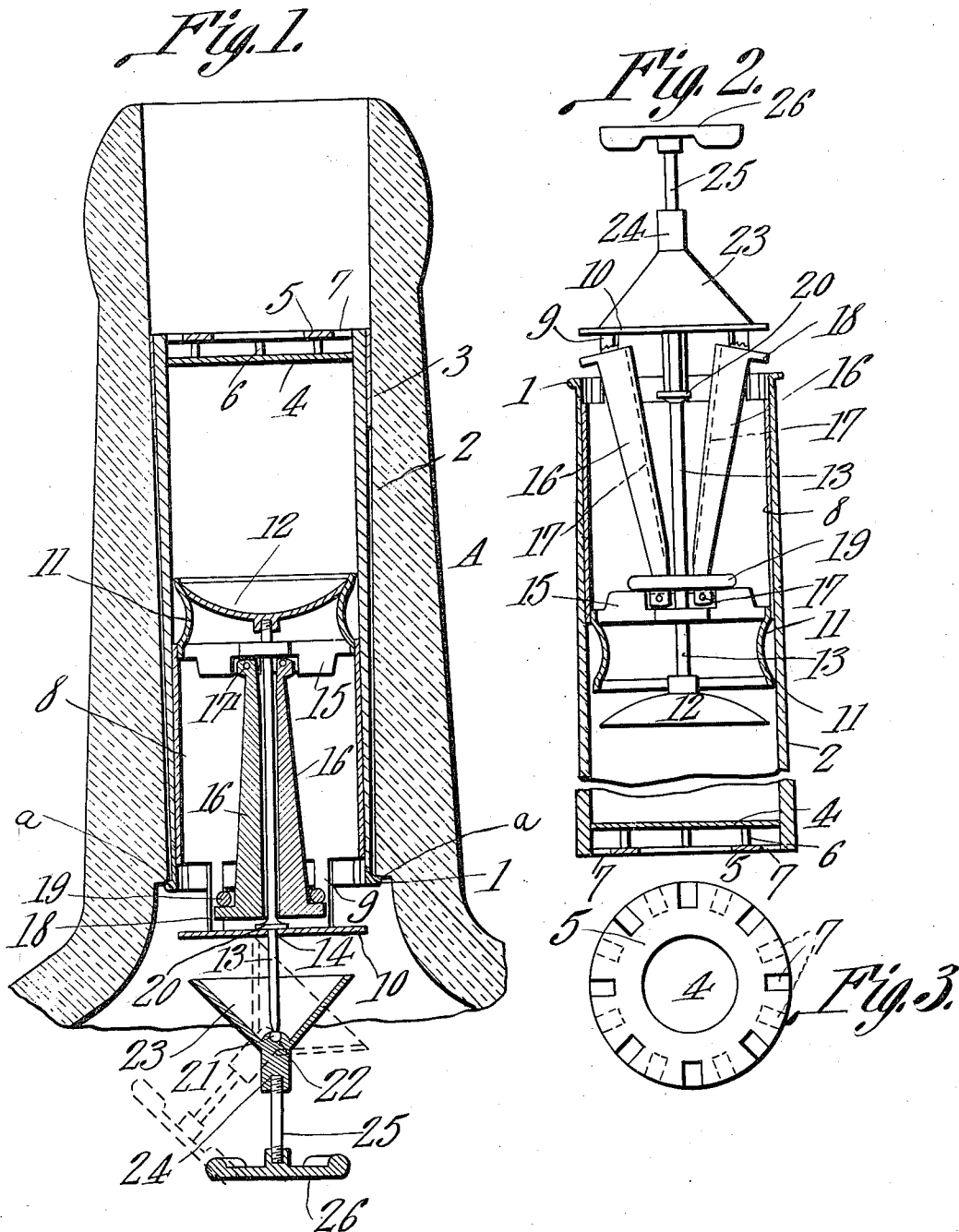


P. H. GRINKE.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JUNE 10, 1910.

982,268.

Patented Jan. 24, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

PAULINE H. GRINKE, OF ST. LOUIS, MISSOURI.

NON-REFILLABLE BOTTLE.

982,268.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed June 10, 1910. Serial No. 566,200.

To all whom it may concern:

Be it known that I, PAULINE H. GRINKE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

This invention relates to bottles of that type designed to prevent refilling after the initial contents have been removed.

One of the objects of the invention is to provide a novel form of valve having means whereby it will be positively held in closed position while the bottle is upright but which will be automatically released so as to permit the valve to open when the bottle is inverted.

A further object is to provide improved means for preventing the insertion of a wire or the like into engagement with the valve so as to hold it off of its seat.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing:—Figure 1 is a central longitudinal section through the neck of a bottle having the present improvements combined therewith. Fig. 2 is a central longitudinal section through the valve mechanism and showing the positions of the parts when inverted. Fig. 3 is a plan view of the guard disk.

Referring to the figures by characters of reference A designates a bottle neck adapted to receive the mechanism constituting the present invention, the said neck being preferably formed with an inner shoulder *a* adapted to be engaged by one or more spring catches 1 extending from the inner end of the outer tube or casing 2 of the valve. This casing may be provided with a cork or rubber packing sleeve 3 for preventing leakage between the casing and the inner wall of the neck and the outer end of the said casing 2 is preferably closed by means of a guard consisting of an inner disk 4 and an outer ring 5. The ring is spaced from the disk by means of pins 6 or the like and marginal recesses 7 are formed in both the ring and the disk, these recesses being disposed out of register so that it becomes impossible to insert a straight wire through the openings and into the interior of the casing

2. An inner casing 8 is soldered or otherwise secured within the casing 2 and has a cage 9 depending therefrom and provided with a disk like base 10. A neck 11 is formed at the upper end of the inner casing 8 and the outer end of this neck constitutes the seat for a concavo-convex disk 12 forming the valve proper. A stem 13 is secured to the central portion of the disk 12 and is mounted to slide within an opening 14 formed in the center of the base 10. A spider 15 is arranged within the inner casing 8 and also serves to guide the stem 13, this spider being provided, mainly, to support oppositely disposed similar jaws 16 having longitudinal grooves 17 in their meeting faces adapted to receive the stem 13. These jaws are pivotally connected to the spider 15 as shown at 17' and when they are in engagement with the stem, they cooperate to form a substantially conical sleeve. Flanges 18 are formed at the large ends of these jaws 16 and constitute supports for a holding ring 19 which is loosely mounted on the jaws. A collar 20 is formed on or secured to the stem and is adapted when the valve 12 is seated, to rest upon the base 10 and to bear upwardly against the lower ends of the jaws 16, thus securely holding the valve against movement. The lower end of the stem 13 has a ball 21 thereon which is seated in a socket 22 formed within the base of a conical cup-like arm 23 of a lever 24. A stem 25 extends from this lever and has a weight 26 secured to the lower end thereof.

After the bottle has been filled, the casing 2 with the parts therein, is inserted into the neck until the catches 1 swing into engagement with the shoulder *a*. A cork or other form of stopper can then be placed in the neck above the guard and the parts will thus rest in the position shown in Fig. 1, the valve 12 being on its seat and the ring 19 bearing on the flanges 18 and thus holding the jaws 16 above the collar 20. When the bottle is tilted, the cup-shaped arm 23 of the lever 24 swings upon the ball 21 until it comes into contact with the base 10 as shown by dotted lines in Fig. 1. The weight 26 and lever 24 will thus operate to maintain the valve 12 upon its seat until the bottle has been completely inverted whereupon the cup-like arm 23 will rest flat upon the bottom disk 10 and the ring 19 will slide longitudinally of the jaws 16 and onto the

spider 15. The jaws will therefore be free to swing apart and the collar 20 can pass between them. Valve 12 will therefore leave its seat and the liquid contents of the bottle will be free to flow outwardly through the casing 8 and the guard. It will thus be seen that the valve 12 can only be opened by completely inverting the bottle. Should the bottle be placed in an inclined position, the weight 26 would swing the cup 23 so as to pull on the stem 13 and close the valve and, as soon as the bottle is restored to its initial or upright position, the ring 19 will drop downwardly onto the flanges 18 and thus hold the jaws 16 in the path of the collar 20 and prevent the valve 12 from being raised.

It will be noted by referring to the drawings that the casing 2 is tapered toward its lower end so that, when it is inserted into the bottle neck it will be prevented from pushing downwardly into the bottle.

Various changes can of course be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as defined in the appended claims.

What is claimed is:—

1. A non-refillable bottle including a casing, a guard, a valve, a weighted valve stem, a projection on the stem, means movable into the path of the projection for holding the valve and stem against movement and a holding device surrounding said means.

2. A non-refillable bottle including a casing, a guard, a valve, a weighted stem extending from the valve, a projection on the stem, a holding device mounted upon a fixed pivot within the casing and movable into the path of said projection, and a gravity operated means surrounding the device for maintaining said device in the path of the projection.

3. A non-refillable bottle including a casing, a guard, a valve, a weighted stem pro-

jecting from the valve, jaws mounted upon fixed pivots within the casing, and a gravity operated device for holding the jaws in engagement with the stem to hold the valve upon its seat except when the bottle is inverted, said device surrounding the jaws.

4. A non-refillable bottle including a casing, a guard, a cage extending from the casing and including a base, a valve, a weighted stem upon the valve and mounted to slide within said base, jaws mounted upon fixed pivots within the casing and adapted to engage the stem, and a gravity operated device surrounding the jaws for holding the jaws in engagement with the stem to secure the valve in closed position except when the bottle is inverted.

5. A non-refillable bottle including a casing, a guard, a valve, a stem upon the valve, oppositely disposed jaws supported upon fixed pivots within the casing said stem extending between the jaws, and gravity operated means slidably mounted on and surrounding the jaws for holding the jaws in engagement with the stem to hold the valve upon its seat when the bottle is in other than an inverted position.

6. A non-refillable bottle including a casing, a guard, a valve, a weighted stem extending from the valve, oppositely disposed jaws pivotally mounted within the casing, and a ring slidably mounted on the jaws for automatically holding the jaws in engagement with the stem and holding the valve upon its seat when the bottle is in other than an inverted position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PAULINE H. GRINKE.

Witnesses:

WILLIAM P. ARND,
ADOLPH GRINKE.