

No. 756,773.

PATENTED APR. 5, 1904.

W. C. BEAL.
NON-REFILLABLE BOTTLE.
APPLICATION FILED AUG. 25, 1903.

NO MODEL.

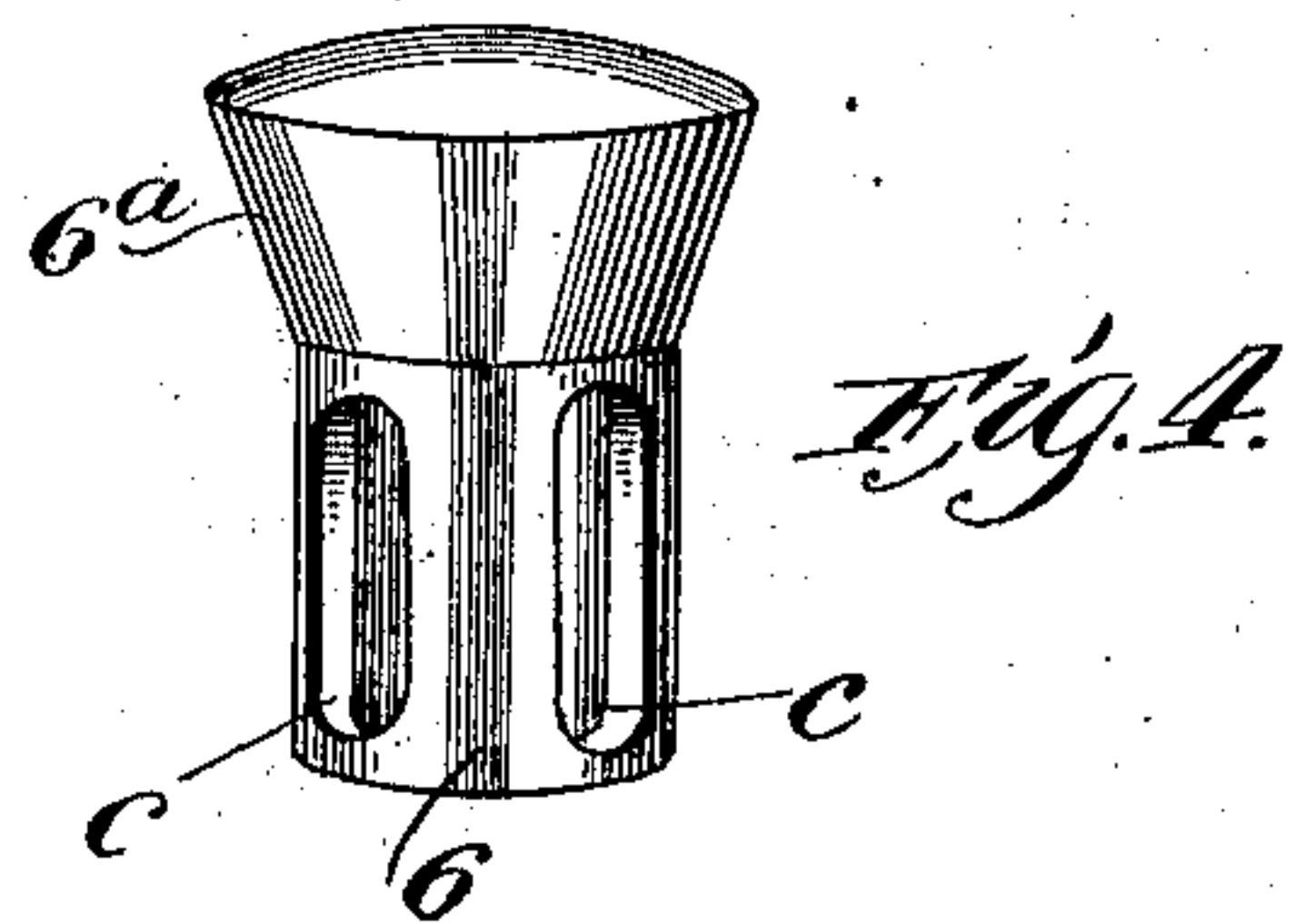
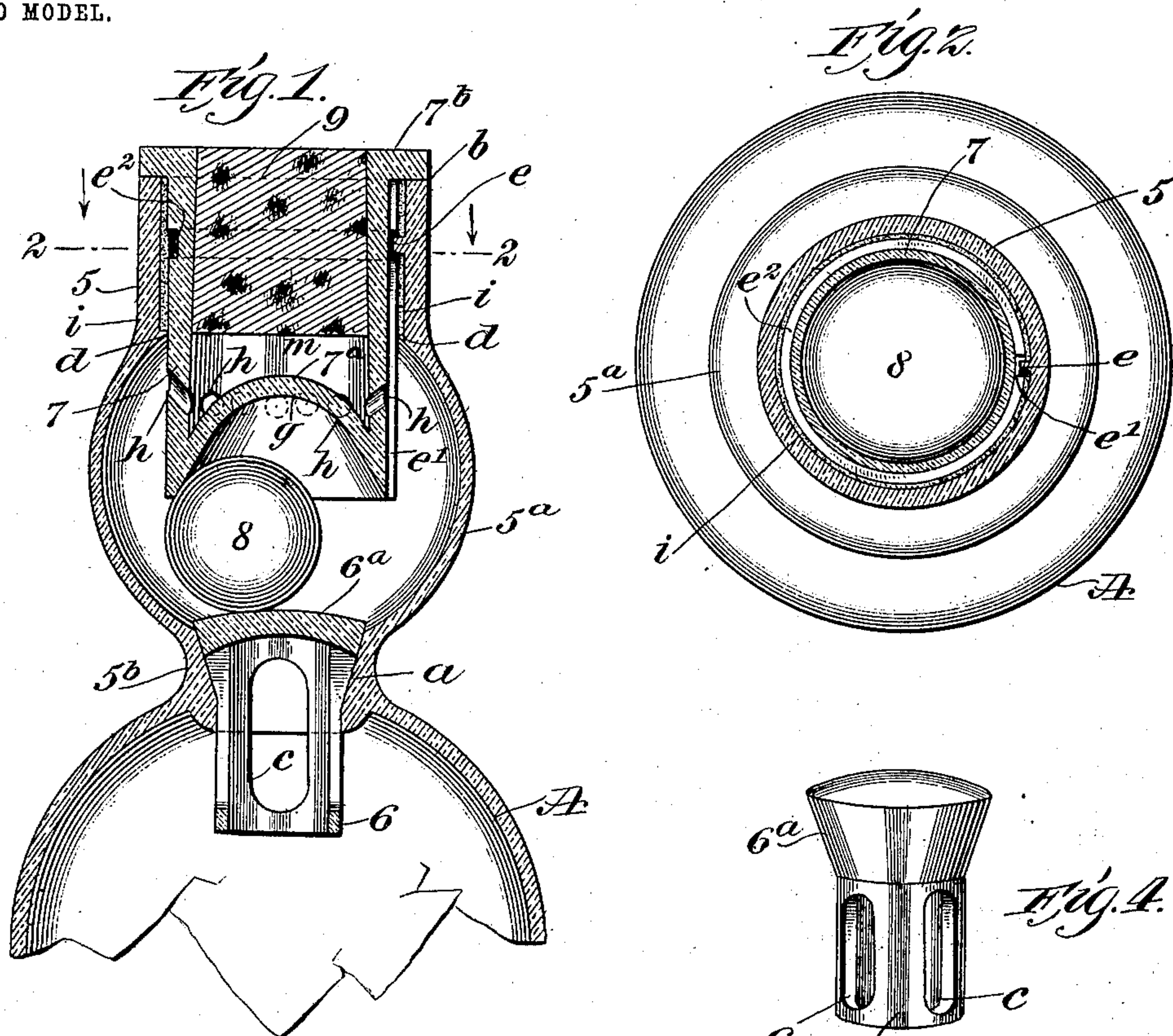
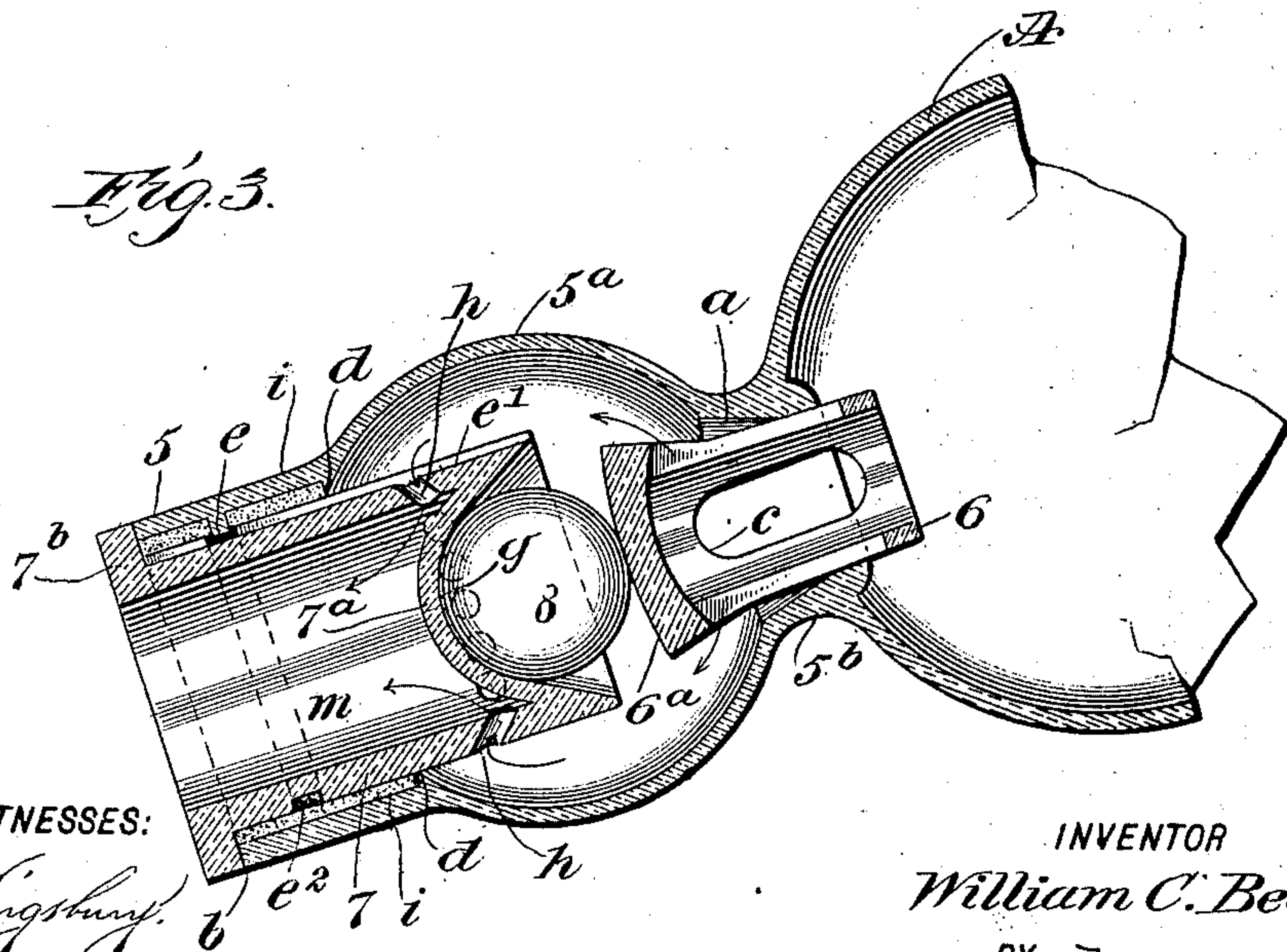


Fig. 3.



WITNESSES:

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WILLIAM CONSTANTINE BEAL, OF FERNANDINA, FLORIDA, ASSIGNOR OF ONE-HALF TO JOHN J. RUTISHAUSER AND LOUIS G. HIRTH, OF FERNANDINA, FLORIDA.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 756,773, dated April 5, 1904.

Application filed August 25, 1903. Serial No. 170,708. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CONSTANTINE BEAL, a citizen of the United States, and a resident of Fernandina, in the county of Nassau and State of Florida, have invented a new and Improved Non-Refillable Bottle, of which the following is a full, clear, and exact description.

This invention relates to a class of liquid-packages that are provided with means to expose or prevent the reuse of the receptacle after the contents have been removed, and has for its object to provide novel details of construction for a bottle and its closure which will effectively prevent the refilling of the bottle after the contents have been partially or wholly decanted.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side view of the upper portion of a bottle and of the improved closure therefor. Fig. 2 is a transverse sectional view substantially on the line 2 2 in Fig. 1. Fig. 3 is a similar view of parts to those shown in Fig. 1, representing their relative positions when the bottle is inclined for removal of liquid therefrom; and Fig. 4 is a side view of a plug-valve employed.

The bottle-body A may be cylindrical or any other available form having the upper portion converged to reduce the diameter and permit the formation of a coniform valve-seat *a* in the contracted lower portion 5^b of the bottle-neck. Immediately above the valve-seat *a* the bottle-neck is enlarged and given the spherical form 5^a, merging above said spherical portion in a cylindrical wall 5, that terminates in a true flat upper edge *b*.

A plug-valve having a cylindrical hollow body portion 6, that is integral with a coniform head 6^a, is loosely fitted into the opening defined by the coniform valve-seat *a*, and the valve-head 6^a, that may rest upon said seat,

closes the passage from the bottle-body when the latter is upright or lying horizontally. 50 As shown, the wall of the valve-body 6 is apertured, preferably at different points, said apertures *c* being elongated to afford free passages for liquid therethrough. In the cylindrical upper portion 5 of the bottle-neck at its junction with the upper edge of the integral spherical wall 5^a an annular flange *d* is formed thereon, and at a suitable point above said flange a short lug *e* projects from the inner surface of the cylindrical wall 5. 60

A guard-cup is furnished to mainly close the open upper portion of the bottle-neck, and, as shown in Figs. 1 and 3, said cup comprises a cylindrical side wall 7, having an integral upwardly-dished bottom wall 7^a and a radial flange 7^b at the open upper end that seats closely upon the true upper edge *b* on the bottle-neck. The side wall 7 of the guard-cup is of such external diameter that it will slide down into the neck and have a loose contact with the free inner edge of the annular flange *d*, there being a longitudinal groove *e'* formed in the exterior surface of the side wall 7 for the free passage of the lug *e*, said groove intersecting at its upper end a circumferential groove *e''*, wherein the lug may be locked by a turning movement of the guard-cup when the flange 7^b is seated on the bottle-neck. The dished formation of the bottom wall 7^a affords a deep concavity *g* in the lower surface thereof, and near the crown of said wall or where the side wall 7 integrally joins the bottom 7^a a series of suitably-diametered orifices *h* is formed in said side wall at proper distances apart, these orifices trending diagonally inward and downward. 85

A preferably spherical solid ball 8 is introduced within the portion 5^a of the bottle-neck and seats upon the upper surface of the plug-valve head 6^a when the bottle is in an upright position or when lying horizontally, thus enforcing the closure of the valve upon its seat *a*. The relative proportion of parts is such that the ball 8 will have contact with the bottom wall 7^a at and near its lower edge, which will permit the ball to freely roll upon the top 90

surface of the valve 6, but be held from lateral displacement when the bottle is turned to tip or invert it.

The guard-cup is held immovable in the cylindrical portion 7 of the bottle-neck by means of a suitable cement z , that is in plastic condition coated upon the inner surface of said cylindrical wall above the annular flange d , this application of the cement being effected before the guard-cup is introduced within the bottle-neck. The cement, such as a plastic mixture of plaster-of-paris or a like material that will harden, serves to hold the guard-cup fixed in place when the lug e is caused to slide upward in the groove e' by the insertion of the guard-cup and then enter the circumferential groove e'' after the guard-cup flange 7^b contacts with the top of the bottle-neck, the hardening of the cement after the guard-cup is in position serving to prevent a turning movement of the same, which is necessary for release of the lug from the groove.

It is to be understood that the bottle is filled with the liquid it is to hold as an original package before the improved closing device is introduced within its neck, and the contents may be held therein for transportation or preservation from contact with the air by the insertion of a cork 9 into the cylindrical cavity m of the guard-cup, as indicated in Fig. 1.

When a part or the entire contents of the bottle is to be decanted, the cork 9 is removed, which will open passages through the orifices h for the free flow of liquid from the bottle when it is inclined or tilted sidewise, as indicated in Fig. 3, as in such a position the plug-valve 6 and ball 8 will move toward the concavity in the bottom wall of the guard-cup, this movement being enforced by the weight and pressure of the liquid that will pass through the openings c into the spherical chamber 7^a and thence through the orifices h to escape from the cavity m of the guard-cup in an obvious manner.

It will be seen that owing to the diagonal inclination of the orifices h in the side wall of the guard-cup it will be impossible to insert a wire or other instrument therethrough in the direction of the valve 6 to hold the latter open, so that the refilling of the bottle is impossible when the bottle is upright or lying

on its side, and the valve and ball are free to operate as hereinbefore explained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A closure for bottles, comprising a hollow laterally-apertured valve seating on an opening in the bottle-neck, a hollow guard-cup having a dished bottom, a cylindrical side wall, and orifices in said wall near the bottom for the passage of liquid from the bottle through the orifices into and then through the guard-cup, a ball engaging the top of the valve and adapted to enter the dished bottom of the guard-cup when the bottle is inverted, and means for securing the guard-cup in the neck of the bottle.

2. A bottle and its closure, comprising the following construction, a bottle-body having a converged neck, an opening in the neck formed with a downwardly-converged seat, a plug-valve having a coniform head that may engage the valve-seat, and a hollow cylindrical body that is longitudinally apertured, the bottle-neck having a cylindrical upper portion and a spherical portion intervening the cylindrical top and the converged neck, an inwardly-extended annular flange formed in the cylindrical top of the bottle-neck near the spherical chamber, a lug formed on the inner surface of the cylindrical wall above the annular flange, a guard-cup having a cylindrical side wall, a radial top flange thereon and an inwardly-dished bottom wall, a plurality of orifices formed in the side wall of the cup and inclined inward and downward near the bottom wall, a ball in the spherical chamber, seating on the valve, a longitudinal groove in the side wall of the guard-cup, an intersecting circumferential groove at the top of the longitudinal groove, said grooves receiving the lug, and a cement filling between the guard-cup and the cylindrical wall of the bottle-neck.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM CONSTANTINE BEAL.

Witnesses:

L. BEUGNET,
THOMAS A. HALL.