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O. E. S. AZZONI.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JAN. 7, 1905.

Fig. 1.

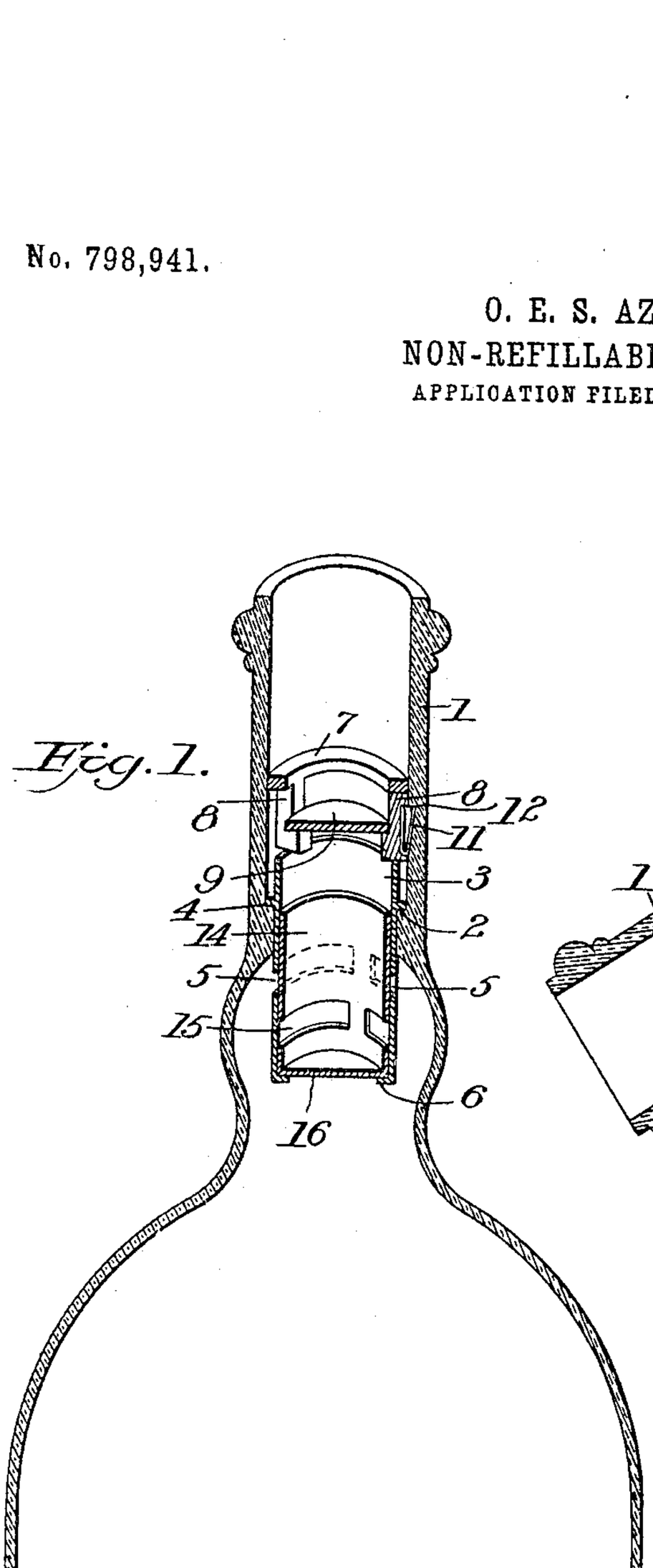


Fig. 2.

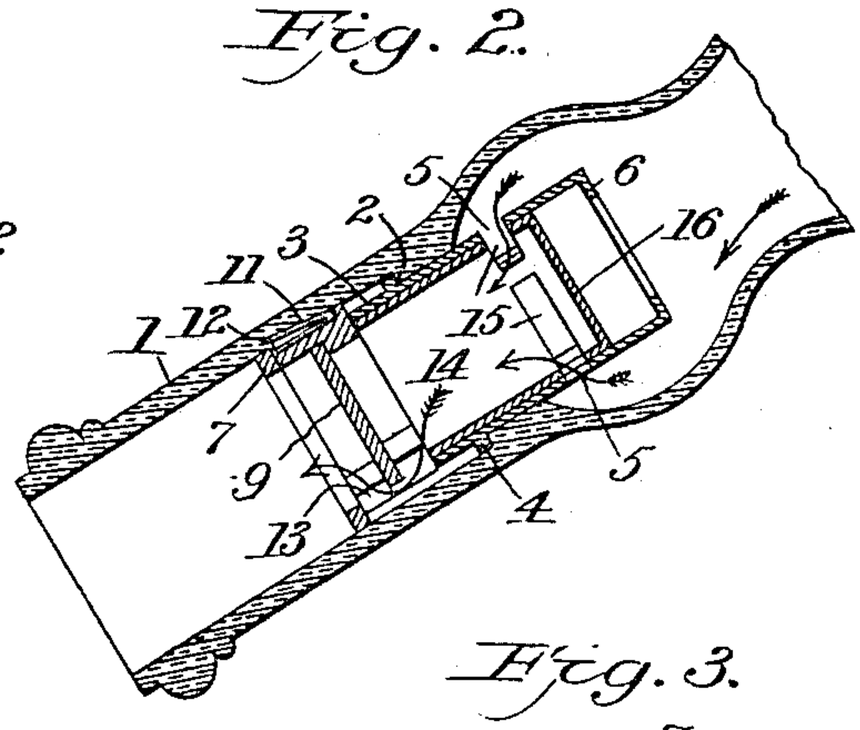


Fig. 3.

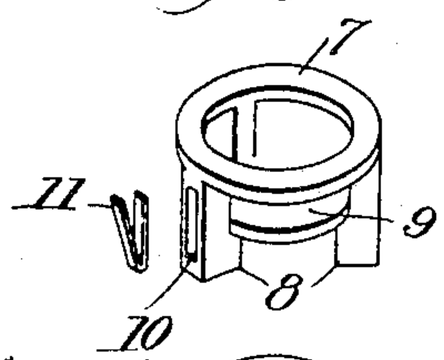


Fig. 4.

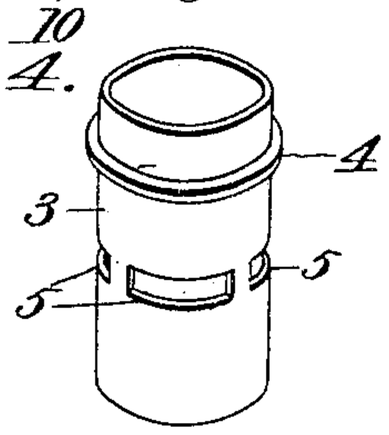
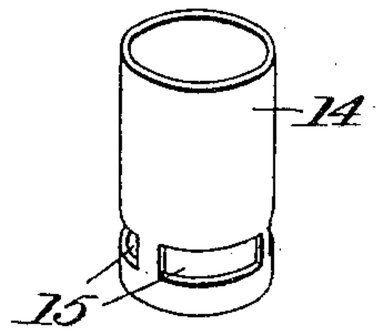


Fig. 5.



WITNESSES:

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NON-REFILLABLE BOTTLE.

No. 798,941. Specification of Letters Patent. Patented Sept. 5, 1905.

Application filed January 7, 1905. Serial No. 240,077.

To all whom it may concern:

Be it known that I, ORESTE E. S. AZZONI, a subject of the King of Italy, and a resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to non-refillable bottles; and my objects are to provide a bottle of this type with a closure which shall be simple in construction, consist of the fewest number of parts, capable of economical manufacture and of easy application to the bottle, and which shall, furthermore, be certain in the performance of its intended function of preventing the refilling of a bottle after the whole or any part of the original liquid contents has been withdrawn, and, finally, to provide such a device as will permit the free flow of the liquid therefrom when the bottle is inverted for pouring and will instantly close the pouring-orifice when the bottle is brought back to its normal position.

With these objects in view my invention consists in the novel construction and details thereof, as hereinafter described, with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a central section in perspective of a bottle, showing my invention applied thereto. Fig. 2 is a central section of the bottle-neck in pouring position, and Figs. 3, 4, and 5 are perspective details of the several elements of the valve and its seat or casing.

Referring to the drawings, in which the same reference characters relate to the same parts in all the views, the bottle-neck 1 is provided with an internal flange 2, adapted to receive and support a rib 4, formed on the outer surface of a tubular valve seat or casing 3, the lower end of which casing is provided with an internal lip or flange 6. This valve-casing consists of a thin shell of metal, glass, or other suitable material and is provided with circumferential slots or openings 5, which serve as outlet-ports for liquid from the interior of the bottle. These ports are normally closed by a tubular valve 14, having a closed bottom 16 and provided with slots or openings 15, constituting ports adapted to register with the ports 5 of the valve-casing when the bottle is inverted or turned to pouring position, as in Fig. 2, but which are closed by the imperforate wall of the casing 3 when the bottle is upright or in normal position, as in Fig. 1, when, it will be observed, the valve 14, which slides within the casing 3, rests upon the flange or lip 6 on said casing.

Surmounting the valve-casing is a guard, comprising a disk 9, carried by posts 8, resting on the outer edge of the casing, and a ring 7, capping said posts and adapted to fit snugly within the bottle-neck. A tortuous passage 13 is thus formed around the edge of the disk 9 between adjacent posts, the interior of the bottle-neck, and around the inner edge of the ring, which passage is made narrow enough to prevent the insertion of wire therethrough for the purpose of attempting to reach the ports 15 of the valve. These latter ports are located in such relation to the discharge-orifices 13 that they cannot be reached by any such wire or other device which it might be attempted to insert therein. In order to lock the guard in position, and thereby also lock the casing and its valve in place, I provide a recess or notch 12 in the inner surface of the bottle-neck and insert a V-spring 11 in a recess 10, formed in one of the posts 8 of the guard, the legs of said spring pointing outwardly, so that as the guard is pressed into the neck one leg of the spring will enter the notch 12, while the other leg remains seated in the recess 10, thus effectively locking the guard against withdrawal and at the same time securing the casing 3 in place.

With the parts arranged as shown the valve 14 normally closes the outlet-ports 5, and when it is desired to withdraw any portion of the contents of the bottle the latter is turned to pouring position, as shown, whereupon the valve 14 will slide into the position shown in Fig. 2, with its ports 15 registering with the ports 5, permitting free egress of liquid from the bottle into the chamber of the valve, thence through the discharge-orifice 13, and through the open mouth of the bottle-neck. The movement of the valve in opening is facilitated by the impact of the liquid against the closed bottom 16 of the valve, which thus acts as a plunger or piston in assisting the said movement of the valve, and if the liquid is thick and heavy a glass ball 17 may, if desired, be placed in the bottle normally resting on the bottom thereof and impinging against said valve-bottom when the bottle is inverted or turned to pouring position.

I claim as my invention—

1. In a non-refillable bottle, the combination

with the bottle-neck, of a casing provided with ports, a tubular valve having a closed bottom slidably mounted therein and normally closing said ports, said valve being provided with ports adapted to register with the said ports in the casing when the bottle is turned to pouring position, and a disk-guard above and covering the upper end of the casing, substantially as described.

2. In a non-refillable bottle, the combination with the bottle-neck, of a casing surmounted by a disk-guard less in diameter than the bottle-neck and forming a passage from the interior of the casing around the edge of the said disk and provided with ports, and a tubular valve having a closed bottom and provided with ports therein adapted to register with the ports of the valve-casing when the bottle is in pouring position, substantially as described.

3. In a non-refillable bottle, the combination with the bottle-neck having an internal flange or lip, a casing supported by said flange and provided with ports, a flange or lip at the lower end of the casing, a tubular valve having a closed bottom resting on said flange or lip when the bottle is upright and provided with ports adapted to register with the ports of the casing when the bottle is in pouring position, and a disk-guard over the upper end of the casing and providing a passage around its edge from the interior of the casing, substantially as described.

4. In a non-refillable bottle, the combination with the bottle-neck having an internal flange, a casing having a rib or projection resting on said flange to support the casing, said casing having ports therein below the flange in the bottle-neck, a flange at the lower end of the casing, a tubular valve having a closed bottom adapted to seat upon said flange and provided with ports normally closed and adapted to register with the ports in the casing when the bottle is in pouring position, and a guard covering the upper end of the casing and providing a passage between the edge of said guard and the bottle-neck, substantially as described.

5. In a non-refillable bottle, the combination with the bottle-neck having an internal flange, a casing having a rib or projection resting on said flange to support the casing, said casing having ports therein below the flange in the bottle-neck, a lip or flange at the lower end of the casing, a tubular valve having a closed bottom adapted to seat on said lip or flange and provided with ports normally closed and adapted to register with the ports in the casing when the bottle is in pouring position, and a guard covering the upper end of the casing, comprising a disk less in diameter than the bottle-neck, posts extending from the end of the casing supporting said disk and forming a tortuous discharge-passage from the casing to the bottle-mouth, substantially as described.

6. In a non-refillable bottle, the combination with the bottle-neck having an internal flange, a casing having a rib or projection resting on said flange to support the casing, said casing having ports therein below the flange in the bottle-neck, a lip or flange at the lower end of the casing, a tubular valve having a closed bottom adapted to seat on said lip or flange and provided with ports normally closed and adapted to register with the ports in the casing when the bottle is in pouring position, and a guard covering the upper end of the casing, comprising a disk less in diameter than the bottle-neck, posts extending from the end of the casing supporting said disk and forming a tortuous discharge-passage from the casing to the bottle-mouth, and a ring supported by said posts above the disk fitting the bottle-neck, substantially as described.

7. In a non-refillable bottle, the combination with the bottle-neck having an internal flange, a casing having a rib or projection resting on said flange to support the casing, said casing having ports therein below the flange in the bottle-neck, a lip or flange at the lower end of the casing, a tubular valve having a closed bottom adapted to seat on said lip or flange and provided with ports normally closed and adapted to register with the ports in the casing when the bottle is in pouring position, and a guard covering the upper end of the casing, comprising a disk less in diameter than the bottle-neck, posts extending from the end of the casing supporting said disk and forming a tortuous discharge-passage from the casing to the bottle-mouth and a ring supported by said posts above the disk fitting the bottle-neck, and a lock engaging the guard structure and the bottle-neck to lock the former in position, substantially as described.

8. In a non-refillable bottle, the combination with the bottle-neck having an internal flange, a casing having a rib or projection resting on said flange to support the casing, said casing having ports therein below the flange in the bottle-neck, a lip or flange at the lower end of the casing, a tubular valve having a closed bottom adapted to seat on said lip or flange and provided with ports normally closed and adapted to register with the ports in the casing when the bottle is in pouring position, and a guard covering the upper end of the casing, comprising a disk less in diameter than the bottle-neck, posts extending from the end of the casing supporting said disk and forming a tortuous discharge-passage from the casing to the bottle-mouth, a ring supported by said posts above the disk fitting the bottle-neck, said bottle-neck having a notch therein, and one of the posts of the guard structure having a recess therein with a spring

having two legs engaging, respectively, the notch and the recess, substantially as described.

9. A closure for a non-refillable bottle comprising a casing adapted to be seated within the bottle-neck and provided with ports in its lower portion, a lip or flange at the lower end of said casing, a tubular valve having a closed bottom adapted to seat against the lip or flange of the casing and provided with ports normally closed when the valve is seated on said flange and adapted to register with the ports in the casing when the valve is inverted and moves toward the other end of the casing, a guard-disk supported by posts adapted to rest upon the upper end of the casing, a ring supported by the posts above the disk and adapted to fit within the bottle-neck, one of said posts being provided with a locking-recess having a spring therein, adapted to engage a notch in the bottle-neck for locking the guard-ring and the valve-casing in position, substantially as described.

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

ORESTE E. S. AZZONI.

Witnesses:

VITTORIO C. GIANNINI,

MARCHIL AMBOY.