

No. 876,205.

PATENTED JAN. 7, 1908.

W. T. LOUGHIN.
NON-REFILLABLE BOTTLE.
APPLICATION FILED MAR. 23, 1907.

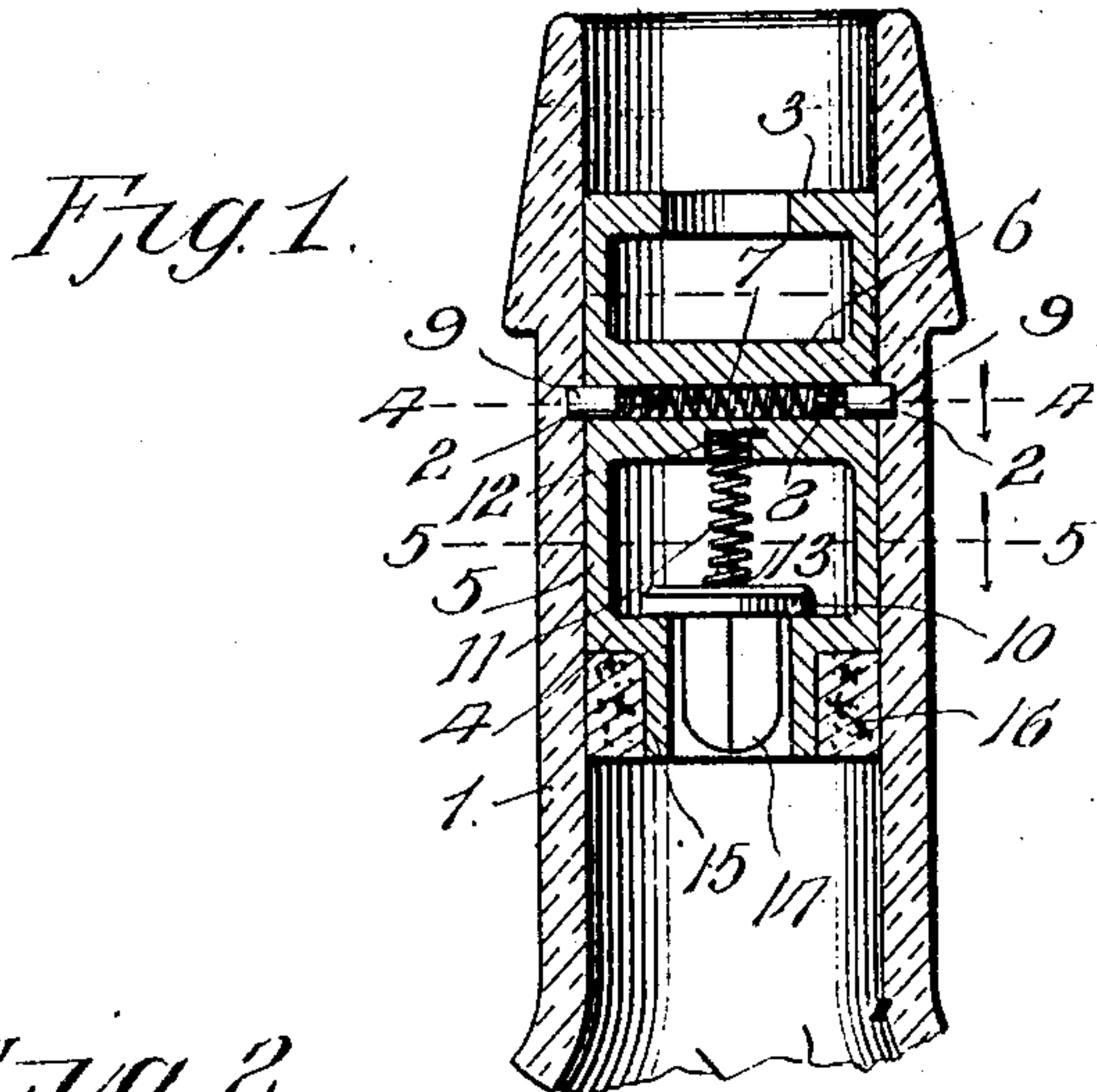


Fig. 2.

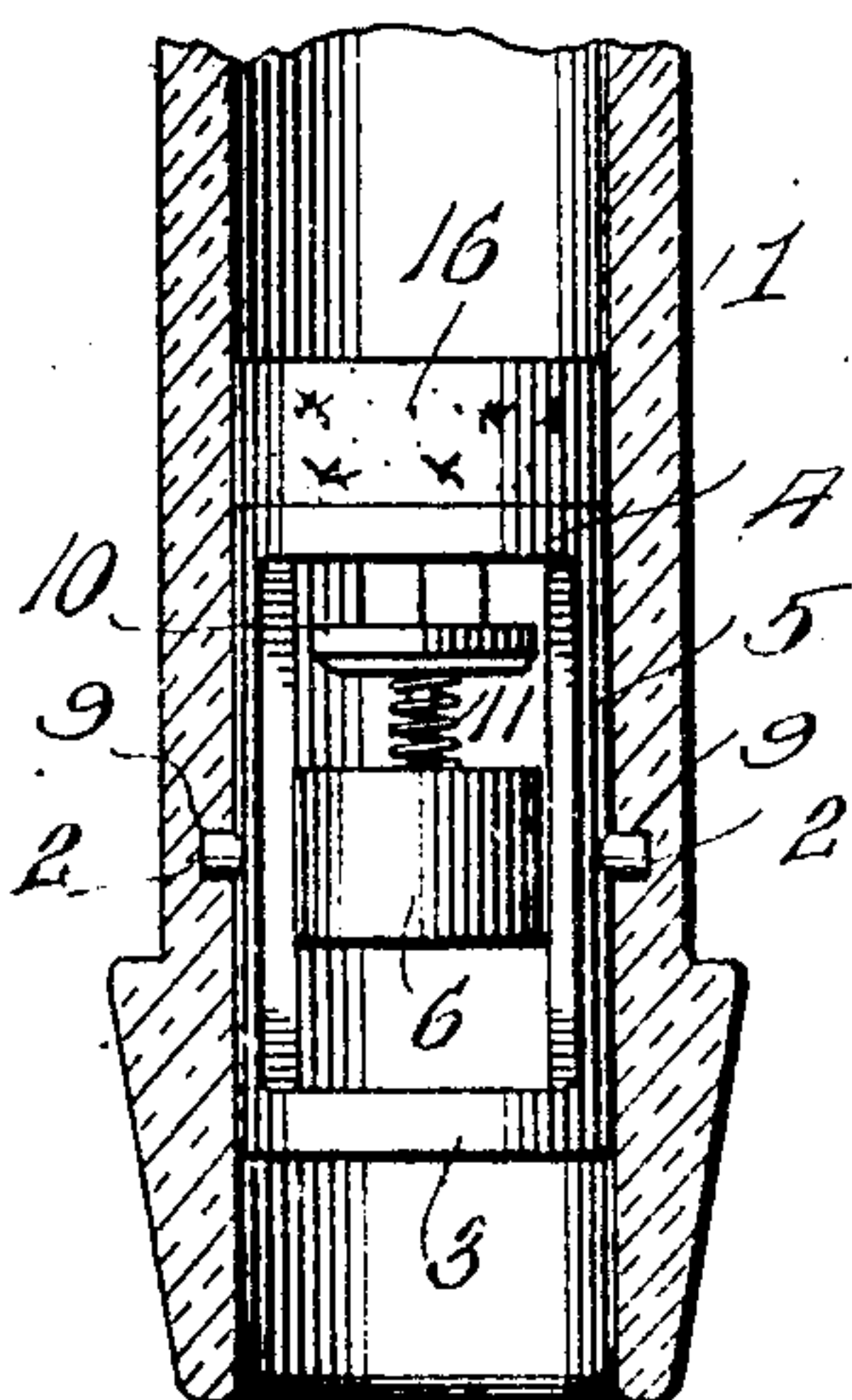


Fig. 3.

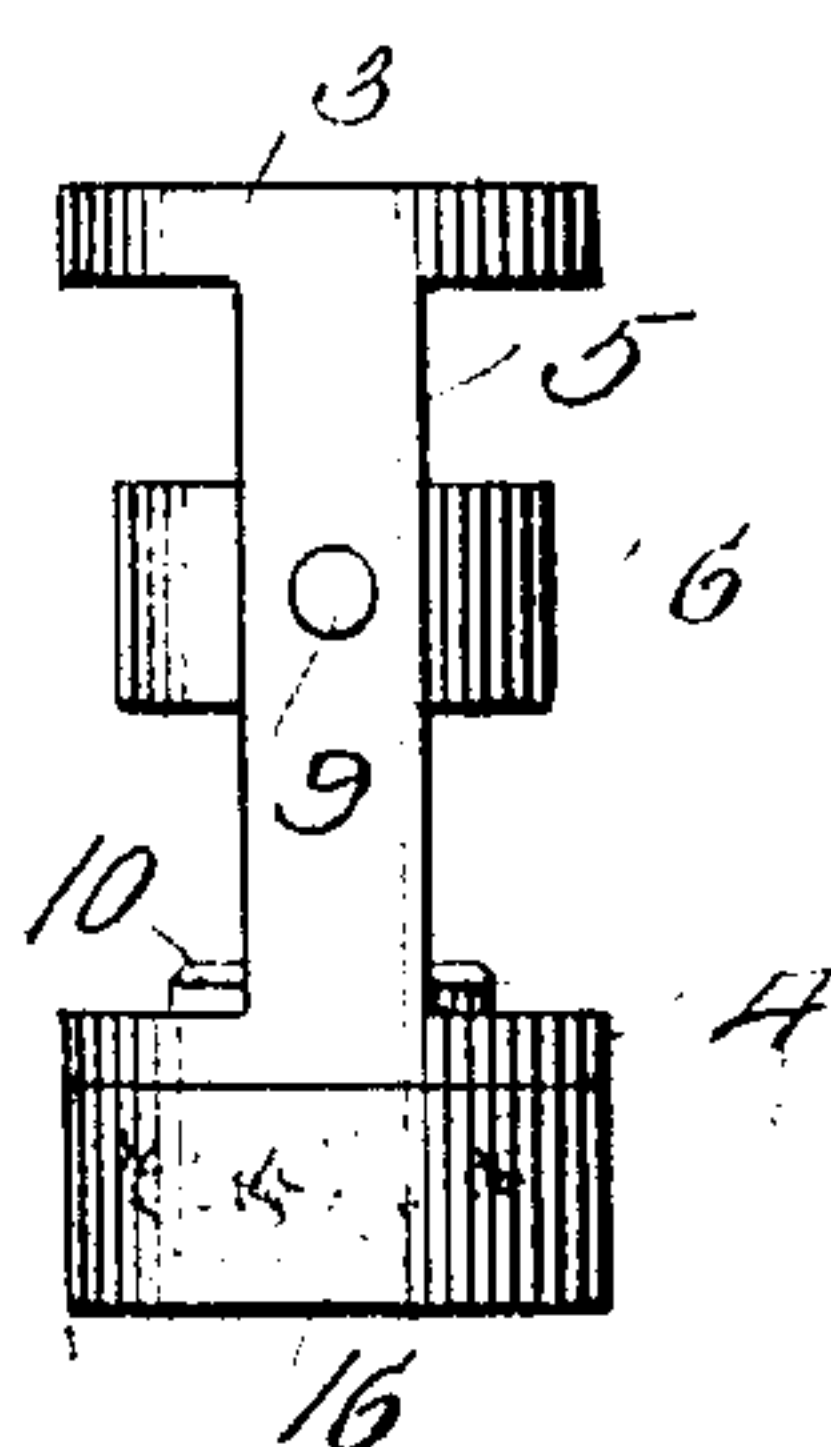


Fig. 4.

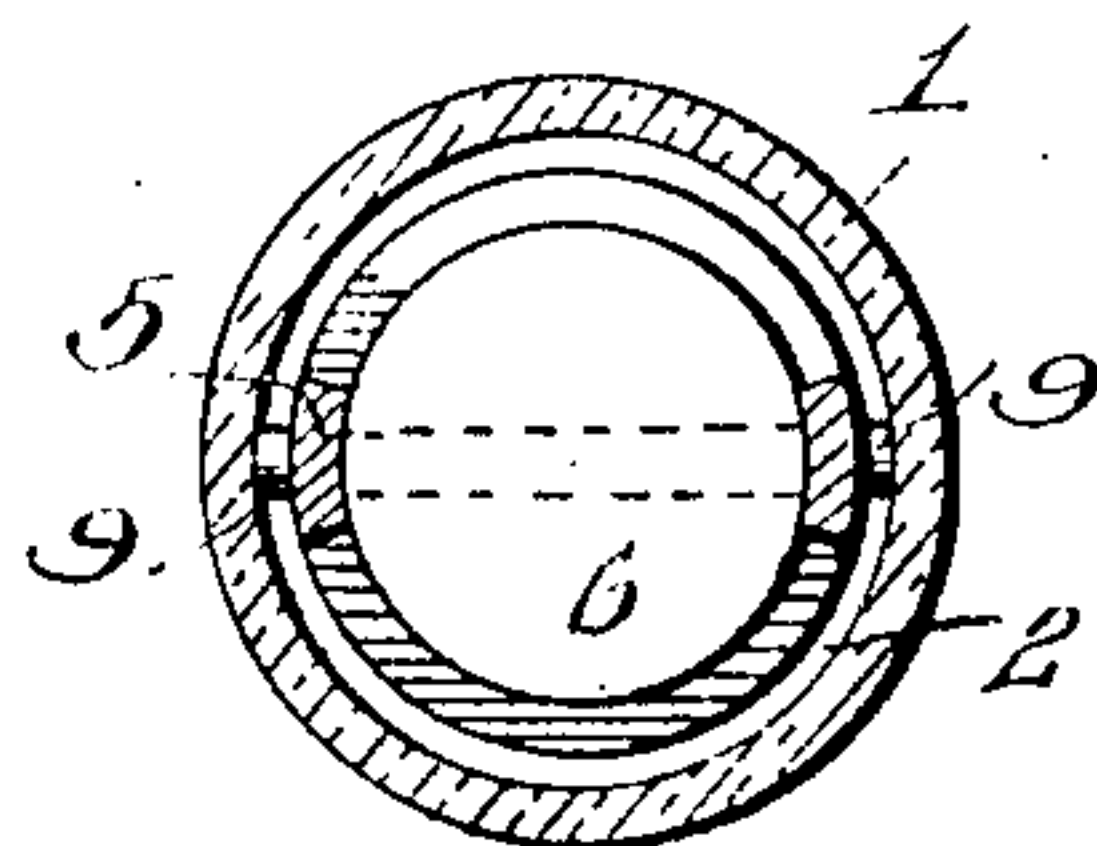


Fig. 5.

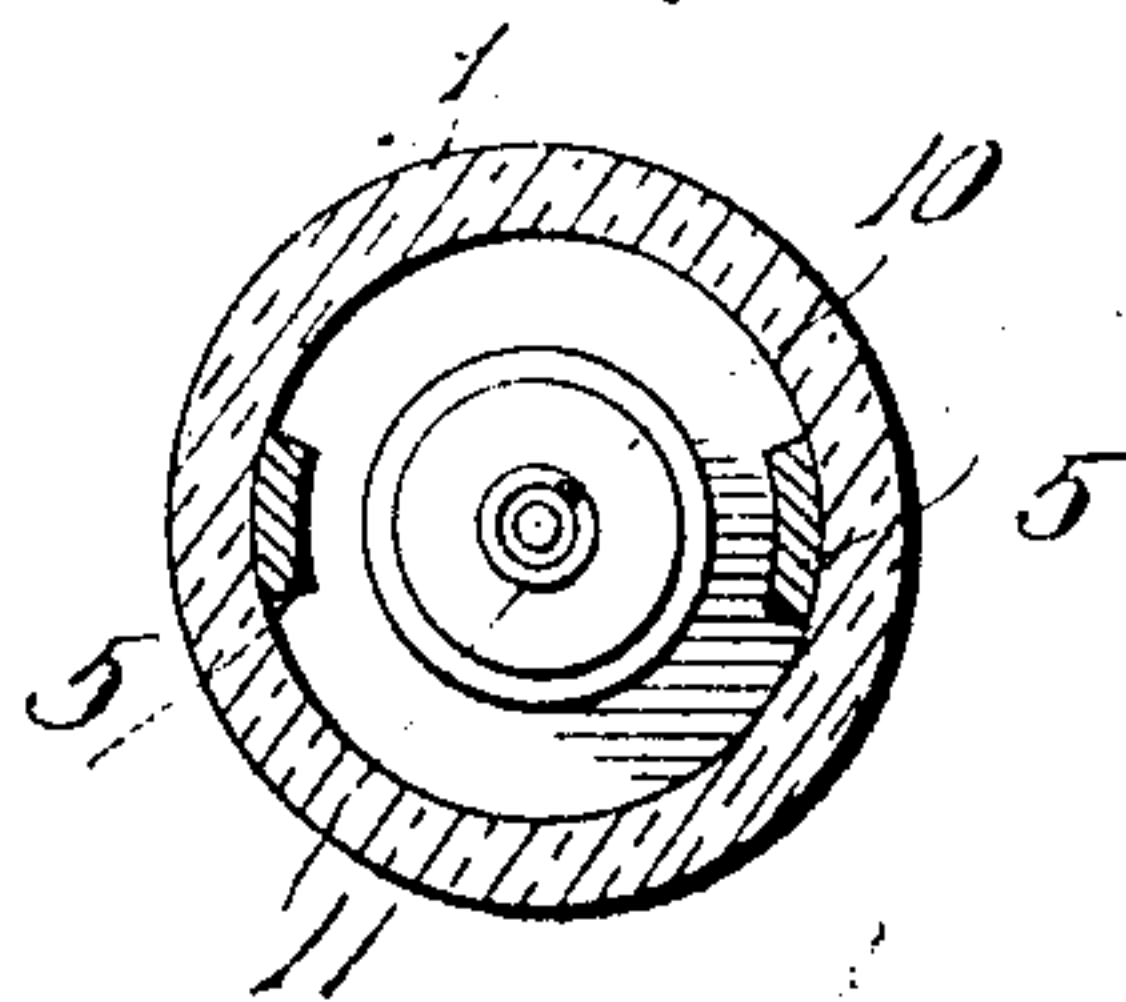
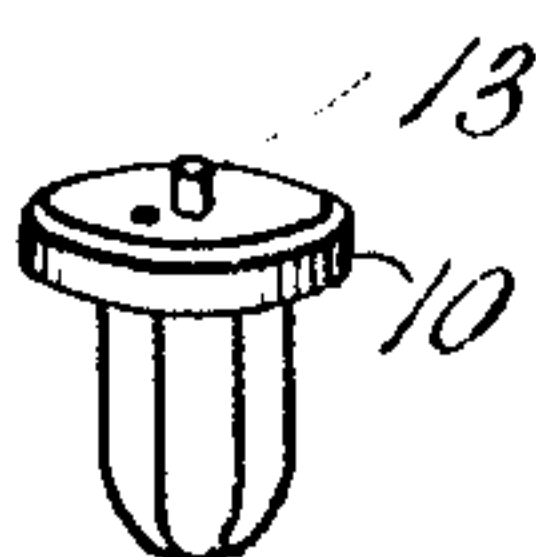


Fig. 6.



Inventor

William T. Loughin,

Witnesses

Frank Lough
C. Bradley.

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM T. LOUGHIN, OF BALLARD, WASHINGTON.

NON-REFILLABLE BOTTLE.

No. 876,205.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed March 23, 1907. Serial No. 364,088.

To all whom it may concern:

Be it known that I, WILLIAM T. LOUGHIN, a citizen of the United States, residing at Ballard, in the county of King and State of Washington, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to a non-refillable bottle of that type in which the stopper is provided with spring-pressed retaining means adapted to enter sockets or depressions molded in the neck of the bottle and also provided with a spring-closed valve which opens outwardly under the weight of the liquid in the bottle when the latter is inverted.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be of comparatively easy and inexpensive construction, thoroughly reliable and efficient in use, and readily applied.

A further object of the invention is the provision of a metal stopper including retaining means and an automatically seated valve, the said stopper being provided at its inner end with a suitable gasket that snugly fits the interior of the bottle neck to prevent leakage.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts as will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a longitudinal section of the neck portion of a non-refillable bottle showing the stopper thereof in normal position. Fig. 2 is a similar section showing the stopper in elevation and the valve thereof open to permit the contents of the inverted bottle to flow out. Fig. 3 is a side elevation of the stopper removed. Figs. 4 and 5 are transverse sections on lines 4--4 and 5--5, respectively. Fig. 6 is a perspective view of the stopper valve.

Similar reference characters are employed to designate similar parts throughout the several views.

Referring to the drawing, 1 designates the neck of a glass or other bottle which may be of any desired shape and size, and at a suitable point inwardly from the open end of the

neck are diametrically arranged sockets or depressions 2 that are molded therein for the purpose of receiving the retaining means whereby the stopper is positively anchored in place.

The stopper comprises a metal body formed of apertured end disks 3 and 4 that are connected by two diametrically arranged and longitudinally extending side members or bars 5 which have formed integrally therewith a central disk 6. This disk is bored transversely to receive a helical compression spring 7 and extending from the extremities of the bore or passage 8 are pins 9 that are pressed outwardly by the spring 7 to engage in the sockets 2 of the bottle, thereby forming the retaining means for positively holding the stopper in place. The lower disk 4 forms a seat for the automatic check valve 10 that is normally held in place by a relatively light helical compression spring 11 which enters at its upper end a depression 12 in the central disk 6 and engages a lug 13 at its lower end formed on the top of the valve 10. This valve has a body 14 which enters the opening of the lower disk 4 and serves to guide the movement of the valve. The lower disk has a cylindrical depending flange 15 around which is fitted a cork or other gasket 16 that is adapted to snugly fit the interior of the neck 1 so as to prevent leakage around the body of the stopper.

In operation, the bottle is filled to the desired height and stopper inserted with the valve end lowermost. In the act of inserting the stopper, the retaining pins 9 are pressed inwardly between the thumb and first finger of the hand holding the stopper and care is exercised to initially place the stopper so that as it is thrust inwardly, the pins will move in a line coinciding with the sockets 2 to enable the pins to enter the sockets when the stopper is inserted to the desired distance. As soon as the pins register with the sockets, they move outwardly under the tension of the spring 7 and enter the sockets, thus retaining the stopper in place and preventing its withdrawal. The check valve 10 is held on its seat while the bottle is in an upright position and after the usual outer stopper or cork is taken out, the contents of the bottle can be removed by simply inverting the bottle. The weight of the liquid in the bottle will automatically open the valve and permit the contents to

flow out through the bottom disk around the middle disk and out through the top disk. The middle disk is so proportioned that it is impossible to insert an instrument whereby
 5 the valve can be opened in an attempt to re-fill the bottle. After the bottle is emptied, the neck can be broken so as to take out the stopper and use it over again.

I have described the principle of operation
 10 of the invention, together with the device which I now consider to be the best embodiment thereof, but I desire to have it understood that the device shown is merely illustrative, and that such changes may be made
 15 when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. The combination of a bottle neck provided with a depression, with a stopper comprising top and bottom apertured disks, vertically extending connecting bars, a central member connected with the bars, an outwardly urged locking device on the said
 25 member adapted to engage in the depression of the bottle neck, a valve disposed under the member for closing the aperture of the bottom disk, and a compression spring bearing at one end on the valve and the other end
 30 on the said member.

2. A bottle stopper comprising top and bottom apertured disks, side bars connecting

the disks, an intermediate disk connected with the side bars and of less diameter than the other disks, outwardly urged spring-
 35 pressed members on the central disk, a valve adapted to seat on the top side of the bottom disk for closing the aperture thereof, and a spring anchored at one end on the central disk and bearing at its opposite end on the
 40 valve for normally holding the latter closed.

3. The combination of a bottle neck provided with diametrically opposite sockets; with a stopper comprising apertured top and bottom disks, a central disk connected with
 45 the others and provided with a diametrically extending bore, and a flange on the bottom disk; a gasket on the flange engaging the interior of the neck; pins arranged in the ends of the bore of the middle disk, a spring
 50 arranged with its ends bearing on the pins to hold them in the sockets of the neck, a check valve adapted to seat on the lower disk for closing the aperture thereof, and a compression spring bearing at one end on the
 55 valve and at the other end on the middle disk.

In testimony whereof, I affix my signature in presence of two witnesses.

WILLIAM T. LOUGHIN.

Witnesses:

SYLVESTER ROOT,
 JAMES BLACKIE.