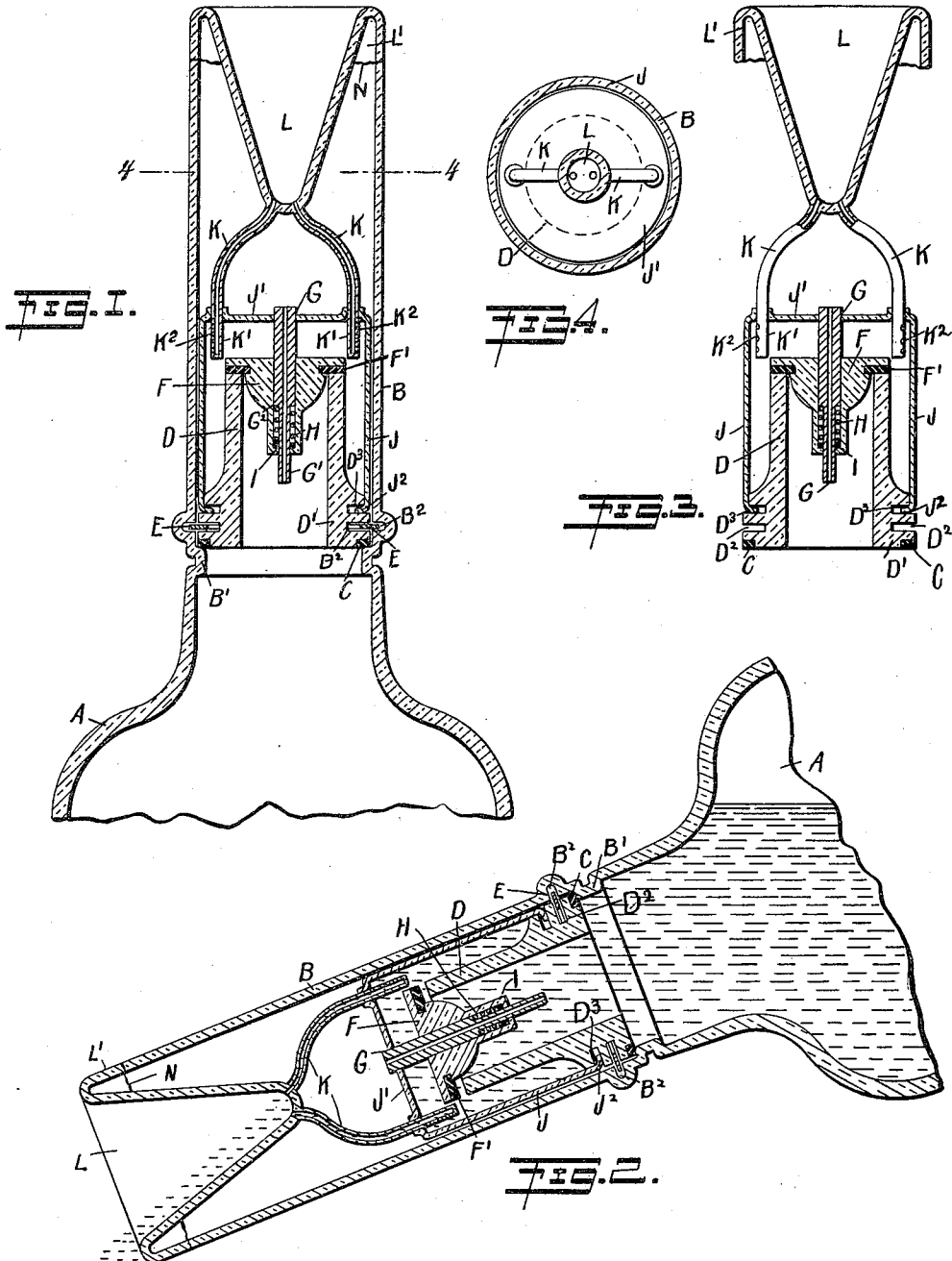


J. S. BROMHEAD.
NON-REFILLABLE BOTTLE.
APPLICATION FILED OCT. 7, 1912.

1,060,532.

Patented Apr. 29, 1913.



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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

1,060,532.

Specification of Letters Patent.

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Application filed October 7, 1912. Serial No. 724,347.

To all whom it may concern:

Be it known that I, JOHN S. BROMHEAD, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Non-Refillable Bottle, of which the following is a full, clear, and exact description.

10 The invention relates to non-refillable bottles such as shown and described in the Letters Patent of the United States, No. 1,018,960, granted to me on February 27, 1912.

15 The object of the present invention is to provide a new and improved non-refillable bottle which is simple in construction, cheap to manufacture, and arranged to permit pouring of the contents of the bottle on tilting the same and to prevent refilling with spurious goods by unauthorized persons. In order to accomplish the desired result, use is made of a closure locked within the neck of the bottle and having a self-closing 20 valve, a vent and a pouring spout, the latter having a cracked joint connection with the neck of the bottle.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the non-refillable bottle in upright position; 30 Fig. 2 is a similar view of the same in tilted position; Fig. 3 is a sectional side elevation of the closure detached, parts of the discharge pipes being in elevation; and Fig. 4 is a sectional plan view of the same on the line 4-4 of Fig. 1.

40 The bottle A is provided with a neck B having in its lower portion an interior annular shoulder B' and an annular groove B² a short distance above the shoulder B'. A rubber gasket C is adapted to be seated on the shoulder B' and the said rubber gasket is held on the bottom of the base D' of a valve seat D. The base D' is provided with an exterior annular groove D² into which 45 extends a spring locking ring E also extending into an annular groove B² so as to securely lock the valve seat D in position in the neck B of the bottle A.

50 On the upper end of the valve seat D is adapted to be seated a gasket F', of rubber or other material, held on and forming part

of a valve F for normally closing the valve seat D. The valve F is mounted to slide centrally on a vent pipe G having a lower reduced portion G' on which is coiled a 60 spring H resting with its lower end on a gasket or rubber ring I held in the bottom portion of the valve F, the upper end of the spring H bearing against a shoulder G² of the vent pipe G to press the valve F 65 downward with a view to firmly hold the gasket F' of the valve in contact with the seat D to close the latter. The lower reduced end G' of the vent pipe G extends into the valve seat D so as to supply air to the 70 bottle A when the latter is tilted with a view to insure a proper outflow of the contents of the bottle, as hereinafter more fully explained. The upper end of the vent pipe G is secured to the top J' of a shell J fitting 75 into the neck B of the bottle. The lower end of the shell J is provided with an inwardly-turned flange J² engaging an annular groove D² formed exteriorly in the base D' of the valve seat D a short distance above 80 the annular groove B², as plainly indicated in the drawings. By the arrangement described the shell J forms a part of the valve seat D and as the latter is held stationary in the neck B of the bottle A, it is evident 85 that the shell J is also held fixed in the neck and with it the vent pipe G secured to the top J' of the said shell J.

To the top J', of the shell J are secured outlet pipes K having their lower ends K' 90 extending a short distance into the upper end of the shell J, and the said lower ends K' are provided at their outer sides with openings K² to permit liquid to flow from the shell through the said openings K² into 95 the outlet pipes K. The bottoms of the lower ends K' are closed and the upper ends of the outlet pipes K are attached to the apex end of a conical pouring spout L having an outwardly and downwardly extending 100 annular flange L' terminating in a rugged edge fitting onto the correspondingly shaped rugged upper edge of the neck B, thus forming a cracked joint N between the neck B and the flange L' of the pouring 105 spout L. The cracked joint N permits air to pass into the neck B of the bottle A and from the latter by way of the vent pipe G into the valve seat D to supply the bottle with air at the time the bottle is tilted for 110 pouring the contents of the bottle into a glass or other receptacle. It is understood

that when the bottle is tilted, as shown in Fig. 2, the liquid pressing against the under side of the valve F causes the latter to slide outward on the vent pipe G against the tension of the spring H so that the liquid can flow through the open valve seat D into the upper end of the shell J to finally pass through the openings K² into the discharge pipes K from which the liquid passes into the spout L and out of the same into a glass or other receptacle. When the bottle is turned back to vertical position the valve F immediately moves into closed position on the valve seat D partly by its own weight and partly by the action of the spring H.

The bottle A, neck B, valve seat D, valve F, shell J, outlet pipes K and spout L are preferably made of glass or similar material.

In making the non-refillable bottle, the bottle A with the neck B and the pouring spout L is formed in one integral piece with the pouring spout L bent inward into the neck B, as indicated in Fig. 1. The operator then cracks the neck B near the upper end so as to separate the neck B from the pouring spout L, which latter can then be removed from the neck with its depending flange L'. The outlet pipes K are now attached to the apex end of the conical spout L and then the top J' of the shell J is attached to the outlet pipes K as shown and described. The valve F is mounted on the vent pipe G and the upper end of the latter is secured centrally to the top J' and then the valve seat D is placed in position in the shell J and the lower end is bent inward to form the flange J², the flange engaging the annular groove D³ so that the several parts are connected with each other, as plainly indicated in Fig. 3. The closure thus formed is provided with the spring locking ring E and pushed down in the neck B until the spring E engages the annular groove B² and the rugged edge of the flange L' seats itself on the rugged upper edge of the neck B. It will be noticed that when the closure is pushed into the neck B and the ring E expands in the groove B² then the closure is firmly fastened in the neck B and cannot be removed therefrom when breaking the neck. It is understood that in placing the closure into the neck B care is taken that the corresponding portions of the rugged edges of the flanges L' and the neck B engage each other to form a comparatively good joint which, however, allows sufficient air to pass into the neck B for venting purposes, as previously explained.

It will be noticed that by the arrangement described refilling of the bottle with spurious goods by unauthorized persons is prevented as the liquid poured into the spout L and passing down the pipes K can only

fill the shell J but cannot pass into the bottle itself, owing to the valve F closing the valve seat D. It will also be noticed that by having the opening K² outward a wire or similar device introduced into the pipes K cannot reach the valve F to hold the same forcibly open at the time the bottom is in upright position.

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

1. A non-refillable bottle having a neck, a shell fitting into the lower portion of the said neck and having a closed upper end, a valve seat within the said shell and having a base attached to the lower end of the shell and to the bottle neck, a valve adapted to be seated on the said seat, outlet pipes extending through the closed upper end of the said shell, and a pouring spout to which the upper ends of the said outlet pipes are attached, the said pouring spout extending into the bottle neck and joining the upper end of the same.
2. A non-refillable bottle having a neck, a shell fitting into the lower portion of the said neck and having a closed upper end, a valve seat within the said shell and having a base attached to the lower end of the shell and to the bottle neck, a valve adapted to be seated on the said seat, outlet pipes extending through the closed upper end of the said shell, and a pouring spout to which the upper ends of the said outlet pipes are attached, the said pouring spout extending into the bottle neck having an exterior flange forming a cracked joint with the upper end of the bottle neck.
3. A non-refillable bottle having a neck, a shell fitting into the lower portion of the said neck and having a closed upper end, a valve seat within the said shell and having a base attached to the lower end of the shell and to the bottle neck, a valve adapted to be seated on the said seat, outlet pipes extending through the closed upper end of the said shell, and a pouring spout to which the upper ends of the said outlet pipes are attached, the said pouring spout extending into the bottle neck and having an exterior and downwardly projecting flange joining the upper end of the bottle neck.
4. A non-refillable bottle having a neck, a shell fitting into the lower portion of the said neck and having a closed upper end, a valve seat within the said shell, a valve adapted to be seated on the said seat, outlet pipes extending through the closed upper end of the said shell, a pouring spout to which the upper ends of the said outlet pipes are attached, the said pouring spout joining the upper end of the bottle neck, a vent pipe secured to the said shell top and extending into the said valve seat, the said valve being mounted to slide on the said

vent pipe, and a spring interposed between the said vent pipe and the said valve to normally hold the latter to its seat.

5 5. A non-refillable bottle having a neck, a shell fitting into the lower portion of the said neck and having a closed upper end, a valve seat within the said shell and having a base attached to the lower end of the shell and to the bottle neck, a valve adapted to be
10 seated on the said seat, outlet pipes extending through the closed upper end of the said shell, the said outlet pipes having closed bottoms and the lower portions of the pipes being provided at their outer sides with openings opening into the shell, and a pouring
15 spout to which the upper ends of the said outlet pipes are attached, the said pouring spout joining the upper end of the bottle neck.

20 6. A non-refillable bottle having a neck provided at its lower portion with an interior annular shoulder and an interior annular recess above the shoulder, a valve seat having a base seated on the said shoulder, the base being provided with exterior annular
25 grooves of which the lowermost is in register with the said recess, a spring locking ring engaging the said recess and registering groove to lock the seat in place in the
30 neck, a shell having a closed upper end and inwardly-bent flanges engaging the upper groove of the base of the valve seat, a valve adapted to be seated on the said valve seat, outlet pipes secured to the closed upper end
35 of the shell and extending into the shell, and a pouring spout to the lower end of which the upper ends of the outlet pipes are secured.

40 7. A non-refillable bottle, comprising a bottle having a neck terminating in a rugged edge, and a closure within the neck and attached thereto, the closure having a pouring spout provided with a rugged edge fitting the rugged edge of the said bottle neck.

45 8. A non-refillable bottle, comprising a bottle having a neck terminating in a rugged edge, and a closure within the neck and attached thereto, the closure having a pouring spout extending into the neck and provided
50 with an exterior and downwardly projecting flange having a rugged edge fitting the rugged edge of the neck.

9. In a non-refillable bottle, the combination with a bottle, of a valve seat secured in

the neck of the bottle, a shell carried by the valve seat and having a closed upper end projecting above the sliding and spring pressed valve seat, a valve carried by the shell and adapted to seat on the valve seat, outlet pipes leading from the top of the
60 shell, and a pouring spout within the bottle neck and to which the outlet pipes are secured, said pouring spout having an exterior flange at its upper end resting upon the upper end of the bottle neck.

65 10. In a non-refillable bottle, the combination with a bottle, of a valve seat in the neck of the bottle, a shell carried by the valve seat and having a closed upper end projecting above the valve seat, a valve on said
70 seat, outlet pipes leading from the top of the shell, a pouring spout in the neck of the bottle and to which the outlet pipes are secured, said pouring spout having an exterior flange fitting upon the end of the bottle
75 neck, and a spring locking device for locking the valve seat to the bottle neck.

11. In a non-refillable bottle the combination with a bottle, of a valve seat secured in the neck of the bottle, a shell carried by the
80 valve seat and having a closed upper end arranged above the valve seat, a valve on said seat, a pouring spout extending into the bottle neck and resting upon the upper end of said neck, and outlet pipes leading
85 from the pouring spout through the closed end of the shell, said spouts having their ends within the shell closed and provided with openings in their sides.

12. In a non-refillable bottle, the combination with a bottle, of a valve seat secured in the neck of the bottle, a shell carried by the
90 valve seat and having a closed upper end arranged above the valve seat, an inverted conical pouring spout extending into the bottle neck and having at its upper end an
95 exterior and downwardly extending flange seating on the upper end of the bottle neck, and outlet pipes leading from the bottom of the pouring spout through the upper
100 closed end of the shell.

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

JOHN S. BROMHEAD.

Witnesses:

THEO. G. HOSTER,
PHILIP D. ROLLHAUS.