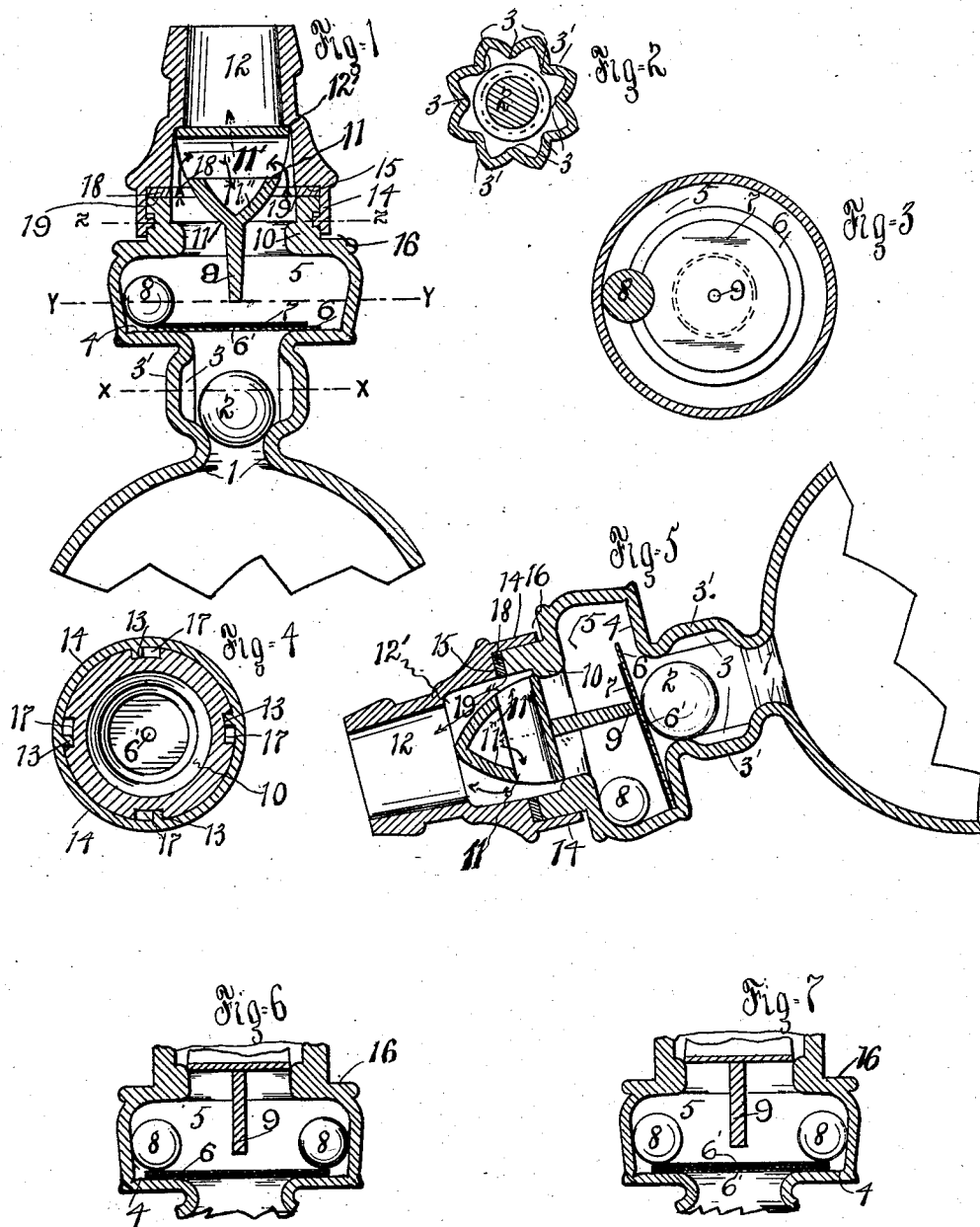


(No Model.)

W. H. PAYNE.
NON-REFILLING BOTTLE DEVICE.

No. 567,281.

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WITNESSES:

Barney B. Cadwallader
A. W. Budd

INVENTOR

W. H. Payne
Wm. H. Payne

UNITED STATES PATENT OFFICE.

WILLIAM H. PAYNE, OF CAMDEN, NEW JERSEY, ASSIGNOR TO ZACHARIAH K. LOUCKS, OF PHILADELPHIA, PENNSYLVANIA.

NON-REFILLING-BOTTLE DEVICE.

SPECIFICATION forming part of Letters Patent No. 567,281, dated September 8, 1896.

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To all whom it may concern:

Be it known that I, WILLIAM H. PAYNE, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Non-Refilling-Bottle Devices; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable others skilled in the art to make and use the said invention.

This invention relates to non-refilling bottles, and has for its object the prevention of the clandestine refilling of bottles or like vessels; and to this end it consists in an arrangement of valve-seats and valves, a weight for enforcing the closing action of the valves, a guard or check limiting the motion of the valve, and a guard to prevent access to the valve, in combination with a bottle-neck formed of parts whereby the several internal parts may be assembled and operatively connected with each other.

The construction of this device is shown in the accompanying drawings and is hereinafter particularly described.

Referring to the drawings, Figure 1 shows a vertical section. Fig. 2 shows a horizontal section in the plane marked X X in Fig. 1; Fig. 3, a horizontal section in the plane marked Y Y in Fig. 1. Fig. 4 shows a horizontal section in the plane marked Z Z in Fig. 1. Fig. 5 shows the bottle in position for pouring or decanting and illustrates the positions of the valves in this operation. Fig. 6 shows a view of the valve-chamber with several imperforate disk valves therein, and Fig. 7 a like view of the same part with alternate perforated and imperforate valves therein.

This device being applicable to any form of bottle, only the upper portion of the body of the bottle is shown.

1 represents a lower valve-seat; 2, a spherical valve arranged to seat itself by gravitation in said seat and guided by parallel ribs 3 in the portion of the neck marked 3'.

4 is a flat shoulder forming a valve-seat above the portion of the neck 3', and 5 is an expanded chamber above said shoulder.

6 is a flat valve which lies, when closed, upon

the shoulder 4, and may be made of any thin material innocuous to the fluid contained in the bottle. Glass or porcelain will answer, but mica is found to be a preferable material. In the center of the valve 6 is a perforation or vent 6'. Above the valve 6, and covering the perforation 6', is a second smaller disk, of like material, (marked 7,) which covers the vent 6'. The vent or perforation 6' is useful in facilitating the prompt opening of the valve in pouring from the bottle by admitting the atmosphere to the under side of the valve. Several disk valves 6 and 7 may be used either alternately perforated or imperforate with like effect.

A rolling weight or ball 8 is placed in the expanded chamber 5 and serves by its weight to press down and hold the valves 6 and 7 in closed position when the bottle is erect, and when inclined or inverted for pouring rolls to the side of the expanded chamber 5 and permits the valves 6 and 7 to open when the ball valve 2, then resting against the under side of the valve 6, opens it. A stem 9 projects downwardly from a guard 11 centrally in the chamber 5 and serves to limit the opening motion of the valves 6 and 7.

More than one rolling weight 8 may be used in the chamber 5, and several disk valves may be used to insure closure and determine the direction of the opening motion of the valve 6. The weights resting always at the lowest side of the chamber in the pouring operation hold that edge of the valve in the lower corner of the chamber, and the upper side of the valve consequently is widely opened.

The dimensions of the valve 6 diametrically should be such that when placed eccentrically with one edge contacting with the side of the chamber 5 the other edge will cover and overlap the opposite edge of the shoulder or valve-seat 4.

The dimensions of the upper valve 7 should be such that when the edge of it contacts with the side of the chamber 5 a portion of it shall cover and close the vent or aperture 6' in the valve 6.

Above the chamber 5 is a contraction 10, which supports the guard 11, which guard

may be of any form which will prohibit the access by tools or implements to the valve below.

The guard should be of larger diameter than the inside of the upper section of the neck, a shoulder 12' holding the guard down so that it cannot be displaced without a severance of the parts of the neck.

The form depicted in the drawings shows two gothic arches 11' and 11'', the lower one 11'' being inverted and having fluid intercommunication as follows: to flow outwardly, passing upwardly to enter the openings in the ends of the upper arch 11' and downwardly from the center of the upper arch 11' into the center of the lower inverted arch 11'', and upwardly from the openings in the ends of the lower inverted arch 11'' to the upper neck 12 for discharge, as indicated by the direction of the arrows. The upper neck (marked 12) is formed with an enlarged lower portion 14, having a shoulder 15 in it, against which a cork or other compressible washer 18 rests, fitting on the upper end 19 of the lower part of the neck, which serves to seal the joint between the upper and the lower necks.

Angular grooves 17, (see Fig. 4,) of the form known as a "bayonet-joint" or "bayonet-clasp" are formed in the side of the lower neck, and projections 13, formed in the inside of the expanded portion 14 of the upper neck 12, are fitted to engage therein, and by pressing them downwardly and turning the part 12 engage the recesses 17 and serve to hold the parts of the upper and lower necks together, at the same time compressing the cork washer into the fluid-tight contact between the parts of the neck.

A rim and shoulder 16 is formed on the lower neck, below the enlarged part 14 of the upper neck, so that when the upper neck is placed upon it it may contact therewith, the cork washer 18 being at that time under compression, and by introducing insoluble cement between the lower and upper portions of the neck they are fastened securely to each other, and cannot be detached without breaking.

The cork washer 18 prevents the cement from any contact with the fluid in the bottle. The upper portion of the bottle-neck is adapted for the insertion of the usual cork or stopper.

By inspecting Fig. 5, in which the bottle is shown in position for decanting, it will be seen that the ball 2 has rolled away on the guides 3 from the seat 1, and pressing against the valve 6 has opened it, and at the same time the ball 8 lies in the side of the expanded chamber 5, and the valves 6 and 7 rest against the projecting stem 9, so that the passage for outflow of liquid is around the ball valve 2, between the guides 3, through the valve-seat formed by shoulder 4, passing the valve 6 and through the guard 11, and thence through the neck, which is open and free, but upon plac-

ing the bottle in an erect position the valves 6 and 7 are closed by the rolling weight or weights 8, as is also the valve-seat 1 by the valve 2, and access to the valves 6 and 7 is precluded by any implement by the interposition of the guard 11.

The disk valve 7 may be omitted, in which case the valve 6 should not be perforated at 6', as above described; but it is preferable to have the aperture 6', as experience has shown that greater celerity of opening and seating the valve 6 is had with the perforated valve 6 and superposed valve 7.

Having described my invention and the operation thereof, what I claim is—

1. In a non-refilling-bottle device, a bottle-neck, provided with a lower valve-seat, a lower valve fitted to said seat, guides directing the opening and closing motion of said valve thereon, a second superposed valve-seat, a flat perforated valve arranged to open upward, and close downwardly on said second valve-seat, a flat imperforate valve superposed on said perforated valve, a chamber surrounding said valve-seat and one or more rolling weights, superposed on said flat valves and inclosed in said chamber, in combination with a guard arranged to prevent access to the valves by implements, a central downward projection arranged to limit the opening motion of said flat valves, an upper neck-section of less internal diameter in the outlet than said guard, arranged to inclose and secure said guard in position, and a compressible gasket between the neck-sections, arranged to make a fluid-tight joint, all arranged to operate as set forth.

2. In a device for preventing the clandestine refilling of bottles, a bottle-neck, a valve-seat therein, a perforated disk valve and a superposed imperforate disk valve, one or more weights arranged to roll upon and close said disk valves, and an expanded chamber inclosing said weight and valve, in combination with a superposed guard, having a central projection arranged to limit the rising motion of said disk valve or valves, a lower valve or weight arranged to open said disk valve during decanting from the bottle, and a superposed section of the neck of less diameter than the guard, arranged substantially as and for the purpose set forth.

3. In a device for preventing the clandestine refilling of bottles, a flat-valve seat, a disk valve fitted to close thereon having a central perforation therein, a second disk valve arranged to close the said perforation, and a surrounding expanded chamber, a central projection therein adapted to limit the motion of said valves in combination with one or more rolling weights confined in said chamber superposed on said disk valves and arranged to close said disk valves when the bottle-neck is in erect position, substantially as and for the purpose set forth.

4. In a device for preventing the clandestine refilling of bottles, a valve-chamber,

having a central aperture in the bottom, leading downwardly into the bottle, one or more perforated disk valves, and a superposed imperforate disk valve, arranged to close said central aperture, a superposed guard permitting egress of fluid and excluding access by implements to the valve-chamber, and a central projection arranged to limit the opening motion of the valve or valves, in combination with one or more rolling weights in said valve-chamber, arranged to close said valve or valves when in erect position and to control the opening motion of the valve when in an inclined position, substantially as set forth.

5. In a device for preventing the clandestine refilling of bottles, a valve-chamber having a flat seat in the bottom, opening from the bottle, and a discharging-neck, in combination with a flat valve, arranged to close said valve-seat, a superposed rolling weight, arranged to close said valve or valves, a rolling weight below said valve, arranged to open the same, and a guard having a central downward projection of such length as to exclude the superposed weight from central position

in said chamber, and to limit the opening of said valve, substantially as set forth.

6. In a non-refilling-bottle device, a bottle-neck formed of two sections, the upper neck-section having in its lower part an expanded chamber adapted to receive a guard, a guard fitting in said expanded chamber and a further expansion at the lower end of said upper neck-section having an internal shoulder and internal projections formed integrally with one section and adapted to engage in recesses in the other section, said lower section having angular grooves engaging said projections, and an upper end opposed to said internal shoulder, a compressible gasket between said upper end and said shoulder, a guard, a valve-seat contained in said lower section, said lower section being adapted to be cemented to the lower end of the upper section, substantially as set forth.

WILLIAM H. PAYNE.

Witnesses:

C. R. MORGAN,
A. V. W. BUDD.