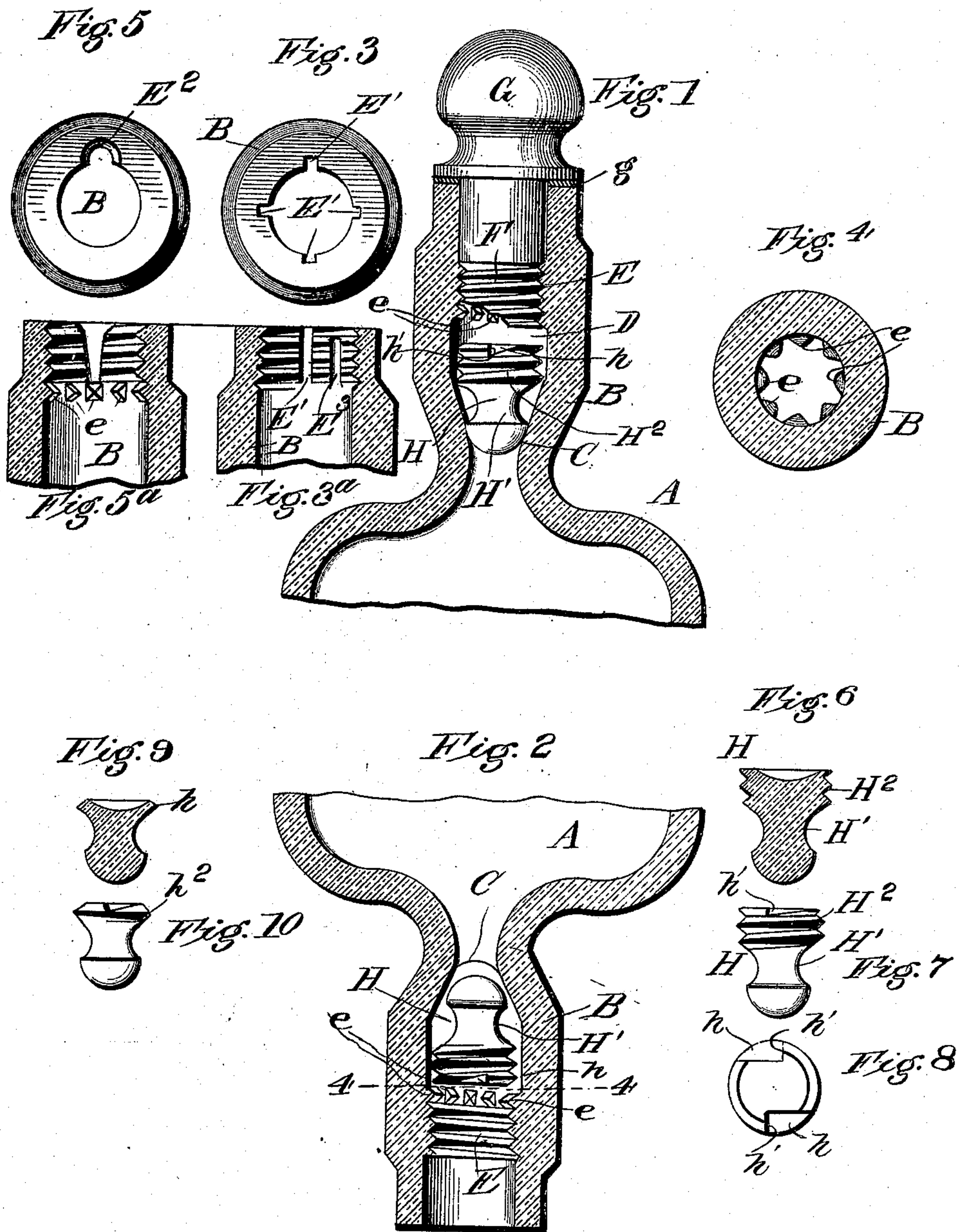


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J. B. OGLE & W. E. BARRIE.
NON-REFILLABLE BOTTLE.
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UNITED STATES PATENT OFFICE.

JOHN BOYCE OGLE, OF LANCASTER, AND WILLIAM EDMOND BARRIE, OF CARROLL, NEW HAMPSHIRE.

NON-REFILLABLE BOTTLE.

No. 885,640.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN B. OGLE and WILLIAM E. BARRIE, citizens of the United States, and residents of Lancaster and Carroll, respectively, in the county of Coos and State of New Hampshire, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

Our invention is an improvement in non-refillable bottles, and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawing Figure 1 is a vertical longitudinal section of the neck of a bottle provided with our improvements with the valve in place and the stopper inserted to close the neck of the bottle. Fig. 2 is a vertical longitudinal section of the neck of a bottle with the stopper removed and the neck inverted as in pouring liquid from the bottle. Fig. 3 is an end view of the bottle neck. Fig. 3^a is a detail sectional view of a portion of a bottle neck, the toothed construction at the inner ends of the threads being omitted. Fig. 4 is a cross-section on about line 4—4 of Fig. 2. Fig. 5 is an end view of the neck and Fig. 5^a a longitudinal section thereof showing a somewhat different construction from that presented in Figs. 1 and 2. Fig. 6 is a longitudinal section. Fig. 7 a side view, and Fig. 8 an end elevation of the valve, and Fig. 9 is a longitudinal section, and Fig. 10 a side elevation of a valve having but a single thread.

By our invention we provide a bottle whose neck has an internal valve seat and a screw threaded passage leading to a valve chamber, the valve having its body portion screw-threaded whereby it may be turned through the screwthreaded portion in the neck of a bottle into the valve seat to position for use.

The bottle A may be of any suitable form, and has its neck B provided with a valve seat C and above the same with a valve chamber D, the upper end of the neck having a screw-threaded opening or passage E leading to the valve chamber and adapted to receive the threaded stem F of the stopper G. This stopper may be used to close the outer end of the neck of the bottle whenever desired.

The valve seat C is located at the lower end of the valve chamber D so the valve H will gravitate to its seat as shown in Fig. 1 and yet may drop away from its seat when the

bottle is tilted to discharge its contents, at which time the liquid contents of the bottle may discharge through the outer end of the neck, the threads of the latter being notched to permit the contents of the bottle to flow out when the bottle is tilted.

In providing a vent or passage for the water, we may form grooves across the threads E and these grooves may be narrow and of uniform width as shown at E' in Figs. 3 and 3^a or they may flare upward through the outer ends, as shown at E² in Figs. 5 and 5^a and where desired these grooves may extend to or terminate short of the upper or outer thread as shown at E in Fig. 3^a. By preference the lower or inner thread may consist of a series of short lugs or projections *e* as shown in Figs. 1 and 2 which together constitute a thread and also spaced apart to permit the passage between them of the liquid in dispensing the same.

The valve H is fitted to the seat C and has a short shank H' connecting it to its body portion H², the latter being screwthreaded to fit the screwthreads E of the bottle neck as will be understood from Figs. 1 and 2 of the drawing.

The body portion H² is screwthreaded to fit the threads of the neck of the bottle. In inserting the valve to its position for use, these threads screw through the threads in the neck of the bottle and when once inserted the valve cannot be removed so that the bottle cannot be refilled without breaking the neck and thus indicating the mutilation of the bottle.

For convenience in turning the valve through the threads E we provide it in its outer end with one or more seats *h* which are provided at *h'* with shoulders facing in the proper directions to form a surface against which the finger may press in turning the valve through the threads E into the valve chamber D, but manifestly these bearings will not aid in turning the valve in a reverse direction. The valve may have a number of threads H² as shown in Figs. 6 and 7 or a single thread as shown at *h*² may be provided on the valve as illustrated in Figs. 9 and 10. The valve may be of glass, tin, aluminum, fiber or other like material which can be readily worked to a water tight joint and in practice we propose making the valve chamber D only enough larger than the valve H to permit such valve to drop away from the seat

C to a sufficient extent to permit the free passage of the liquid when the bottle is inverted as shown in Fig. 2.

The neck of the bottle may be of any suitable size with the stopper G to correspond and the stopper may be used with or without a gasket *g* as will be understood from Fig. 1. The top end of the valve H may be flat as shown in Figs. 1 and 2 or it may be slightly concave if desired as shown in Figs. 6 and 9, shoulders *h'* being provided to aid in turning the valve in one direction only as before described. The screwthreads in the neck may be right or left hand, and of any size or shape desired. In Fig. 2 we show right hand threads while in Figs. 3^a and 5^a left hand threads are shown.

In inserting the valve it may be screwed through the threaded opening leading to the chamber, the pressure of the finger against the outer end of the valve body being sufficient to hold it so the bottle can be screwed along the threaded body as will be understood from Fig. 2 of the drawing, the threads fitting loosely so the threaded body will turn readily within the neck.

The threaded opening leading to the valve chamber not only permits the insertion of the valve at the same time preventing its withdrawal, but also forms a seat in which the stopper G may be screwed as shown in Fig. 1.

The valve H is rounded and the valve seat C is concaved to fit the valve so that the latter will rest tightly on its seat if slightly tilted to one side or the other when fitting within the neck.

We claim:—

The bottle substantially as herein described having its neck provided with a valve chamber with a contracted rounded seat at the lower end thereof, an enlarged portion above said seat, and with a threaded opening communicating with the upper end of the enlarged portion and having a circumferential series of short lugs or projections at the upper end of said enlarged portion of the valve chamber for the escape of liquid, a stopper having a threaded portion to screw in said threaded opening, and a flanged head to overlap the neck of the bottle, and a valve fitted to the chamber and having a lower rounded portion to fit the valve seat, a short shank projecting upwardly therefrom, and a body portion above the shank and screw threaded to fit the threaded opening leading to the valve chamber, all substantially as and for the purposes set forth.

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