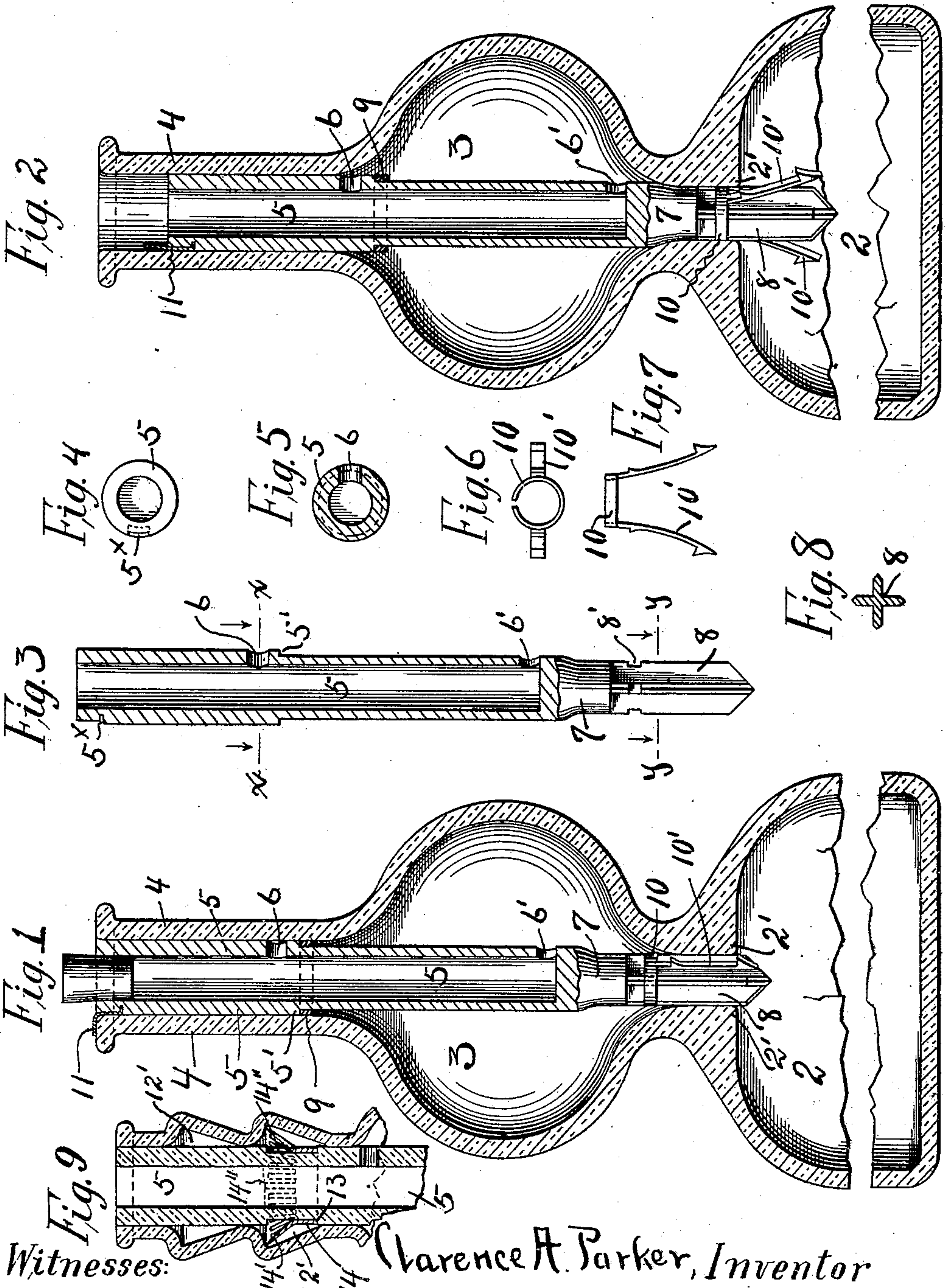


No. 870,312.

PATENTED NOV. 5, 1907.

C. A. PARKER.
NON-REFILLABLE BOTTLE.
APPLICATION FILED APR. 23, 1907.



Witnesses:

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UNITED STATES PATENT OFFICE.

CLARENCE A. PARKER, OF CRAIGSVILLE, NEW YORK.

NON-REFILLABLE BOTTLE.

No. 870,312.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed April 23, 1907. Serial No. 369,736.

To all whom it may concern:

Be it known that I, CLARENCE A. PARKER, a citizen of the United States, residing at Craigsville, in the county of Orange, State of New York, 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 more particularly to a bottle characterized by having therein means to permit the pouring out of a portion of the contents only, and the closure of the main portion of the bottle before the remainder of its contents may be withdrawn.

The object of my invention is to provide a bottle of this character of an extremely simple form, having no parts liable to become clogged or inoperable, and which when in the final position absolutely prevents the refilling of the bottle.

To this end my invention consists in the construction and arrangement of parts shown in the accompanying drawings and definitely stated in the appended claims.

In the drawings, Figure 1 is a longitudinal section of a bottle, the outlet tube being in its first position. Fig. 2 is a longitudinal section showing the said tube in its final position. Fig. 3 is an elevation of the shiftable outlet tube, partly in section. Fig. 4 is a top end view of the tube. Fig. 5 is a section on line $x-x$, Fig. 3. Fig. 6 is a top view of spring catch. Fig. 7 is a side view thereof, and Fig. 8 is a section on line $y-y$ of Fig. 3. Fig. 9 is a longitudinal section of the bottle neck showing a modification of my latching device for the central tube.

Like numerals in all the views designate like parts.

2 designates the body or bottle of any desired form or character and 3 an enlargement or bulb formed in the neck thereof, and having a capacity equal to half that of the bottle itself. A comparatively small and preferably tapering passage connects the bulbous portion 3 with the body 2. A shoulder 2' square in section, is formed at the junction of the passage with the body 2. At its upper end the bulb 3 extends upward in a neck 4 of the usual character.

5 designates a tube preferably of glass, which fits snugly but not tightly in the neck of the bottle and is of sufficient length to extend down into the bulb and nearly to the bottom thereof. This tube in itself is shown in Fig. 3. The upper portion of the tube is of sufficient diameter to fit snugly within the neck, but at a distance about equal to the length of the neck it is reduced. Thus a shoulder 5' is formed against which fits a packing ring 9 of cork or other suitable material which, when the tube is in its uppermost position fills the space between the tube and the neck, and effectually prevents the passage of liquid between the neck and tube. Just above the shoulder 5' the tube is formed with an outlet opening 6.

The lower end of the tube is closed and is continued downward in the form of a plug 7 adapted to fit in and close the tapered passage connecting the bulb and body of the bottle. Just above the plug 7 is an inlet opening 6'.

Below the plug 7 there is formed the bladed portion 8. This consists of a number of radially projecting wings, as shown in cross section Fig. 8, having a relatively sharp edge to contact with the side of the adjacent passage. At the upper ends each wing is recessed as at 8' for engagement with the ring 10 of a spring catch device. This comprises a split ring from which project the downwardly and outwardly extending prongs 10' having detent teeth or barbs thereon, which are adapted to engage with the shoulder 2'.

At its upper end the tube 5 is recessed as at 5^x to accommodate and hold a spring 11. This spring at its lower end is bent inward at right angles to engage in the slot formed at the lower end of recess 5^x and the upper end of the spring is bent outward to contact with the top of the neck, as in Fig. 1. This spring acts to support the tube 5 and prevent its being forced down into the neck unless this is desired. When the tube is so forced down, the spring 11 straightens out as shown in Fig. 2 and contacting with the interior of the neck, acts in addition to the barbs on the catch device to prevent the withdrawal of the tube 5.

The operation of my device is as follows: The tube 5 when the bottle is filled is in the position shown in Fig. 1 and the outlet opening 6 is out of communication with the bulb 3. On inverting the bottle the liquid in the body thereof passes into the bulb, past the wings 8 and between the wall of the bulb and the plug 7. The liquid will first fill the lower part of bulb 3 and not until it has done so and risen to the level of the opening 6' will the liquid flow into tube 5 and so out of the bottle. Liquid will continue to flow out until the level in the bulb is reduced to below the opening 6'. If now the bottle be turned up, the liquid in the bulb flows back into the body 2. Another reversal of the bottle will merely fill bulb 3 up to the outlet 6', but no liquid can pass into tube 5 and so out, until the tube 5 be forced further into the bottle neck and into the position shown in Fig. 2. This brings the opening 6 into the lower end of bulb 3 and closes the passage from the bulb to the body of the bottle. The liquid in the bulb will pass out of the opening 6 and so out of the neck and the bottle will be emptied. When the tube 5 is in its first position the lower barbs of the springs 10' engage with shoulder 2' to prevent the further withdrawal of the tube. When the tube is forced into its second position, the upper barbs will catch against the said shoulder, thus absolutely preventing the withdrawal of the tube and the consequent unstopping of the body of the bottle.

In Fig. 9 I show a modification of the construction described before, which consists in latching the tube 5

against upward movement by the spring catches which surround the upper portion of the tube and engage with the neck of the bottle, in place of being at the lower end of the tube and engaging with the shoulder 2'. In this construction 12 designates the neck of the bottle provided with circumferential recesses 12', one above the other. The upper side of each recess is at right angles to the axis of the neck and from thence inclines downwardly and inwardly to the inner plane of the neck.

10 The tube 5' is recessed on its circumference as at 13 for the reception of a ring 14, the upper portion of which is formed with upwardly and outwardly projecting springs 14', the upper ends of the springs being adapted to engage with the under side of the shoulder formed by the recesses 12'. It will thus be seen that the springs and recesses form practically a pawl and ratchet.

In the original position of the tube 5, the spring fingers on the ring engage with the upper recess just as the lower barbs of the springs 10' engage with the shoulder 2'. Thus it is impossible to withdraw the tube 5. When part of the contents of the bottle have been poured out, as before explained, the tube 5 is forced down to its lowermost position (that shown in Fig. 9) and the spring fingers engage with the lower recess, thus absolutely preventing the withdrawal of the tube or its replacement to its old position.

It will be noted that the fingers formed upon the ring 14 are of unequal height. Certain ones of these fingers as 14'' are upward continuations of the ring and the others are bent out to form the springs 14'. The vertical fingers 14'' engage in the recess 13 to hold the ring 14 in place. The other fingers project outwardly to engage with the recess 12' of the bottle neck.

It will be obvious that in place of the circumferential recesses and the circumferential ring 14 and its fingers, recesses of the same shape but not extending entirely around the bottle may be provided and the tube be provided with outwardly projecting springs opposite each of these recesses.

40 In Fig. 9 the tube 5 is adapted to project above the top of the bottle prior to the pouring out of the contents of the first portion thereof and is forced down to a level with the top of the bottle neck when in position for the pouring out of the second part of the contents. This is not a necessity of the construction shown in Fig. 9 but is simply to illustrate the fact that the tube 5 in any form of my bottle might be of such length as to protrude beyond the mouth of the bottle when in the first position and to come down flush with the bottle mouth when in the second position instead of being arranged as in Figs. 1 and 2.

Having described my invention what I claim is:

1. A non-refillable bottle comprising a body portion and a bulbous portion connected thereto by a passage, a neck and a downwardly movable outlet tube extending through said neck and into the lower part of said bulbous portion, said tube carrying a stopper for the body portion at its lower end and being formed with inlet openings at its lower end above the stopper and above the lower end at a distance therefrom slightly less than the length of the said bulbous portion and means for preventing the withdrawal of the tube from the bottle.

2. A non-refillable bottle comprising a body portion, a bulbous portion and a neck, a downwardly movable outlet

65 tube extending through said neck and bulbous portion and carrying a stopper at its lower end to close the body portion and having inlet openings at the lower end and at a distance from the lower end slightly less than the length of said bulbous portion, and an outwardly opening spring latch carried at the lower end of the tube below the stopper thereof adapted to engage with the wall of the body portion and prevent the withdrawal of said central tube.

3. A non-refillable bottle comprising a body portion, a bulbous portion and a neck, a downwardly movable outlet tube extending through said neck and bulbous portion, a stopper at its lower end to close the body portion and having inlet openings at the lower end and at a distance from the lower end slightly less than the length of said bulbous portion, said tube below the stopper being extended in the form of ribs adapted to engage with the walls of the passage leading from the body portion to the bulbous portion, and a ring surrounding said ribs provided with downwardly and outwardly extending resilient fingers having barbs thereon adapted to engage with the body portion of the bottle to prevent the withdrawal of said tube.

4. A non-refillable bottle comprising a body portion, a bulbous portion and a neck, a downwardly movable outlet tube extending through said neck and bulbous portion and carrying a stopper at its lower end to close the body portion and having inlet openings at the lower end and at a distance from the lower end slightly less than the length of said bulbous portion, said tube below the stopper being extended in the form of ribs adapted to engage with the walls of the passage leading from the body portion to the bulbous portion, a ring surrounding said ribs provided with downwardly and outwardly extending resilient fingers, said fingers having upper and lower barbs thereon adapted to successively engage with the body portion of the bottle when the tube is in its uppermost position, and when it is in its lowermost position to prevent the withdrawal of said tube.

5. A non-refillable bottle comprising a body portion, a bulbous portion and a neck, a downwardly movable outlet tube extending through said neck and bulbous portion, having the upper portion thereof fitting said bulbous portion and being reduced below to form a shoulder, packing carried against said shoulder, the lower end of said tube having a stopper to close the body portion, and having inlet openings at the lower end and at a distance from the lower end slightly less than the length of said bulbous portion, said tube below the stopper being extended in the form of ribs adapted to engage with the walls of the passage leading from the body portion to the bulbous portion, a ring surrounding said ribs provided with downwardly and outwardly extending resilient fingers, said fingers having upper and lower barbs thereon adapted to successively engage with the body portion of the bottle when the tube is in its uppermost position, and when it is in its lowermost position to prevent the withdrawal of said tube.

6. In a non-refillable bottle, a body portion, a bulbous neck above the body portion and a neck above the bulbous portion, a central downwardly movable tube extending through the neck and bulbous portion, outlet openings through the wall of said tube at a distance from each other slightly less than the length of the bulbous portion and so arranged that when the tube is in its upward position the upper outlet is closed and when in its lowermost position the upper outlet opens into the bulbous portion, a stopper carried on the lower end of the tube adapted to close the passage between the bulbous portion and the body portion, removable means for preventing the depression of said tube, and means for preventing the withdrawal of said tube after its depression.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this ninth day of April 1907.

CLARENCE A. PARKER.

Witnesses:

B. C. DURLAND,
A. R. CONKLIN.