No. 797,682. PATENTED AUG. 22, 1905.

P. GRONEMEYER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED NOV. 12, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

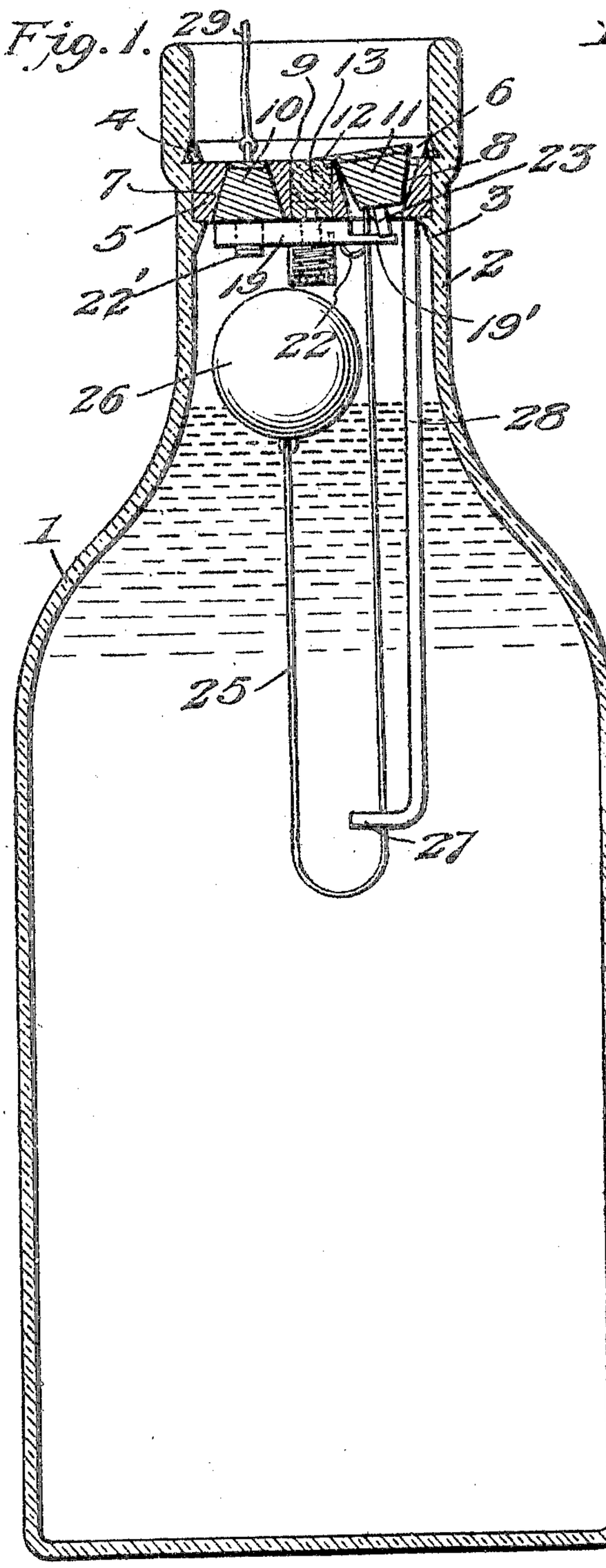
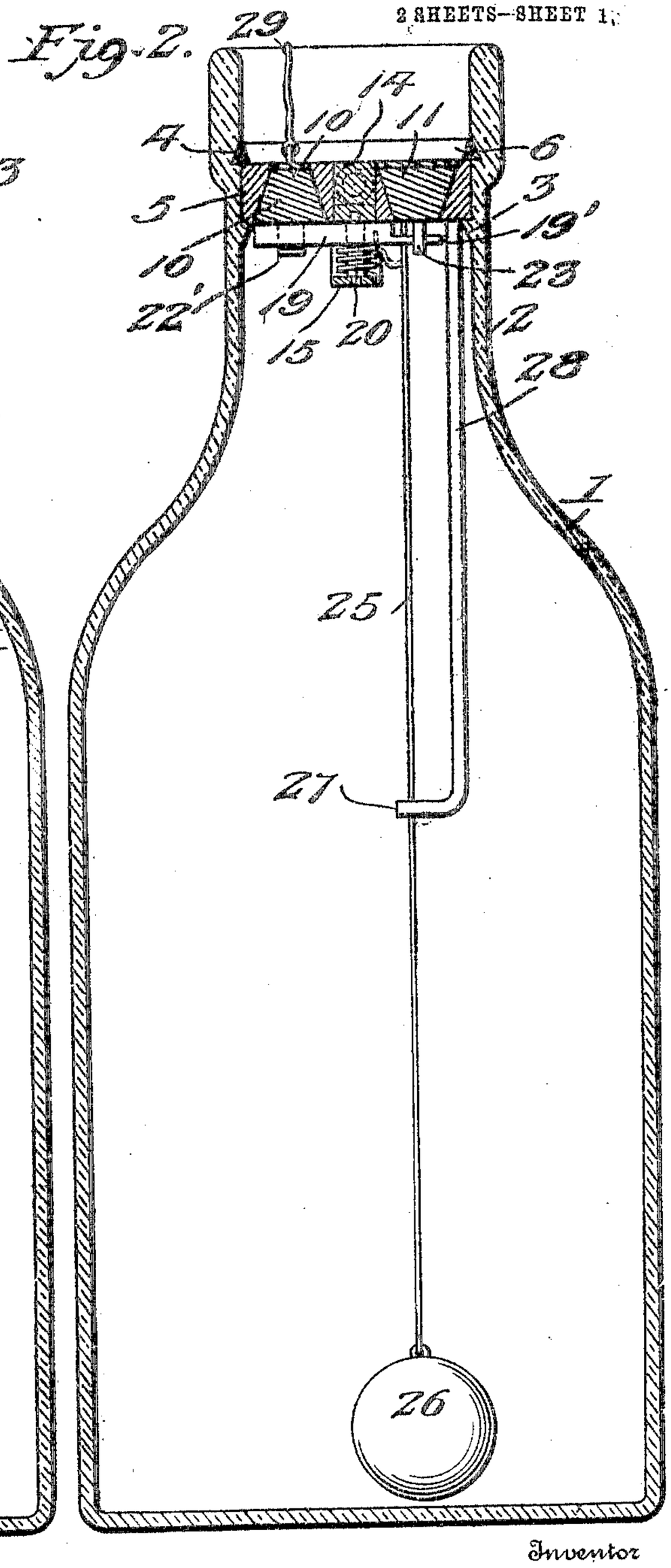


Fig. 2.



Inventor

Philip Gronemeyer

Witnesses

Edwin L. McKee

F. A. Elmore

By Victor J. Evans

Attorney

No. 797,682. PATENTED AUG. 22, 1905.

P. GRONEMEYER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED NOV. 12, 1904.

2 SHEETS—SHEET 2.

Fig. 3.

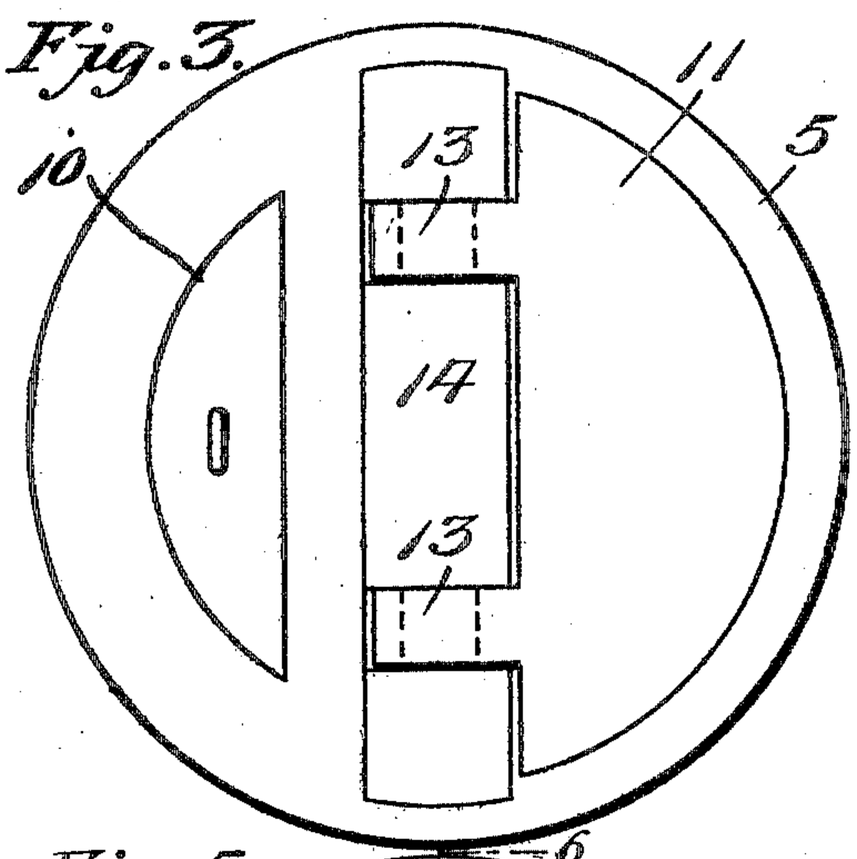


Fig. 4.

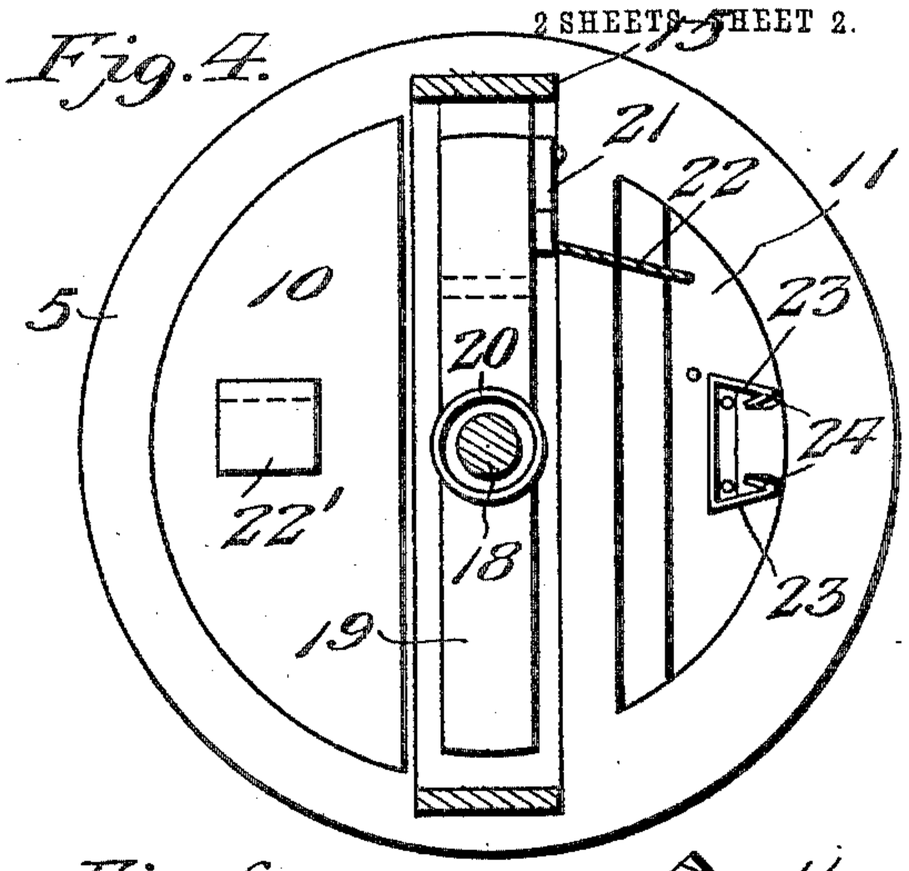


Fig. 5.

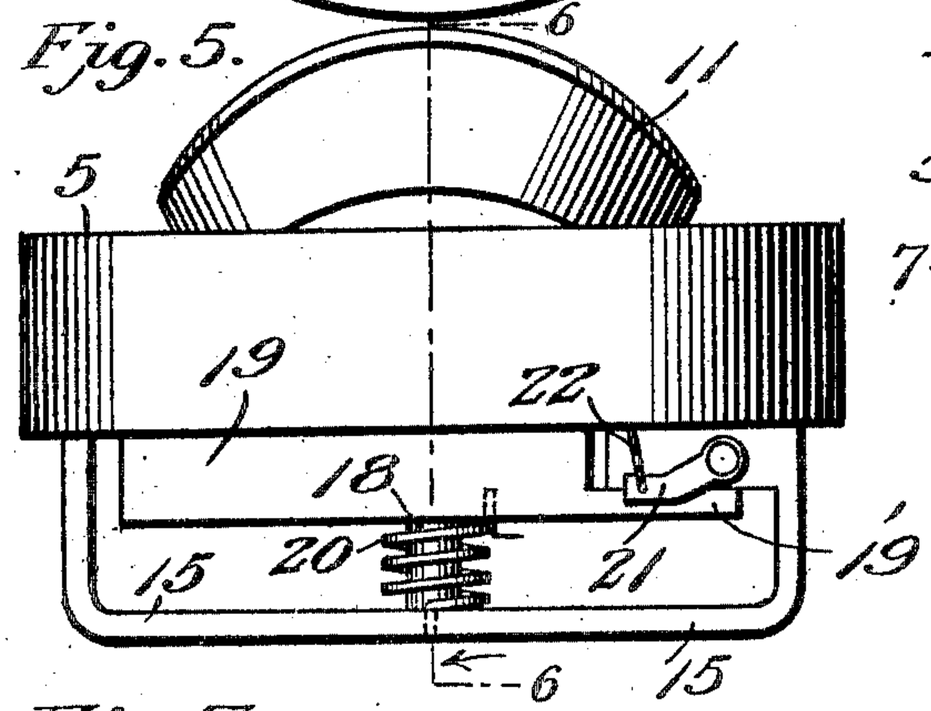


Fig. 6.

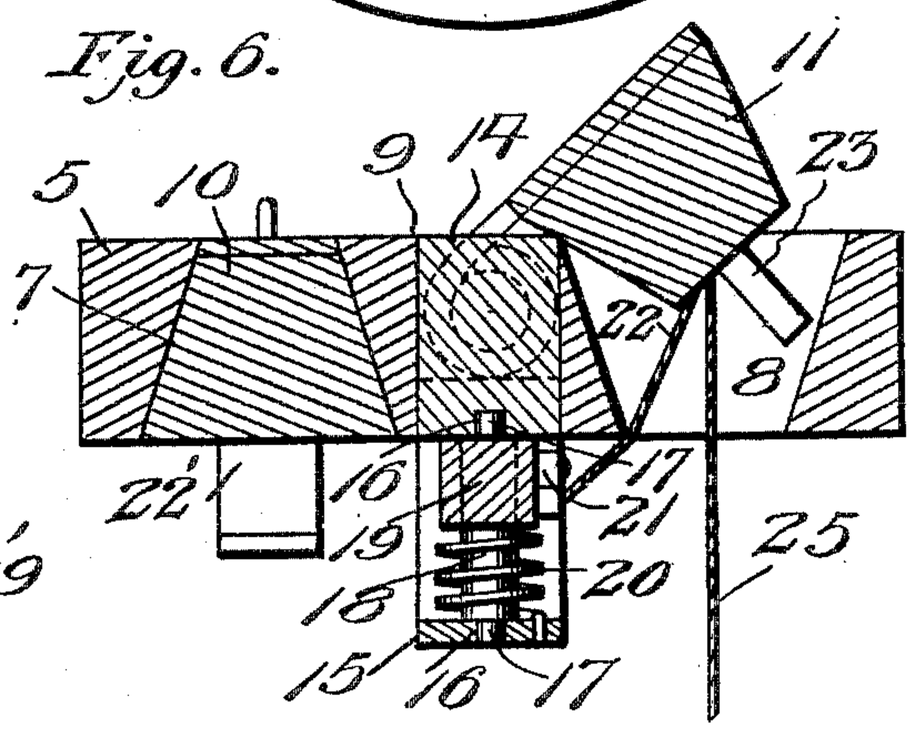


Fig. 7.

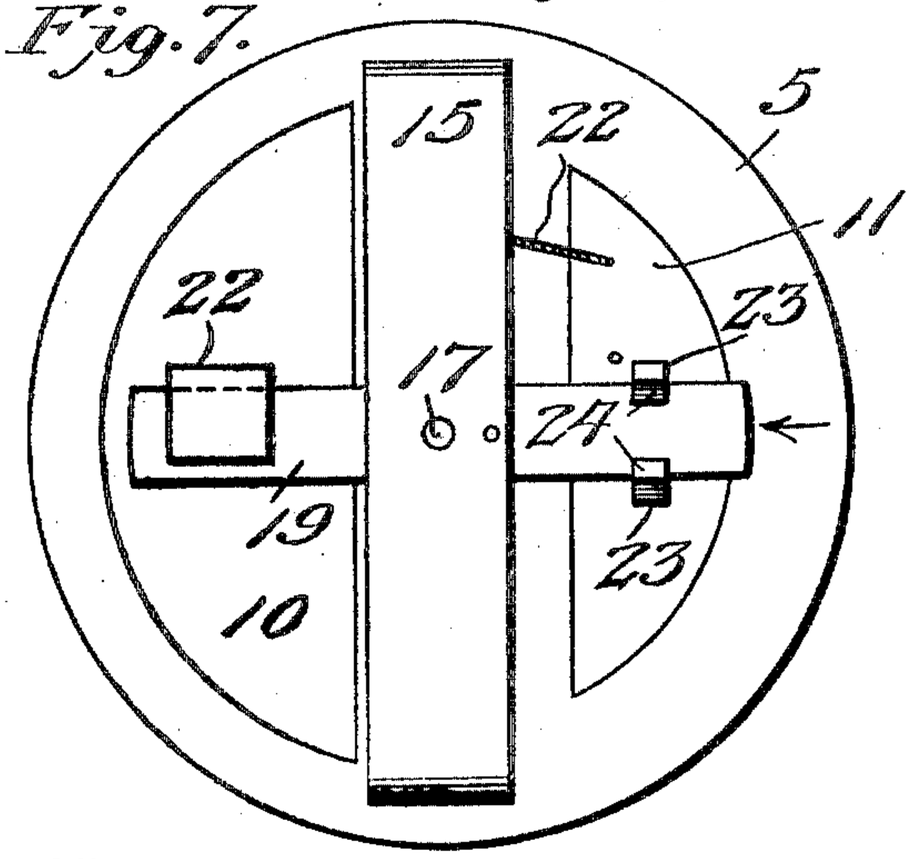
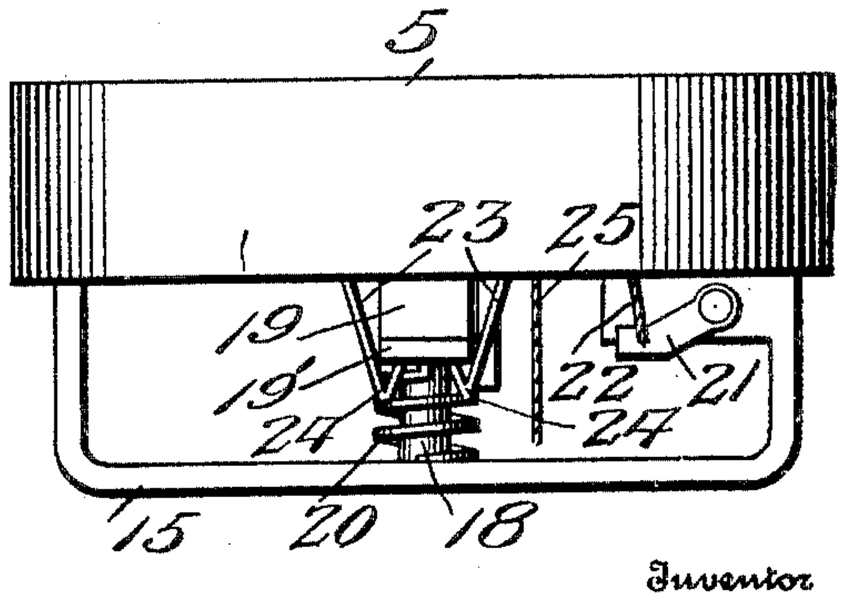


Fig. 8.



Witnesses

Edwin G. McKee

P. S. Elmore

Inventor

Philip Gronemeyer

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

PHILIP GRONEMEYER, OF ST. LOUIS, MISSOURI.

NON-REFILLABLE BOTTLE.

No. 797,682. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed November 12, 1904. Serial No. 232,538.

To all whom it may concern:

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

This invention relates to non-refillable bottles, and has for its objects to produce a comparatively simple inexpensive device of this character which after the contents of the bottle have been discharged will effectually prevent refilling of the latter, and thereby obviate the fraudulent substitution of an inferior grade of goods for that originally contained in the bottle.

A further object of the invention is to provide a device which permits of the bottle being readily filled initially and in which after the bottle has been properly charged the inlet-valve will be securely closed and sealed to prevent introduction of further liquid therethrough.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a bottle and a valve mechanism embodying the invention and showing the discharge-valve released. Fig. 2 is a similar view showing the bottle emptied and the discharge-valve locked. Fig. 3 is a top plan view of the valve mechanism on an enlarged scale. Fig. 4 is a reverse plan view of the same, partly in section. Fig. 5 is an elevation of the valve mechanism, showing the discharge-valve partly open. Fig. 6 is a vertical cross-section taken on the line 6 6 of Fig. 5 and viewed in the direction of the arrow. Fig. 7 is a bottom plan view of the valve mechanism, showing the discharge-valve closed and locked. Fig. 8 is a side elevation viewed in the direction of the arrow in Fig. 7.

Referring to the drawings, 1 designates a bottle having a neck 2 and of the usual or any appropriate construction and material, except that the neck is provided with an internal marginal flange or seat 3, disposed beneath and suitably remote from an internal marginal groove or recess 4.

Arranged within the neck 2 and resting upon the seat 3 is an annular disk-like member or body 5, fixedly secured in place by means of a retaining member 6 in the form of cement or analogous filling material disposed in the groove 4, the member or body 5 being provided with an inlet opening or port 7 and an outlet or discharge port 8 and having between said ports an elongated opening 9, extended diametrically across the body 5.

Arranged in the port 7 is a valve or closure 10 and in the port 8 a valve or closure 11, having perforated hinge leaves or ears 12, preferably formed from sheet metal and folded around the reduced circular portions or pintles 13 of a pivoting bar or member 14 seated within the opening 9, it being noted that the marginal walls of the valve 10 are upwardly beveled or inclined and those of the valve 11 reversely or downwardly beveled or inclined, while the marginal walls of the ports 7 and 8 are likewise beveled to correspond with the respective valves.

Carried by the bar 14 and at its lower face is a frame which projects downward beneath the body 5 and includes a longitudinal plate 15, arranged beneath and longitudinally of the bar 14. At the longitudinal center of the bar 14 and plate 15 there are formed coincident vertically-alining bearings 16 for the reduced ends or journals 17 of a rotary member or shaft 18, on which is fixed a locking member or bar 19, which initially extends beneath and longitudinally of the bar 14 and has one of its ends cut away or recessed to produce an extension 19′, which is spaced from the lower face of the body 5, there being also disposed upon the shaft 18, which constitutes the pivotal axis of the bar 19, a torsion-spring 20, having one end engaged with the plate 15 and the other with the bar 19 for moving the latter, the bar being normally restrained from movement by a pivotal retaining member or latch 21, connected by a cord 22 or otherwise with the discharge-valve 11 for a purpose which will hereinafter appear.

The valve 10 has upon its lower face a depending substantially L-shaped engaging member or keeper 22′, while the valve 11 carries a pair of spaced depending spring-en-

gaging members or fingers 23, provided at their lower ends with inturned engaging portions 24, there being also suspended from the valve 11, by means of a cord or other flexible element 25, a hollow ball or float 26, adapted to float upon the surface of the liquid contained in the bottle, the cord 26 being preferably engaged between its ends with an eye or guide 27, provided at the lower end of a vertically-depending arm or member 28 carried by the body 5.

In practice the valve 10 is initially loose and suspended on a cord or other element 29, while the bar 19 lies beneath and parallel with the bar 14, while the valve 11 is free to swing upon its pivot to open position. With the parts in this position if it is desired to fill the bottle the valve 10 is lowered, by means of the cord, to permit introduction of the liquid through the port 7, and after the bottle has been properly charged the valve 10, which is previously coated with a suitable cement, is drawn, by means of the cord 29, into and securely seals said port. The liquid may then be discharged through the port 8, and at the initial discharge the valve 11 is opened to such an extent as to actuate the retaining member 21, through the medium of the cord 22, for releasing the locking member 19, whereupon the spring 20 will turn said member to the position illustrated in Figs. 1, 2, and 7 and engage one end of the member with the engaging member or hook 22′, carried by the valve 10, to thus securely lock the valve in position. The parts remain in this position until the entire contents of the bottle have been discharged, whereupon the weight of the ball 26, dropping within the bottle, will serve to engage the spring-catches 23 with the extension 19′ of the locking member 19, thereby securely locking the valve 11 in closed position and obviating the introduction of further liquid to the bottle and effectually preventing the fraudulent refilling of the latter.

From the foregoing it is apparent that I produce a comparatively simple inexpensive device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. A bottle and its neck, a body seated in the latter and provided with inlet and discharge ports, valves for closing said ports, and means for permanently locking the inlet-valve.

2. A bottle and its neck, a body seated in the latter and provided with inlet and discharge ports, valves for closing said ports, and means controlled by the movement of the outlet-valve for permanently locking the inlet-valve.

3. A bottle and its neck, a body seated in the latter and provided with inlet and outlet ports, valves for closing said ports, means controlled by movement of the outlet-valve for permanently locking the inlet-valve, and means for permanently locking the outlet-valve upon complete discharge of the bottle's contents.

4. A bottle having a neck provided with inlet and discharge ports, valves for closing said ports, a locking member for closing said valves, means for maintaining said member normally in inactive position, said means being operable by movement of the outlet-valve for releasing the member, means for moving the released member to position for permanently locking the inlet-valve, and means operable upon complete discharge of the contents of the bottle for automatically and permanently locking the discharge-valve.

5. A bottle having a neck provided with inlet and discharge ports, valves for said ports, a locking member for the valves, means for automatically moving the member to locking position, said member being adapted for engagement with the inlet-valve to permanently lock the same, and devices carried by the discharge-valve for engagement with the member to permanently lock the latter valve.

6. A bottle having a neck provided with inlet and discharge ports, valves for closing said ports, a bar pivotally sustained in the neck and normally retained in inactive position, means controlled by movement of one of the valves for releasing the bar, means for automatically moving the released bar to permanently lock the other valve, and devices carried by the first-named valve for permanent locking engagement with the bar.

7. A bottle having a neck provided with inlet and discharge ports, valves for closing said ports, a bar pivotally sustained in the neck and normally maintained in inactive position, means controlled by movement of the discharge-valve for releasing the bar, means for automatically moving the released bar into engagement with and for permanently locking the inlet-valve, and devices carried by the discharge-valve for permanent locking engagement with the bar.

8. A bottle having a neck provided with inlet and discharge ports, valves for closing said ports, a locking-bar engaged with and adapted for permanently locking the inlet-valve, devices carried by the discharge-valve for permanent locking engagement with the bar, and means for automatically moving the discharge-valve to locking position.

9. A bottle having a neck provided with inlet and discharge ports, valves for closing said ports, a member movable into engagement with and for permanently locking the inlet-valve, devices carried by the discharge-valve for permanent locking engagement with the member, and a float connected with the discharge-valve and normally sustained by the liquid contents of the bottle, said float being adapted upon discharge of said contents to move the discharge-valve to locked position.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP GRONEMEYER.

Witnesses:
ELLA M. HARTRIDGE,
C. S. HARTRIDGE, Jr.