

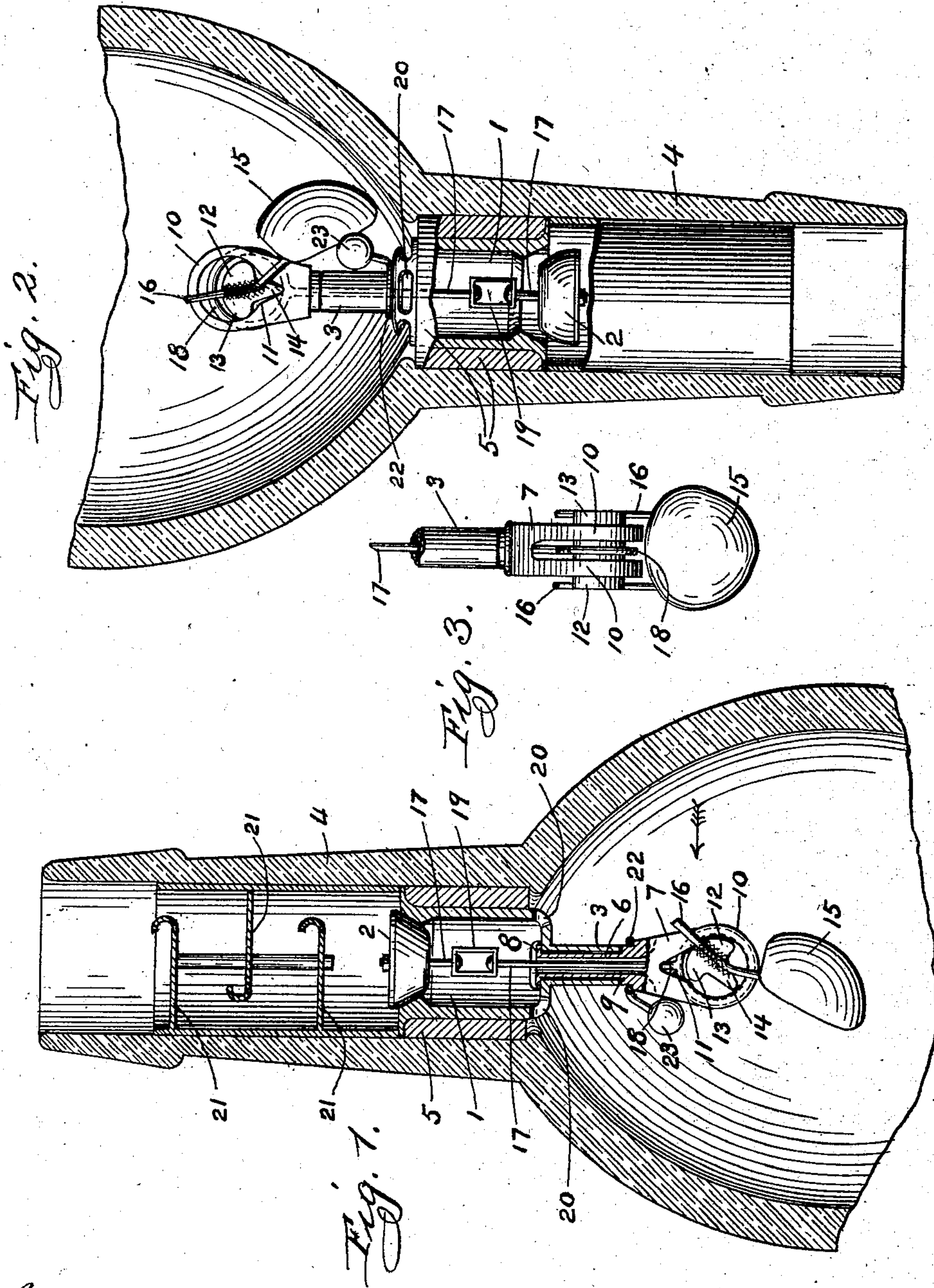
No. 708,749.

Patented Sept. 9, 1902.

M. C. WILSON.
BOTTLE STOPPER.

(Application filed Jan. 20, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

MARGARET C. WILSON, OF CHICAGO, ILLINOIS.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 708,749, dated September 9, 1902.

Application filed January 20, 1902. Serial No. 90,518. (No model.)

To all whom it may concern:

Be it known that I, MARGARET C. WILSON, a citizen of the United States, residing in the city of Chicago, county of Cook, State of Illinois, have invented a new and useful Improvement in Bottle-Stoppers, of which the following is a specification.

My invention relates to bottle-stoppers, and has for its object the prevention of the re-filling of the bottle whereto it is applied.

I attain my object by the mechanism illustrated in the accompanying drawings, in which—

Figures 1 and 2 are side views of the device, showing the stopper in a closed and open position, respectively. The bottle is shown in central vertical section, and in order to illustrate the operation of the device in Fig. 1 the bottle is shown in an upright position and in Fig. 2 in an inverted position. Fig. 3 is a fragmentary view of the locking device looking in the direction of the arrow, Fig. 1.

Similar numerals refer to similar parts throughout the several views.

The chambered center casing 1 is provided at its upper extremity with a seat for the valve 2 and terminates at its lower extremity in the centrally-apertured depending sleeve 3. Said casing is held in place in the lower portion of the neck 4 of the bottle by means of the washer 5, which consists of rubber, cork, or other suitable material. The stem 6, formed at the upper extremity of the slotted head-piece 7, fits loosely within said sleeve 3 and has a head 8, formed at its upper extremity, so as to bear upon the upper extremity of said sleeve 3, thereby holding said stem in position in said sleeve, but permitting the free rotation of said stem. A shoulder 9 is formed on said headpiece at the lower extremity of said sleeve to limit the longitudinal movement of said headpiece in said sleeve. Said headpiece 7 terminates at its lower extremity in the loops 10, which are annular except for the slots 11, which extend toward said stem 6. The rotatable key 12, which is mounted in said loops, is cylindric in cross-section, having a circular portion 13, fitting the inner diameter of said loops, and a tongue portion 14, designed to enter into said slots 11. The parts are so constructed that when said

tongue 14 is not adjacent to said slots 11 said key is held concentric with said loops, but when said tongue is opposite to said slots a lateral movement of said key in said head is permitted. Thus the position of said key lengthwise of the axis of the stem 6 is dependent upon the angular position of said key in said loops 10. Said concentric position is illustrated in Fig. 1 of the drawings, while Fig. 2 shows the tongue 14 within said slots 11, and consequently the key in its position nearest to said stem 6. The weight 15 is suspended from said key 12 by means of the wires 16 16, which are extended across said loops 10, so as to constitute keepers for retaining the key in position within the loops.

The valve-rod 17 is secured at one end to the valve 2, above mentioned, and at the opposite end terminates in a ring 18, which fits over the key 12, so as to be at all times concentric therewith, but loose enough to permit the free rotation of said key. It is evident, therefore, that the motion of said key in the direction of the axis of the stem 6 is imparted to said ring 18. Said stem 6 is centrally apertured to loosely receive said valve-rod 17 and permit the travel of the latter in the direction of the axis of said stem. The swivel 19 is placed in said rod 17 within the center casing 1 and is located between the valve 2 and the upper extremity of the stem 6. Said swivel is so constructed as to permit the independent rotation of the two different sections of said valve 17 and also to permit the approach of said rod-sections toward each other telescopically. The parts are so proportioned that when the key 12 is concentric with the loops 10 the valve 2 is seated and the valve-rods 17 are in their extreme positions in the swivel 19.

The center casing 1 is provided at its lower portion with the apertures 20 20, which form a passage for liquid. Above the center casing in the neck of the bottle are fixed the shelves or diaphragms 21, which extend part way across the neck of the bottle, so as to permit the passage of liquid, but prevent access to the valve 2.

A ring 22, carrying a weight 23, is loosely mounted upon the sleeve 3 and headpiece 7 in such a manner as to rotate freely thereon and also slide in the direction of the axis of

said sleeve. Said ring and weight constitute a guard for preventing the opening of the valve 2 when the bottle is in an upright position, as will hereinafter more fully appear.

5 The operation of the mechanism is as follows: When the bottle is held in an upright position, the weight 15 tends to drop to its lowest position, with the result that the key 12 assumes a position concentric with the
10 loops 10, as shown in Fig. 1. The key in this position causes the ring 18, acting through the medium of the valve-rod 17 and swivel 19, to draw the valve 2 down upon its seat in the center casing 1, thereby closing the bot-
15 tle. When it is desired to remove the contents from the bottle, the bottle is inverted, which causes the weight 15 to approach the sleeve 3 and swing the tongue 14 of the key 12 into the slots 11, with the result that said
20 key and the ring 18 move toward said sleeve 3. This permits the valve 2 to drop from its seat, thereby permitting the escape of liquid from the bottle. Inasmuch as the headpiece 7 and valve-rod 17 are swiveled the weight 15
25 will be free to be acted upon by gravity when the bottle is in an approximately horizontal position, so that said weight is at all times operative.

It will be understood that if the bottle were
30 shaken when in an upright position the weight might be caused to temporarily approach a position near the sleeve 3 and thereby permit the opening of the valve 2 for a short period of time in the attempted fraud-
35 ulent refilling of the bottle. The function of the guard 22 and weight 23 is to prevent such approach of the weight 15 toward the sleeve 3. If the bottle were in an upright position, said guard would lie at the lowest extremity
40 of its point of travel on the sleeve 3, notwithstanding the shaking of the bottle, and when said guard is in this last-named position said weight 23 assumes a location such as to interfere with the weight 15 and prevent a ro-
45 tation of the key 12 sufficiently to permit the tongue 14 to enter the slots 11 in the loops 10. When, however, the bottle is held in an inverted position, said guard falls to a position adjacent to the body of the center casing
50 1, where it does not interfere with the swinging of the weight 15. One of the purposes, also, in providing the telescopic swivel 19 in the valve-rod 17 is to add a further safeguard against fraudulent refilling by shaking the
55 bottle, for it will be apparent that if the bottle be held in an upright position the weight of the valve 2 will keep said valve down upon its seat even though the tongue 14 be caused to enter the slots 11. In this latter instance
60 the parts of the valve-rod 17 would merely telescope within the swivel 19, thereby virtually shortening the length of said valve-rod and rendering said rod inoperative to raise said valve from its seat.

65 What I claim as new, and desire to secure by Letters Patent, is—

1. In a bottle-stopper, the combination of

a center casing secured to the neck of the bottle, a valve seating on said casing, a slotted loop connected to said casing, a rotatable key 70 mounted in said loop and having a tongue for entering the slot in said loop, a valve-rod consisting of two parts, whereof one is connected to said key and the other is connected to said valve; and a telescoping swivel connecting 75 the parts of said rod.

2. In a bottle-stopper, the combination of a center casing secured to the neck of the bottle, a valve seating in said casing, a loop connected to said casing, said loop being circular 80 except at one side thereof where there is formed a slot extending outward from the center of said loop; a rotatable key having a cylindrical portion fitting the circular portion of said loop, and said key having a tongue 85 adapted to enter the slot in said loop to thereby permit a movement in a radial direction of said key in said loop, a weight attached to said key whereby gravity may operate said key, and connections between said key and 90 said valve for controlling the latter.

3. In a bottle-stopper, the combination of a hollow center casing secured in the neck of the bottle; a valve-seat at the upper extremity of said casing; passages for liquid at the 95 lower extremity of said casing; a sleeve formed at the lower extremity of said casing; a slotted loop; a stem formed on said loop and revolubly mounted within said sleeve; a rotatable key mounted in said loop and hav- 100 ing a tongue for entering the slot in said loop; a valve seating upon said center casing, and connections between said key and said valve whereby said key controls said valve.

4. In a bottle-stopper, the combination of 105 a center casing secured in the neck of the bottle; a valve for closing the said casing; a sleeve formed at the lower extremity of said casing, a slotted loop, a stem formed on said loop and revolubly mounted within said sleeve; a grav- 110 ity-operated rotatable key mounted in said loop and having a tongue for entering the slot in said loop; keepers for retaining said key within said loop; and connections between said key and said valves for operating the 115 latter.

5. In a bottle-stopper, the combination of a center casing secured within the neck of the bottle a valve for closing the passage through said casing, a sleeve formed at the lower ex- 120 tremity of said casing; a slotted loop, a stem formed on said loop and revolubly mounted in said sleeve, a rotatable key having a slot for entering said loop, connections between said key and the valve for operating the lat- 125 ter; a weight for operating said key, and a guard slidably mounted on said sleeve for limiting the motion of said weight in operating said key.

6. In a bottle-stopper, the combination of 130 a center casing secured to the neck of the bottle, a valve seating in said casing; a loop connected to said casing, said loop being circular except at the side thereof where there is formed

a slot extending outward from the center of said loop; a rotatable key having a cylindrical portion fitting the circular portion of said loop, and said key having a tongue adapted
5 to enter the slot in said loop to thereby permit a movement in a radial direction of said key in said loop; connections between said key and said valve for operating the latter, and a series of shelves or diaphragms extend-
10 ing partially across the neck of the bottle above said valve for preventing the access of appliances for disturbing the same.

7. In a bottle-stopper, the combination of
15 a valve seating within the neck of the bottle, a slotted loop mounted within said bottle, a rotatable key in said loop having a tongue for entering the slot in said loop, and a valve-rod connected to said key and to said valve, where-
by said valve is controlled by said key.

8. In a bottle-stopper, the combination of 20
a valve seating within the neck of the bottle, a slotted loop fixed within said bottle, a rotatable key in said loop, said key having a tongue for entering the slot in said loop, and connec-
25 tions between said key and said valve for controlling said valve.

9. In a bottle-stopper, the combination of
a center casing secured to the neck of the bot-
tle, a valve seating on said casing, a slotted
loop connected to said casing, a rotatable key 30
mounted in said loop and having a tongue for
entering the slot in said loop, and a valve-rod
connected to said key and to said valve for
operating the latter.

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