H. B. RODGERS & W. S. RICHTER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAR. 24, 1908. RENEWED MAY 7, 1910.

**997,094.** **Patented July 4, 1911.**

Fig. 1.

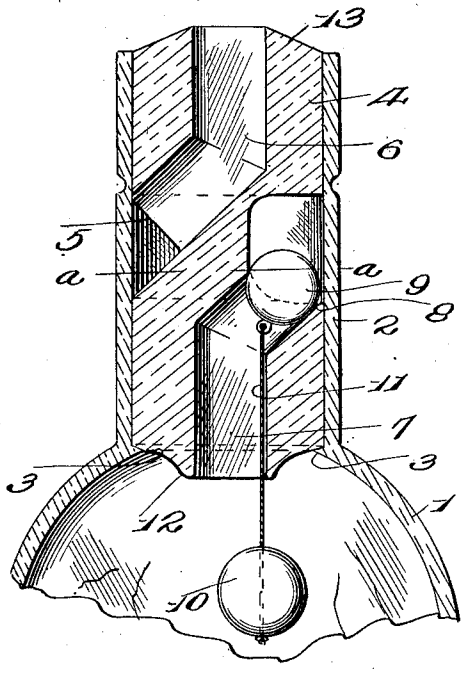



Fig. 2

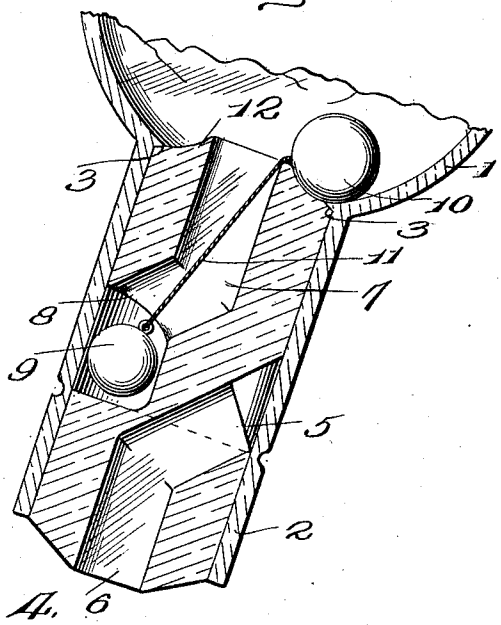



Fig. 3

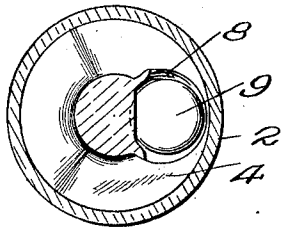
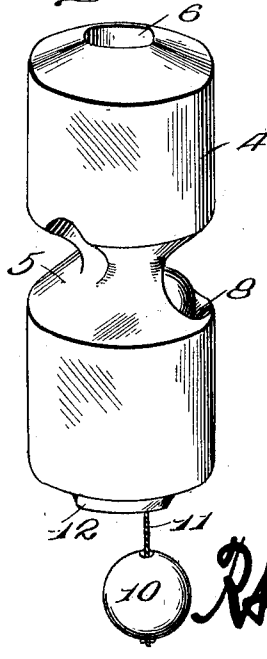



Fig. 4.




Witnesses:

Jno. Thwaite

W. A. Hodson.

Inventors

H. B. Rodgers

W. S. Richter

By Howard Kacy, Attorneys

# UNITED STATES PATENT OFFICE.

HARRY B. RODGERS AND WILLIAM S. RICHTER, OF CHAMBERSBURG, PENNSYLVANIA, ASSIGNORS TO DOUGLAS R. WARFIELD AND JULIAN L. EYSMANS, OF CHAMBERSBURG, PENNSYLVANIA.

## NON-REFILLABLE BOTTLE.

997,094. Specification of Letters Patent. **Patented July 4, 1911.**

Application filed March 24, 1908, Serial No. 422,956. Renewed May 7, 1910. Serial No. 560,064.

*To all whom it may concern:*

Be it known that we, HARRY B. RODGERS and WILLIAM S. RICHTER, citizens of the United States, residing at Chambersburg, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention contemplates certain new and useful improvements in non-refillable bottles, and the object of the invention is an improved stopper which is designed to be secured in the mouth of the bottle to control the same so as to permit the contents of the bottle to escape freely from the mouth but to effectually prevent any liquid from being subsequently injected into the bottle to fraudulently refill the latter.

With this and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that we shall hereinafter fully describe and claim.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the accompanying drawing, in which:

Figure 1 is a vertical section of the upper portion of our improved non-refillable bottle, showing the latter in an upright position; Fig. 2 is a similar view showing the position of the valve element when the bottle is tilted to a pouring position; Fig. 3 is a section on the line *a*—*a* of Fig. 1; and, Fig. 4 is a detail view in perspective of the stopper.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing, by the same reference characters.

Our improved stopper is designed to be applied to an ordinary bottle, the body portion 1 of which is provided with a neck 2 leading therefrom, the neck being formed at its juncture with the body portion with an interior annular ridge constituting an upwardly facing shoulder 3. The stopper 4 is cylindrical in shape so as to conform to the contour of the inner surface of the neck 2, and is designed to be cemented or otherwise secured therein, after the bottle has been filled, with the marginal portion of its lower end abutting against the shoulder 3 to prevent the stopper from being pushed through the neck 2 into the body portion of the bottle. This stopper is constructed of glass or the like, and is formed in its periphery, intermediate of its ends, with a transversely extending annular channel 5, a tubular opening or passage 6 leading centrally from the upper end of the stopper and extending downwardly therefrom through the upper portion of the stopper, with its lower end offset obliquely laterally and in communication with the channel 5. A tubular passage 7 leads centrally from the lower end of the stopper and extends upwardly therethrough, with its upper end deflected obliquely laterally and communicating with the channel 5 at a diametrically opposite point to the opening 6, the upper end of said passage being preferably flared to form a downwardly tapering valve seat 8. This seat is adapted to be closed by a ball valve 9 which is preferably of less specific gravity than the liquid contained in the bottle, although not necessarily so. The ball valve may be constructed of aluminum, glass, glass and cork combined, or of any other suitable material or materials of a non-corroding nature. The ball valve may be normally held seated in any approved manner, although the preferred means for effecting this result, includes a weight 10 which is of any suitable shape and is secured to the ball valve by means of a flexible connection 11 passing through the passage 7. The weight is movable freely within the body portion 1 of the bottle and is of greater diameter than the passage 7 so as to be prevented from moving into the same, the weight being normally suspended below the lower end of the stopper so as to exert the desired tension on the valve.

The lower end of the stopper 4 is tapered downwardly so as to extend into the body portion of the bottle and form an annular shoulder 12 facing the wall thereof, the upper end of said stopper being also tapered, as indicated at 13, and extending beyond the upper end of the neck 2 to constitute a spout so as to permit any liquid discharged through the opening 6 to be more conveniently poured into the desired receptacle.

In the practical use of our improved non-refillable bottle the latter is inverted, and when in an inverted or nearly inverted position, the weight 10 is supported entirely upon the wall of the body portion 1 of the

bottle, and thus exerts no tension upon the flexible connection 11, but permits the ball valve 9 to fall from its seat 8 to open the latter and establish communication between the interior of the bottle and the mouth portion thereof, the liquid in the bottle flowing through the passage 7 into the channel 5, and being then discharged through the opening 6. The shoulder 12 prevents the weight 10 from rolling over the passage 7 to close the latter when the bottle is in an inverted position. Any attempt to siphon or otherwise inject liquid into the bottle when the latter is in an inverted position, is frustrated, since the ball valve 9 will thus be forced against its valve seat 8 to effectually close the latter. When the bottle is in an upright position or any position intermediate of the same and a substantially inverted position, the weight 10 obviously serves to hold the ball valve 9 securely seated. The peculiar construction of the opening 6 and the channel 5 serves to baffle any attempts to tamper with the valve elements, by inserting an instrument through the opening 6 to raise the ball valve 8 from its valve seat.

It is to be understood that if it is more convenient to fill the bottle after the stopper 4 has been secured therein, a flexible wire may be detachably connected to the ball valve 8 before the stopper is secured in position, and may be manipulated to raise the ball valve to permit the bottle to be filled, said wire being then withdrawn.

From the above description, in connection with the accompanying drawing, it will be apparent that we have provided a simple, durable and efficient construction of device, which may be readily applied to a bottle, which effectually prevents the latter from being refilled even when the bottle is submerged in liquid or subjected to pressure, and which consists of comparatively few parts that may be quickly assembled and easily and cheaply manufactured.

Having thus described the invention, what we claim is:

A bottle stopper comprising a plug of uniform diameter throughout and adapted to be secured in the neck of a bottle, said plug having a sinuous passage of substantially uniform area therethrough with a valve seat intermediate the ends of the same, said plug being further provided with an extension at the inner end and surrounding the lower end of the passage, a valve within said passage and operating to close the lower portion thereof, a combined weight and stop, and a flexible element connecting the stop and valve and extending through the lower portion of the passage and operating to engage the extension when the bottle is inverted, and also operating to prevent the escape of the valve, but permitting it to move laterally and avoid obstructing the outflow of the material.

In testimony whereof we affix our signatures in presence of two witnesses.

HARRY B. RODGERS. [L. S.]
WILLIAM S. RICHTER. [L. S.]

Witnesses:
WILLIAM LOCHBAUM,
J. H. SOLLENBERGER.