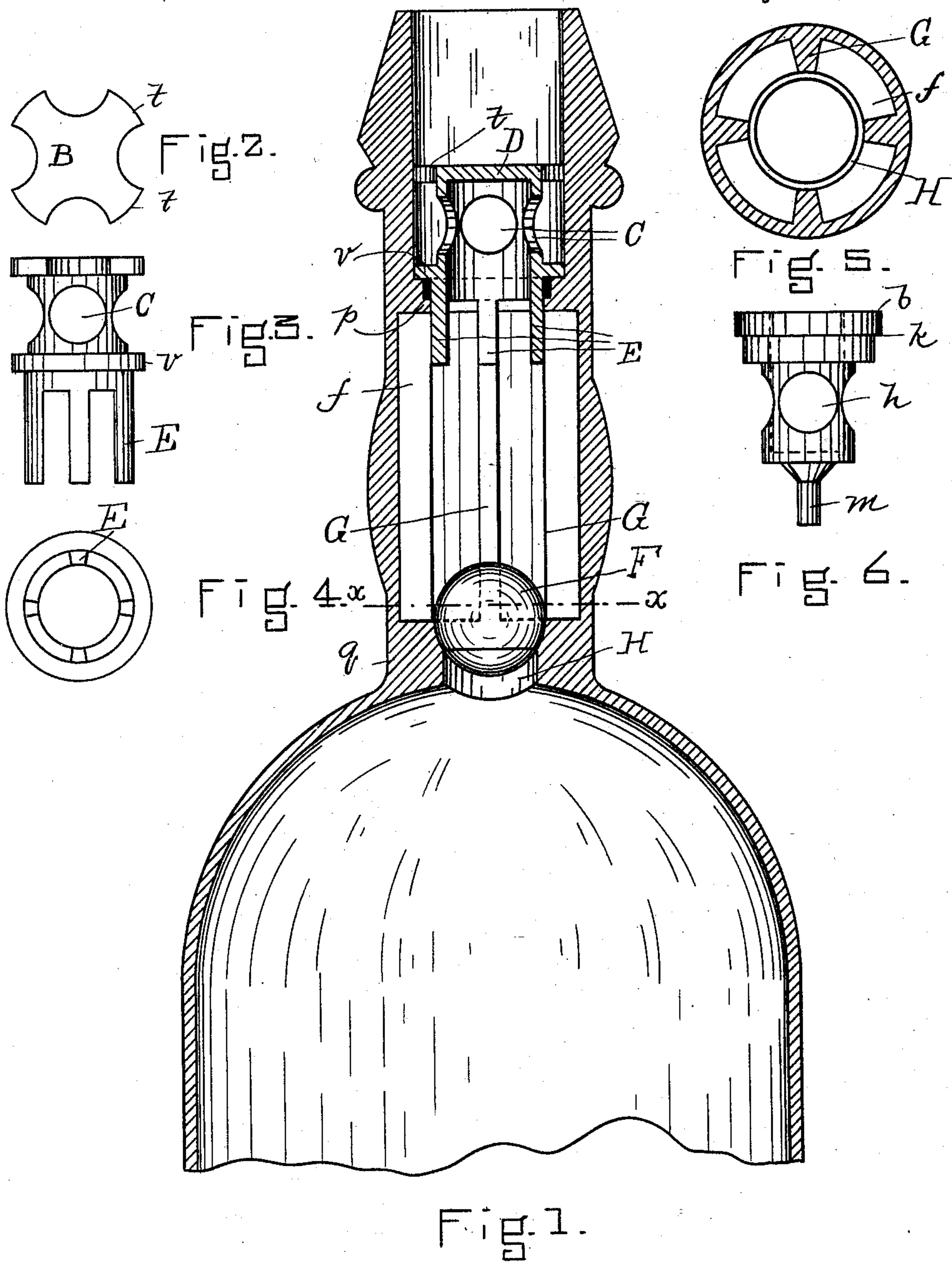


(No Model.)

T. W. RYAN.
SELF SEALING BOTTLE.

No. 603,795.

Patented May 10, 1898.



WITNESSES.

Matthew M. Blunt.
Chas. Wilbur.

INVENTOR.

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ATT'Y.

UNITED STATES PATENT OFFICE.

THOMAS W. RYAN, OF CONCORD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO JAMES H. WALSH, OF BOSTON, MASSACHUSETTS.

SELF-SEALING BOTTLE.

SPECIFICATION forming part of Letters Patent No. 603,795, dated May 10, 1898.

Application filed March 6, 1897. Serial No. 626,300. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. RYAN, of Concord, in the county of Middlesex, State of Massachusetts, have made certain new and
5 useful Improvements in Self-Sealing Bottles, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which
10 said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical transverse section through the neck of a bottle provided with
15 my improvement; Fig. 2, a top plan view of the seal; Fig. 3, a side elevation of the same; Fig. 4, a bottom plan view of the seal; Fig. 5, a section on line *xx* through the bottle-neck, and Fig. 6 an elevation showing a modification in the form of seal.
20

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of bottles
25 known as "non-refillable;" and it consists in certain novel features hereinafter set forth, the object being to produce a simple, cheap, and effective device of this character.

The nature and operation will be understood by those conversant with such matters
30 from the following explanation.

In the drawings, A represents the neck of a glass bottle which is provided interiorly of its neck and at a suitable distance from its
35 mouth with an annular rabbeted shoulder *p*. Where the neck joins the body of the bottle, there is formed interiorly a ground valve-seat H. Between this seat and the shoulder *p* there are formed four vertical ribs G, leaving
40 spaces *f* between them. The seal is formed of glass and is grooved or scalloped in its top, forming projections *t*, which tightly fit the neck of the bottle above the shoulder *p*. An annular flange *v* is formed on the seal to
45 engage and rest on the shoulder *p* in the neck. In the side walls of the seal, between said flange and the solid top of said seal, ports C are formed. Pendent below the flange on the
50 seal there is a series of legs E, which fit tightly

low it between opposite ribs G. A washer D is disposed in the rabbet of the shoulder, and the seal is thus held firmly in the bottle-neck. A glass ball-valve F, preferably ground, runs
55 on the ribs and engages the seat H. This valve normally closes the neck when the bottle is in vertical position, it being understood that the bottle is filled before the valve and seal are adjusted in the neck. There is sufficient
60 space above the seal for the insertion of the ordinary stopple. When the bottle is tilted, the valve will roll on the ribs until it engages the legs E of the seal, which serve as
65 stops to prevent it engaging the shoulder *p*. The liquid contents flow between the ribs and legs, through the ports of the seal, and out from the mouth of the bottle. As soon as the
70 bottle is upright again the valve will reseal and prevent any liquid from flowing into the body.

The seal is of such shape and arrangement that it cannot be withdrawn by means of a
75 corkscrew without breaking or injuring it, so that it can be readily seen that it has been tampered with.

In Fig. 6 an alternate form of seal is shown provided with a rabbet *k* for engaging the rabbet
80 of the shoulder *p* and having a central mouth *b*, into which ports *h* open, said seal being provided with a single leg *m* for stopping the valve.

The seal and valve may be of any suitable material; but I preferably employ glass, as it will not corrode in the liquor.

Having thus explained my invention, what
85 I claim is—

The bottle herein described provided with the seat, H, in its neck, the vertical ribs, G, above said seat, and the shoulder, *p*, above
90 said ribs in combination with the ball, F, engaging said seat and guided by said ribs; the hollow seal provided with the solid scalloped head, ports, C, a leg, E, and flange, *v*, for engaging said shoulder all being arranged to operate substantially as specified.

THOS. W. RYAN.

Witnesses:

O. M. SHAW,
C. M. WILBUR.