No. 807,966. PATENTED DEC. 19, 1905.

L. A. ROBERTSON.

NON-REFILLABLE BOTTLE.

APPLICATION FILED OCT. 29, 1904.

Fig. 2.

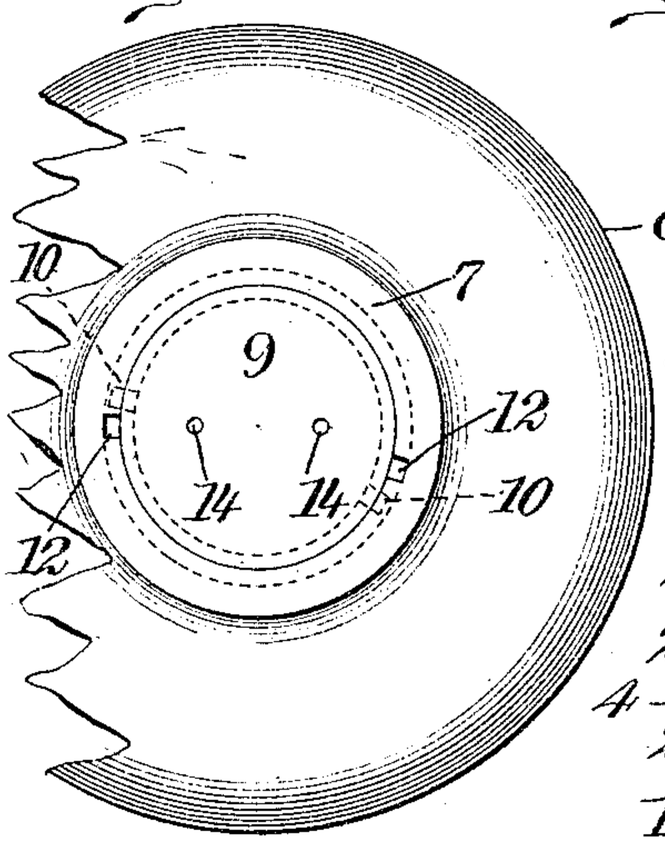


Fig. 1.

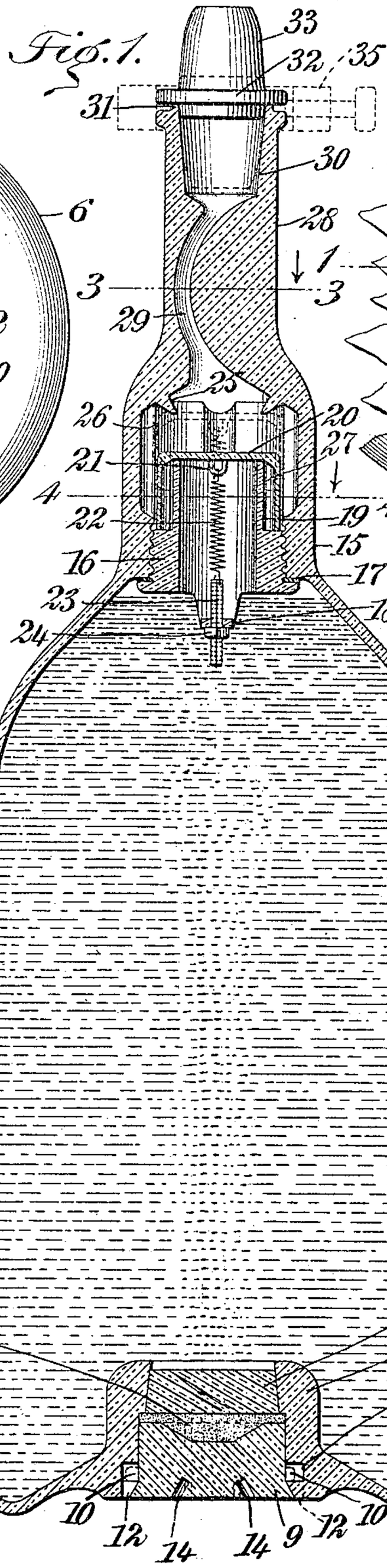


Fig. 4.

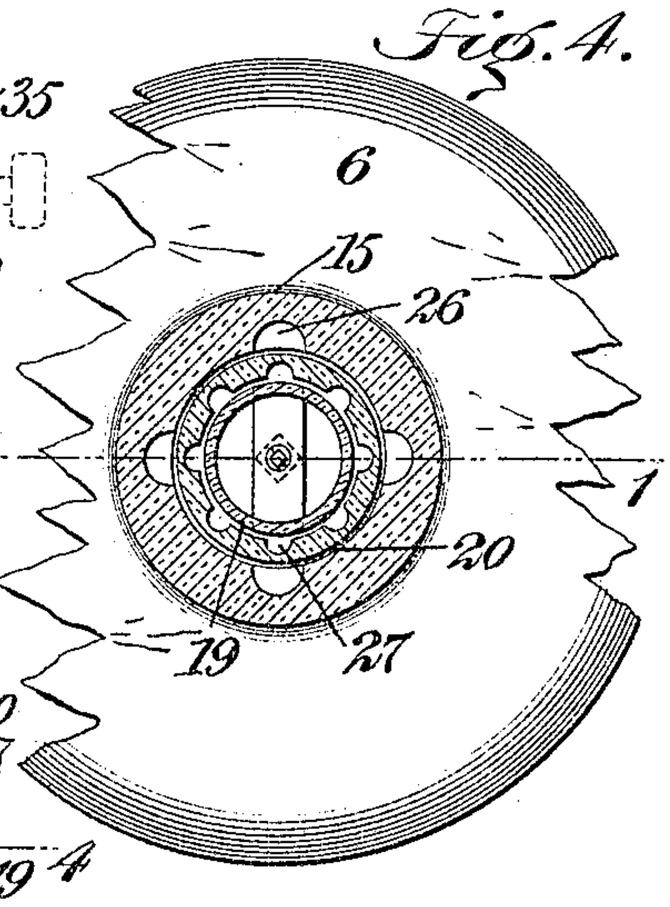


Fig. 5.

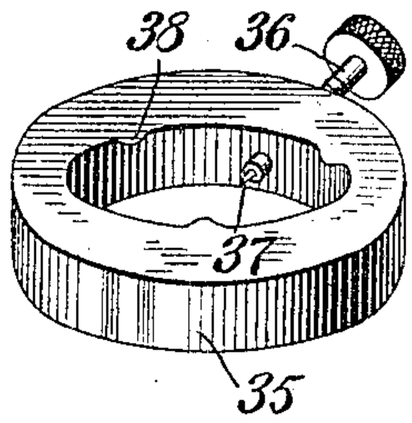


Fig. 3.

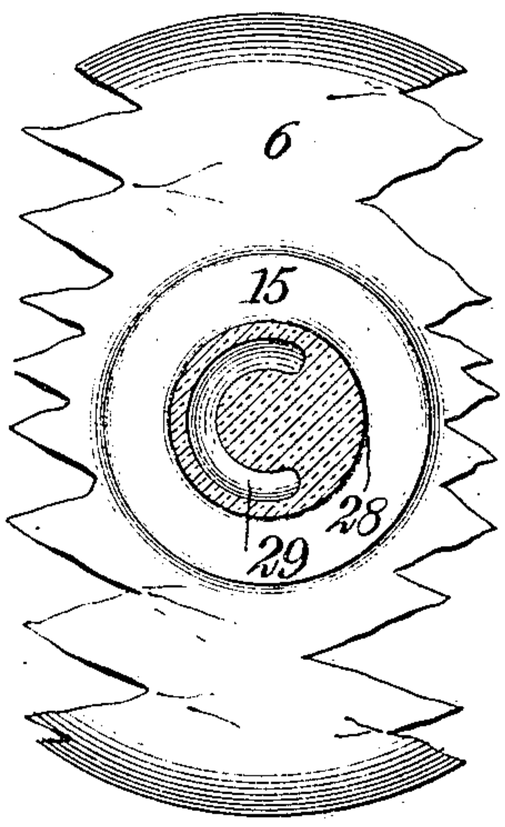
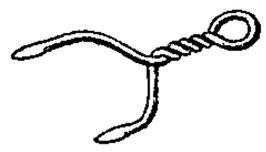


Fig. 6.



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LAWRENCE A. ROBERTSON, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

No. 807,966. Specification of Letters Patent. Patented Dec. 19, 1905.

Application filed October 29, 1904. Serial No. 230,517.

To all whom it may concern:

Be it known that I, LAWRENCE A. ROBERTSON, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county 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.

My invention relates to non-refillable bottles and analogous receptacles used for storing liquids, my more particular object being to prevent the substitution of one liquid for another in said receptacles.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section through a bottle equipped with my invention. Fig. 2 as a fragmentary inverted plan or bottom view of the bottle. Fig. 3 is a horizontal section upon the line 3 3 of Fig. 1 looking in the direction of the arrow, showing the form of passage employed in the bottle-neck. Fig. 4 is a horizontal section upon the line 4 4 of Fig. 1 looking in the direction of the arrow, showing certain details of the valve mechanism; and Fig. 5 is a perspective view, slightly enlarged, of the mechanism used for opening the bottle. Fig. 6 shows a key for opening the bottle.

The body portion of the bottle is shown at 6, and integrally connected with it is a comparatively thick annular portion 7, disposed centrally of the bottom of the bottle. A plug 8 of frusto-conical form and made, preferably, of glass is encircled by the annular portion 7. Another plug 9 is provided with beads 10, projecting radially therefrom in an endless passage 11 within the thick portion 7 of the bottom. Apertures 12 serve to admit the beads 10 when the plug 9 is inserted in position. A filling 13, of adhesive material, preferably plaster-of-paris, is inserted between the plugs 8 and 9. After the plug 9 is inserted a little liquid plaster may be rubbed over the junction between this plug and the thick portion 7, so as to insure thorough adhesion between the plug 9 and the portion 7 of the bottom. An enlargement 15 is threaded internally and fitted with a threaded plug 16, which is screwed into the same from below, and a washer 17 is inserted between these parts. The plug 16 is provided with a bridge 18 and with a cylindrical portion 19. Encircling the portion 19 is a cap 20, provided with an eye 21. A spring 22 connects this eye with a threaded stem 23, the latter being angular, and a nut 24 engages this stem and is employed for tensioning the spring 22. The stem 23 does not rotate and is merely moved in the general longitudinal direction of its axis as the nut 24 is turned. The stem 23 is square, so that when its four corners are engaged by the nut the square form of the stem prevents it from being rotated within the bridge 18, which is of course provided with a square aperture through which the stem is loosely threaded. A number of lugs 25, cast integrally with the enlargement 15, serve as limiting-stops for the movement of the cap 20 in one direction, as may be understood from the dotted lines shown in Fig. 1. This enlargement 15 is provided internally with channels 26, and the cap 20 is also provided internally with channels 27, as may be understood from Fig. 4.

The neck of the bottle is shown at 28 and is provided with an arcuate passage 29, having the cross-section shown in Fig. 3. The curvature of this passage prevents the entrance of a knife, rod, or other penetrating instrument which might otherwise be inserted downwardly through the neck. The upper portion of the neck 28 is provided with a passage 30. Integrally mounted upon the neck 28 is a head 32, separated therefrom by a comparatively thin collar 31, integral therewith. The head 32 is provided with a portion 33, also integral therewith.

The several parts are assembled as follows: The body portion 6, the enlargement 15, the neck 28, and the head 32 are blown or cast integrally with each other, so that the filling of the bottle from the bottom thereof is easily accomplished. For this purpose the bottle is inverted. The cap 20 having been placed upon the cylindrical portion 19 of the plug 16 and the spring 22 having been tensioned by means of the nut 24, the plug 16 is screwed firmly into position. The liquid is next poured in from the bottom, the plug 8 is placed in position, the plaster-of-paris or other cement is applied, and the plug 9 is forced upon this cement, the said plug 9 being next turned by means of a key entering the apertures 14, so that the beads 10 pass into the apertures 12 and are moved laterally by a slight turning of the plug 9, as will be understood by the dotted lines in Fig. 2. The plug 9 by its adhesion to the filling 13 and reinforced, if need be, by the entrance of an additional quantity

of the plaster between it and the junction 7 of the bottle is firmly secured in position and cannot be removed without breaking the bottle. A metallic ring 35 is provided with a screw 36, this screw being provided with a diamond-point 37, and said ring is also provided with lugs 38. This ring is the property of the manufacturer and is retained at the factory.

The operation of my device is as follows: The bottle having been filled as above described, a factory employee places the ring 35 upon the head 32, so that the lugs 38 support the ring, as indicated by dotted lines in Fig. 1. The screw 36 is next turned, so as to force the diamond-point 37 into engagement with the collar 31, which is comparatively thin. The ring 35 is next turned by hand, so that the diamond-point makes a slight cut upon the collar 31, rendering the same comparatively weak. The bottle is now shipped to the user and is accompanied by a key, such as that shown in Fig. 6. The key shown is inserted between the head 32 and the bottle-neck proper, and by means of the key the head 32 is now broken off from the neck 28, and the portion 33, which is made, preferably, of ground glass, may be inserted within the passage 30, so as to form a stopper for the bottle-neck. The bottle is now inverted, so as to pour out a portion of the contents. The tension of the spring 22 is such that the cap 20 does not move away from the cylindrical portion 18 until the bottle is thus inverted. When the bottle lies on its side, the tension of the spring 22 prevents the cap 20 from moving toward the neck of the bottle. The bottle being now inverted, the liquid passes through the cylindrical portion 19 in the plug 16, passing back a slight distance through the passages 27, and then passes out through the passages 26, 29, and 30. Any interference with the cap 20 and the mechanism connected immediately therewith is prevented by the shape of the passage 29, for the reason that no instrument can be inserted through this passage.

While preferably my invention is applied to any bottle, I do not limit myself thereto, for obviously the invention may be applied to casks, barrels, and to receptacles of divers other kinds too numerous to mention.

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

1. A non-refillable bottle provided with a chamber threaded internally, a plug threaded externally and fitted into said enlargement, valve mechanism connected with said plug, means for tensioning said valve mechanism, and mechanism for preventing accessibility to said valve mechanism.

2. A non-refillable bottle, comprising a neck provided with a chamber, a cylindrical member within said chamber, a cap having a cylindrical portion encircling said cylindrical member, said cylindrical portion being provided with passages, means for limiting the movement of said cap in one direction, and a spring for tensioning said cap in the opposite direction.

3. In a non-refillable bottle, the combination of a neck provided with a chamber and with a passage merging into said chamber, a cylindrical member within said chamber, a cap mounted loosely upon said cylindrical member and movable relatively thereto, means for limiting the play of said cap in one direction relatively to said cylindrical member, a spring for tensioning said cap, and means for adjusting the tension of said spring.

4. A non-refillable bottle, comprising a body portion provided with a chamber and with an exit-passage merging into said chamber, a cylindrical member mounted within said chamber, a cap loosely encircling said cylindrical member and adapted to move relatively thereto, lugs for limiting the movement of said cap in one direction, and spring mechanism connected with said cap and tending to draw the same in the opposite direction.

5. In a non-refillable bottle, the combination of a neck provided with a chamber and with a crooked passage-way communicating with said chamber, an annular screw-plug mounted within said neck and partially obstructing said chamber, a cap mounted upon said annular screw-plug and adapted to move relatively thereto, and means for limiting the movement of said cap relatively to said plug.

6. In a non-refillable bottle, the combination of a neck threaded internally, an annular screw-plug threaded externally and fitted into said neck, valve mechanism connected with said screw-plug for opening and closing the same, and means for limiting the play of said valve mechanism.

7. In a non-refillable bottle, the combination of a neck provided with a chamber and with a passage-way communicating with said chamber, an annular screw-plug mounted within said neck and inaccessible to persons manipulating the bottle, and valve mechanism connected with said screw-plug for opening and closing the same.

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

LAWRENCE A. ROBERTSON.

Witnesses:
WALTON HARRISON,
EVERARD BOLTON MARSHALL.