

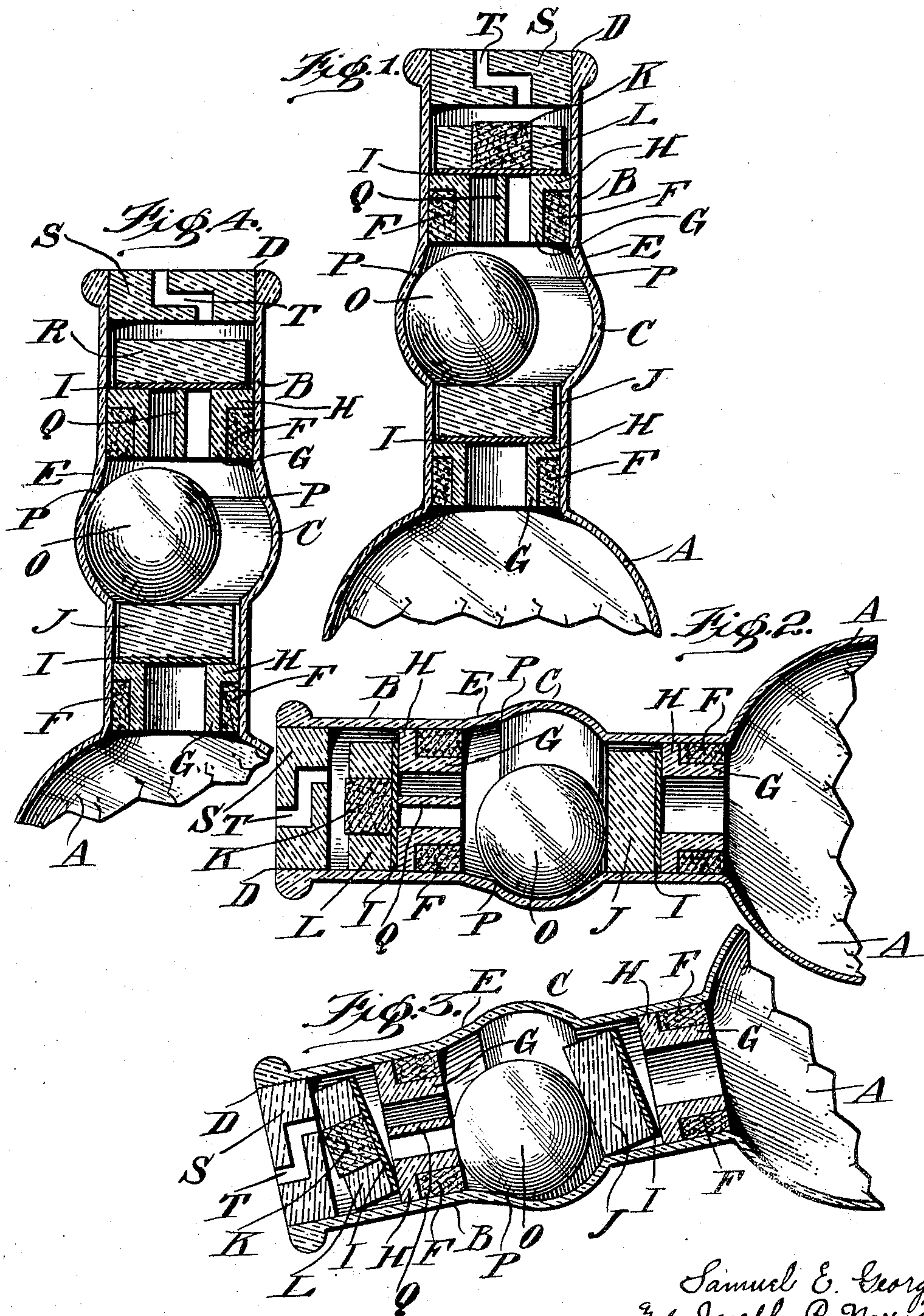
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S. E. GEORGE & J. R. NORRIS.
NON-REFILLABLE BOTTLE.

APPLICATION FILED DEC. 19, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL E. GEORGE AND JOSEPH R. NORRIS, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 770,802, dated September 27, 1904.

Application filed December 19, 1903. Serial No. 185,840. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL E. GEORGE and JOSEPH R. NORRIS, citizens of the United States, and residents of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification accompanied by drawings.

10 This invention relates to non-refillable bottles; and its objects are to improve upon such bottles and increase the efficiency and certainty of operation with simplicity of parts.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of a bottle embodying the features of construction, combinations of elements, and arrangement of parts having the general mode of operation substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the neck and a portion of the body of a bottle embodying the invention. Fig. 2 is a sectional view showing the bottle in a horizontal position. Fig. 3 is a sectional view showing the bottle in a downwardly-inclined position, and Fig. 4 is a sectional view of a modification.

30 Referring to the drawings, A represents the body of the bottle, shown broken away, and B is the neck, provided with an outwardly curving or bulging portion C between the mouth D of the bottle and the body portion

35 A. An inclined or slanting portion E of the neck connects the bulging portion C with the upper end of the neck for a purpose hereinafter to appear. Within the neck are arranged the stoppers F, preferably of cork, 40 provided with the glass sleeves G, having outwardly-turned flanges H, extending over the upper portions of the corks F. The hollow corks or stoppers are each provided with thin flat disk valves I, preferably of isinglass or 45 like material. The lower valve I is seated a given distance below the beginning of the bulging portion C of the neck, and on top of the said lower valve I is arranged a solid disk J, preferably of glass or similar material.

Between the glass disk J and the valve I of 50 isinglass there is a strong adhesion, so that when the bottle is turned into a downwardly-inclined position, as shown in Fig. 3, the disk J, which may be termed a "lifter," tends to pull or suck the valve I away from its seat 55 and keep the valve open and permit the material in the bottle to pour out. In Figs. 1, 2, and 3 the upper valve I is shown provided with a piece of cork K, secured thereto, encircled by an annular disk L, preferably of 60 glass or like material. The annular disk L is separate from the valve I and tends to lift or suck the valve away from its seat, as shown in Fig. 3. The cork K tends to float the valve upward to close it. 65

Arranged between the stoppers and over the lifter or disk J is shown the ball O, preferably of glass, of such diameter that it fits snugly into the curve of the bulging portion C of the bottle. When the bottle is in the position 70 shown in Fig. 3, the ball O rolls slightly upward on the inclined portion E of the neck, leaving the bulging portion C and permitting the inner valve I to open. At the same time the outer valve I opens, as shown. When the bottle is turned in a horizontal position, as shown in Fig. 2, the ball O immediately drops back into the bulging portion C, where it fits snugly, at the same time bearing against the disk or lifter J, thus tightly closing the inner valve I. 80 It will be seen that the ball O is held or wedged between the lifter J and the shoulder P on the side of the bottle, said shoulder P being formed at the meeting line between the bulging portion C of the bottle and the slanting portion E. By this construction the inner valve I is always sure to be closed, irrespective of the position of the outer stopper F, because the ball does not depend for its locking operation upon the stopper F. The 90 locking action of the ball O is due entirely to the conformation of the bottle and the position of the lifter J.

Preferably a rib Q is provided on the glass sleeve G for the outer stopper F to prevent 95 the ball O from filling up the aperture in the stopper and preventing the outflow of material. In Fig. 4 instead of the cork K and

annular ring L a disk R, of glass or other suitable material, is provided on top of the outer valve I to act as a lifter, this outer disk being separate from the valve. This has been found
5 to be an efficient construction. Any suitable interference device S may be provided in the end of the bottle, having a tortuous passage T therethrough to prevent the insertion of
10 wires to interfere with the operations of the valves.

Obviously some features of this invention may be used without others, and the invention may be embodied in widely-varying forms.

Therefore without limiting the invention to
15 the construction shown and described nor enumerating equivalents, we claim, and desire to secure by Letters Patent, the following:

1. A bottle, having a neck provided with an outwardly curving or bulging portion and an
20 inclined portion meeting the same, thereby forming a shoulder at the juncture of said portions, a stopper with a hole in it arranged below the bulging portion of the bottle, a disk valve for said stopper, a lifter of suitable ma-
25 terial between the valve and the bulging portion of the bottle, and a ball adapted to seat itself in the curve of said bulging portion and form a lock between the said shoulder on

the neck of the bottle and the lifter for the valve, for substantially the purposes set forth. 30

2. A bottle, having a neck provided with an outwardly curving or bulging portion, a perforated stopper, a disk valve, a lifter there-
for, and a ball adapted to seat itself in said bulging portion of the bottle and hold the
35 valve closed when the bottle is in a horizontal or upwardly-inclined position, for substantially the purposes set forth.

3. A bottle, provided with an outwardly curving or bulging portion in the neck, and
40 a slanting portion extending therefrom, perforated stoppers in the neck above and below the bulging portion, valves for said stoppers, a lifter for the inner valve, and a ball adapted
45 to seat itself in the bulging portion of the neck and bear against the lifter of the lower valve, to hold it closed, for substantially the purposes set forth.

In testimony whereof we have signed this specification in the presence of two subscrib-
50 ing witnesses.

SAMUEL E. GEORGE.
JOSEPH R. NORRIS.

Witnesses:

E. VAN ZANDT,
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