

No. 773,032.

PATENTED OCT. 25, 1904.

W. ROBINSON.
NON-REFILLABLE BOTTLE.
APPLICATION FILED DEC. 26, 1903.

NO MODEL.

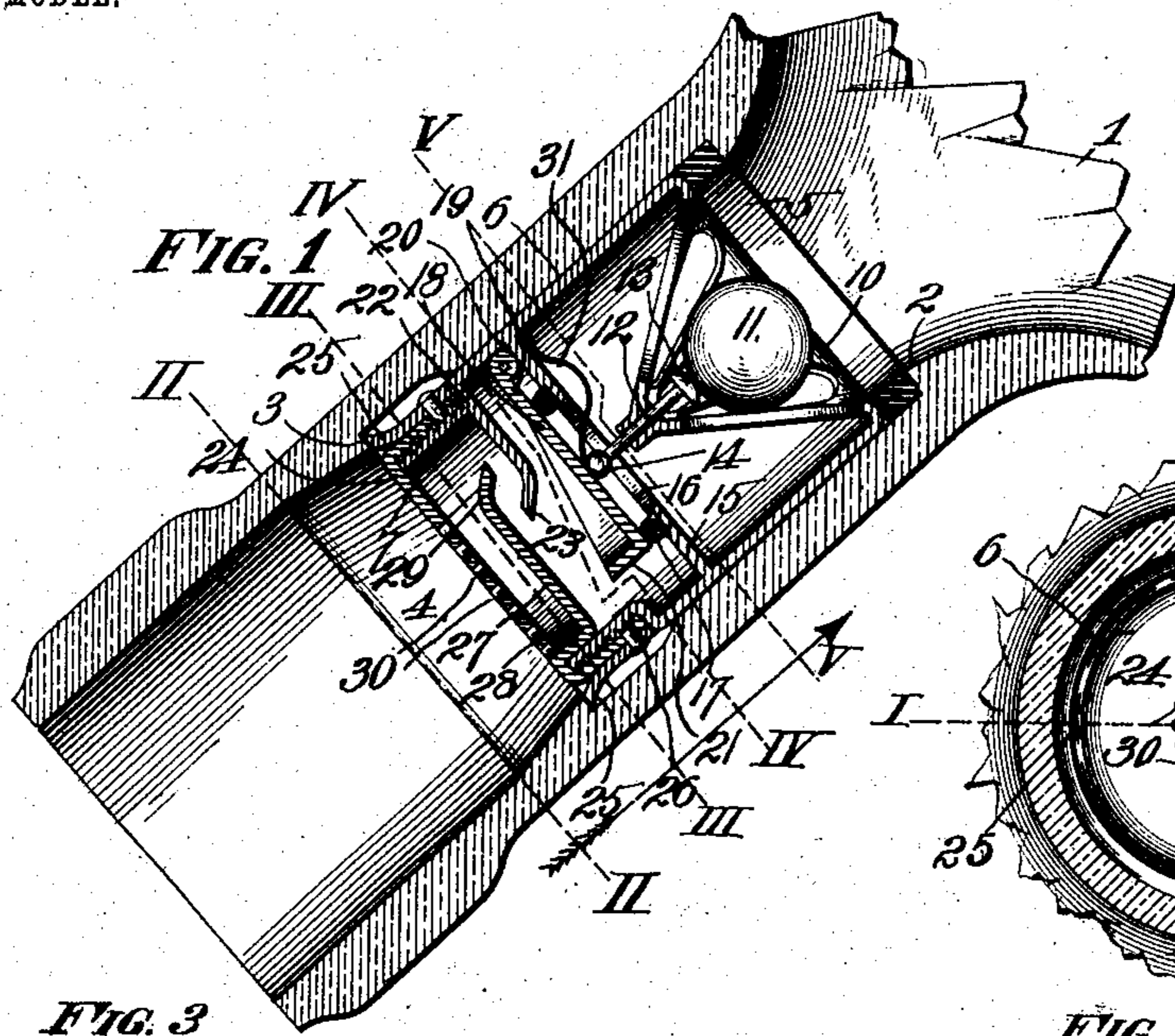


FIG. 2

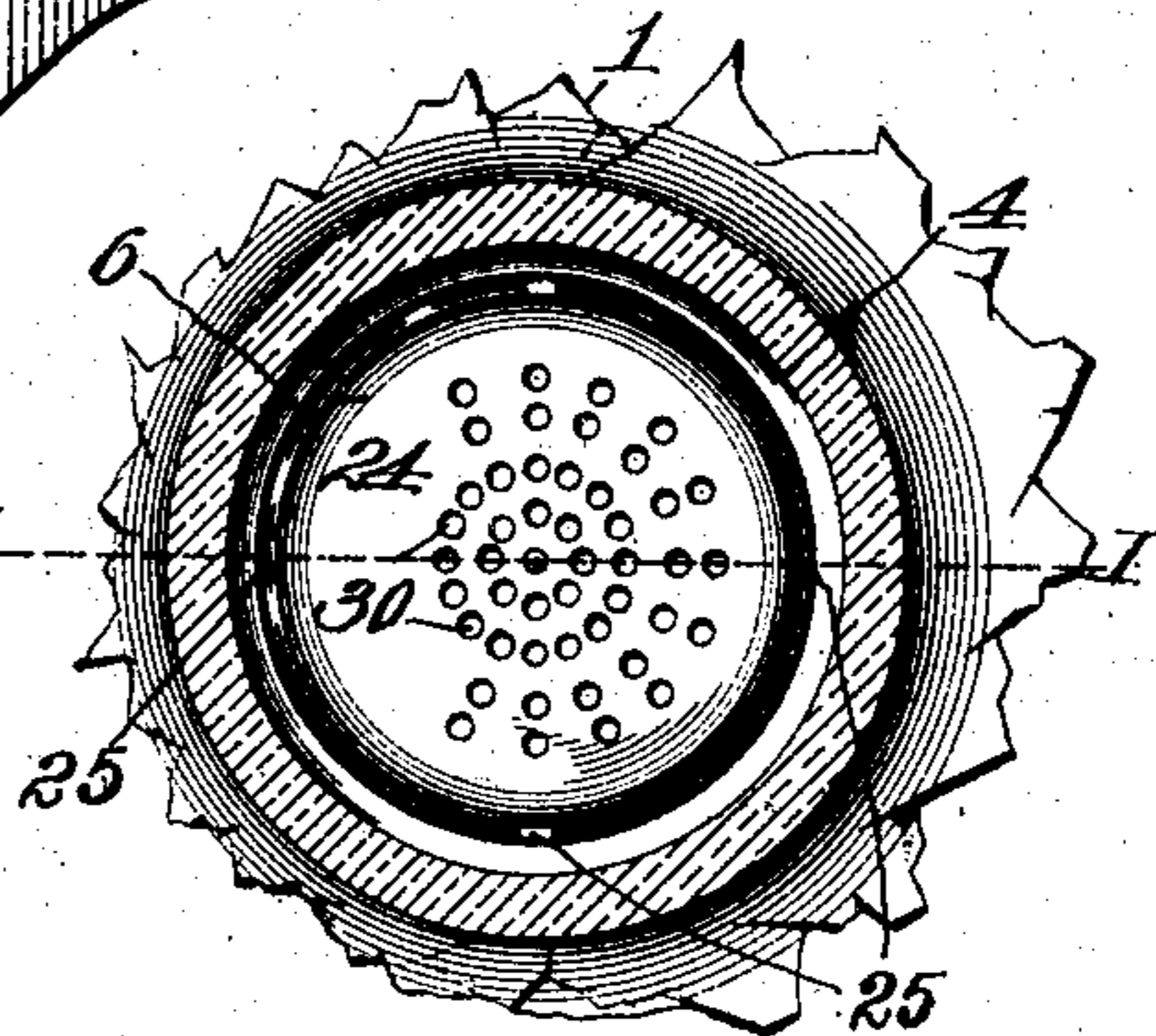


FIG. 4

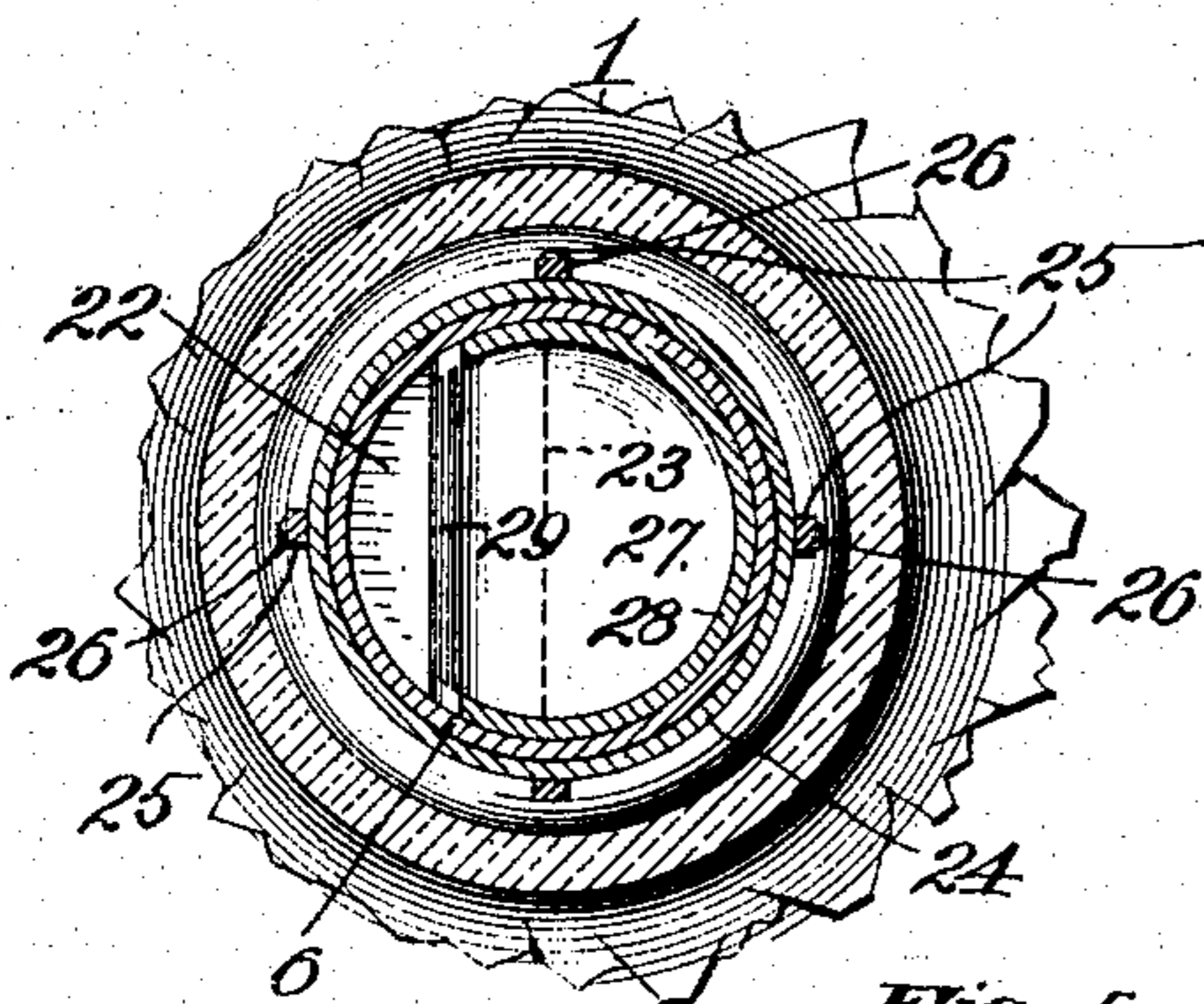


FIG. 5

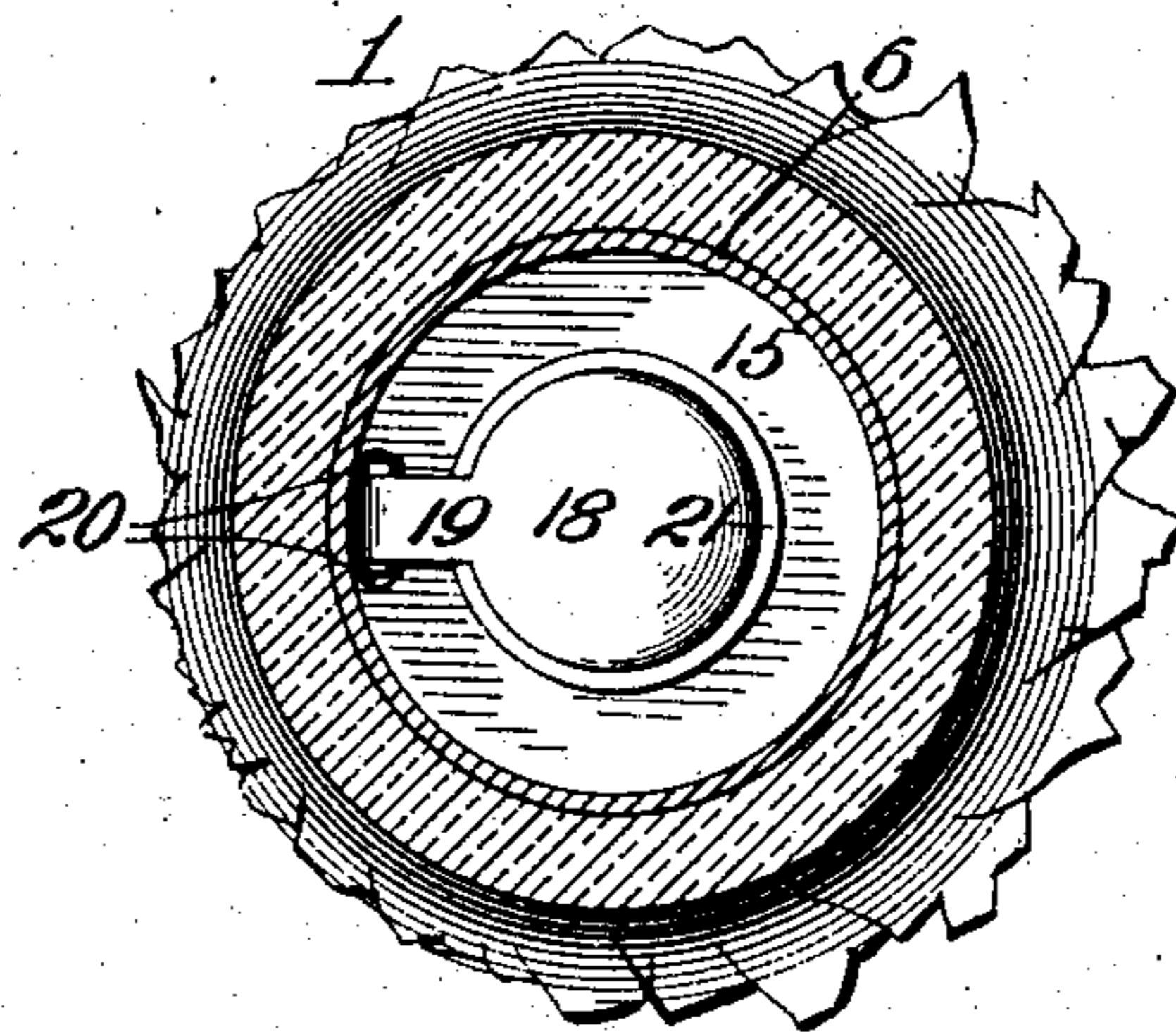
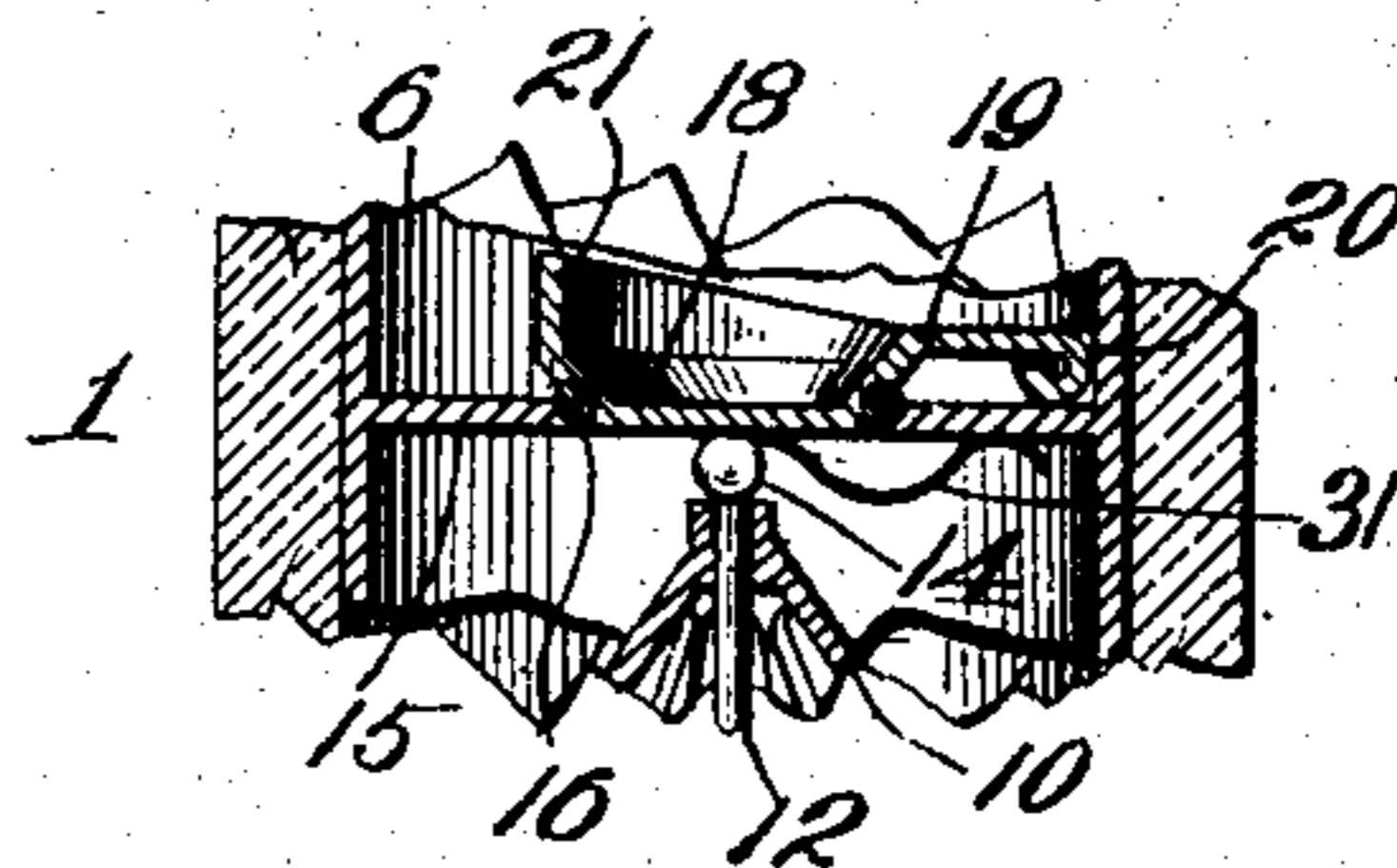


FIG. 6



Witnesses

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 773,032, dated October 25, 1904.

Application filed December 26, 1903. Serial No. 186,680. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROBINSON, a subject of the King of Great Britain, residing at Kansas City, in the county of Wyandotte and State of Kansas, 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 has for its object to produce an efficient and reliable device of this character which can be manufactured and sold cheaply.

To this end the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section taken on the line I I of Fig. 2 with the bottle inverted and the parts of the attachment in the positions they occupy just previous to the opening of the trap-door to permit the contents of the bottle to escape. Fig. 2 is a horizontal section taken on the line II II of Fig. 1. Fig. 3 is a horizontal section taken on the line III III of Fig. 1. Fig. 4 is a horizontal section on the line IV IV of Fig. 1. Fig. 5 is a horizontal section on the line V V of Fig. 1. Fig. 6 is a longitudinal section of a part of a bottle-neck when upright and showing a trap-door of modified form.

In the said drawings, 1 designates a bottle of any suitable type, having its neck formed with an internal annular shoulder 2, disposed toward the mouth of the bottle, and between the latter and said shoulder with an internal annular shoulder 3 disposed toward the bottom of the bottle, the shoulder 3 having its inner wall or face 4 flaring upwardly and outwardly.

5 designates a compressible gasket, preferably of rubber and seated on shoulder 2.

6 designates a cylindrical casing which in length is slightly less than the distance between gasket 5 and shoulder 3, the upper end or neck of said casing being of slightly-reduced diameter and externally threaded, if desired, as at 7. The bottom of the casing is in the form of a perforated or skeleton cone

10, which projects upwardly into the casing, so as to receive and guide therein a ball or weight 11 for a purpose which hereinafter appears, which ball or weight may be of any suitable or preferred material and construction.

12 designates a push-rod which extends slidably through the apex of the conical bottom and is provided at its lower end with a head 13 to be struck by the ball 11 under conditions hereinafter mentioned and having a head 14 at its upper end to prevent its dislocation from the conical bottom, said head 14 when the bottle is upright resting upon the apex of said bottom, as shown in Fig. 6. Just above the conical bottom the casing is provided with a horizontal partition 15, having a large central perforation 16, which in the preferred construction is surrounded by a gasket 17, secured as shown or in any other suitable manner on the upper side of the partition. This partition and its gasket forms a seat for the trap-door 18, which preferably has an extension or arm 19 hinged to and between lugs 20, formed integral with the casing and its said partition by preference. The trap-door may carry the gasket 17 as shown in Fig. 6 instead of having said gasket secured to the partition, and it is furthermore provided at its upper side with a marginal wall 21, which increases in height from hinge-arm 19 to the point diametrically opposite said arm and forms, in effect, a pocket on the upper side of the trap-door for a purpose which hereinafter appears. Above the half of the trap-door from which the hinge-arm projects, so as to completely cover the latter, is a semicircular guard 22, formed integral with or secured to the casing, the inner edge of said guard being bent upward, as at 23.

24 designates an internally-threaded cap to screw down upon the threaded neck of the casing, said cap being of such diameter that the spring-catches 25 may pass into the neck of the bottle to a point below shoulder 3, the upper ends of said spring-catches flaring outwardly from the cap, so as to snap under said shoulder after such passage, the springs being obviously pressed flatly against the cap while passing the flaring surface 4, as will be read-

ily understood, and said catches are riveted, as shown at 26, or otherwise rigidly secured to the cap.

27 designates a substantially semicircular guard-partition for the cap, said partition being connected to the latter by the marginal flange 28. The partition is of such area and the flange 28 of such depth that the guard occupies a position about half-way between the top of the cap and partition 22 and, like the latter, terminates in a bent edge 29, which projects in the opposite direction from the bent edge of partition 22. The top of the cap is provided with numerous fine perforations in that half overlying the partition 27, so that it will be practically impossible for a person to introduce a wire through one of said perforations and bend the same around partition 27, back between said partition and partition 22, and then downward to engage with and lift the trap-door from its seat, so as to hold said trap-door unseated and introduce a liquid into the bottle. It is understood that the trap is held from accidentally opening by the spring 31 or its equivalent, said spring projecting through the opening 16 and being secured at one end to the trap-door and pressing at its opposite end against the normally under side of partition 15.

To assemble the parts in operative relation, the gasket 5 is first forced down upon shoulder 2 and the ball or weight deposited in the bottle, and then the casing has the cap screwed thereon until the partitions occupy the relative position explained, it being apparent that partition 27 does not conflict with partition 22 in this action, because the bent end of the former never gets below the bent end of the latter. The casing is now forced down into the bottle, its lower end compressing gasket 5 slightly to permit the spring-catches to snap under shoulder 3, the resiliency of the gasket also pressing said springs tightly against the shoulder, so as to hold the casing rigidly in the bottle, as will be readily understood. The usual cork (not shown) is then inserted in the bottle, which is of course charged with the liquid before the non-refillable attachments are assembled, as explained. To pour out the contents of the bottle after the cork referred to has been removed, the bottle is simply inverted. When it contains a large quantity of the liquid, the weight of the latter will be sufficient to open the trap-door, the liquid then passing between the partitions 22 and 27 and out through the perforated top of the cap. By reversing the position of the bottle the trap-door resumes its seat, as will be readily understood. When the bottle contains only a small quantity of liquid, it will cooperate with the ball or weight in unseating the trap-door, the momentum of the ball as it rolls downward and into the conical bottom of the casing against the push-rod being sufficient

to force the latter to unseat the trap-door, the weight obviously holding the trap-door open until as much of the contents have been poured off as is desired.

It will be impossible to recharge this bottle under pressure, as the pressure of liquid forced against the trap-door will cause the latter to bind more tightly upon its seat. It will furthermore be apparent that liquid thus introduced will be concentrated largely in the pocket of the trap-door, and thus act to more effectively hold the latter to its seat. It will also be clear that it will be impossible to charge the bottle by inverting it and submerging it in that position in liquid, as the air contained in the bottle will prevent the entrance of the liquid, as will be readily understood.

From the above description it will be apparent that I have produced a non-refillable bottle which embodies the features of advantage enumerated as desirable in the statement of invention, and which is obviously susceptible of modification without departing from the principle of construction involved.

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

1. A non-refillable bottle, having an upwardly-disposed shoulder and a downwardly-disposed shoulder; a casing fitting in the neck of the bottle and having a liquid-tight joint therewith, and having a spring-catch engaging the downwardly-disposed shoulder; a perforated partition for the casing; a trap-door yieldingly closing the perforation of said partition and formed with a pocket at its upper side, a perforated cap for the casing; and a partition between the cap and the trap-door and adapted to discharge liquid entering through the perforated cap into said pocket.

2. A non-refillable bottle, having an upwardly-disposed shoulder and a downwardly-disposed shoulder, a casing fitting in the neck of the bottle between said shoulders and having a liquid-tight joint with the shoulder first named and provided with spring-catches engaging the other shoulder, a perforated conical bottom projecting up into the casing, a push-rod carried thereby, a perforated partition for the casing, a trap-door yieldingly closing the opening of said partition a perforated cap for the casing, and a weight or ball in the bottle and adapted to enter the conical bottom of the casing and cause the push-rod to unseat said trap-door.

3. A non-refillable bottle having an upwardly-disposed shoulder, and a downwardly-disposed shoulder, a casing fitting in the neck of the bottle between said shoulders and having a liquid-tight joint with the shoulder first named and provided with spring-catches engaging the other shoulder, a perforated conical bottom projecting up into the casing, a perforated partition for the casing, a trap-

door yieldingly closing the opening of said partition and provided with a pocket at its upper side, and a perforated cap for the casing.

4. A non-refillable bottle having an upwardly-disposed shoulder, and a downwardly-disposed shoulder, a casing fitting in the neck of the bottle between said shoulders and having a liquid-tight joint with the shoulder first named and provided with spring-catches engaging the other shoulder, a perforated conical bottom projecting up into the casing, a perforated partition for the casing, a trap-door yieldingly closing the opening of said partition and provided with a pocket at its upper side, a perforated cap for the casing, and overlapping partitions between the top of the cap and the trap-door.

5. A non-refillable bottle, having an upwardly-disposed shoulder, and a downwardly-disposed shoulder, a casing fitting in the neck of the bottle between said shoulders and having a liquid-tight joint with the shoulder first named and provided with spring-catches engaging the other shoulder, a perforated conical bottom projecting up into the casing, a perforated partition for the casing, a trap-door yieldingly closing the opening of said partition, and provided with a pocket at its

upper side, a perforated cap for the casing, and overlapping partitions between the cap and the trap-door, said partitions having their overlapping ends bent toward each other with the upper one completely underlying the perforations of the cap.

6. A non-refillable bottle, having an upwardly-disposed shoulder and a downwardly-disposed shoulder; a casing fitting in the neck of the bottle and having a liquid-tight joint therewith, and having a spring-catch engaging the downwardly-disposed shoulder, a perforated partition for the casing; a trap-door yieldingly closing the perforation of said partition and formed with a pocket at its upper side, a perforated cap for the casing, a partition between the cap and the trap-door and adapted to discharge liquid entering through the perforated cap into said pocket, and weight-actuated means for unseating the trap-door when the bottle is sufficiently inverted.

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

WILLIAM ROBINSON.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.