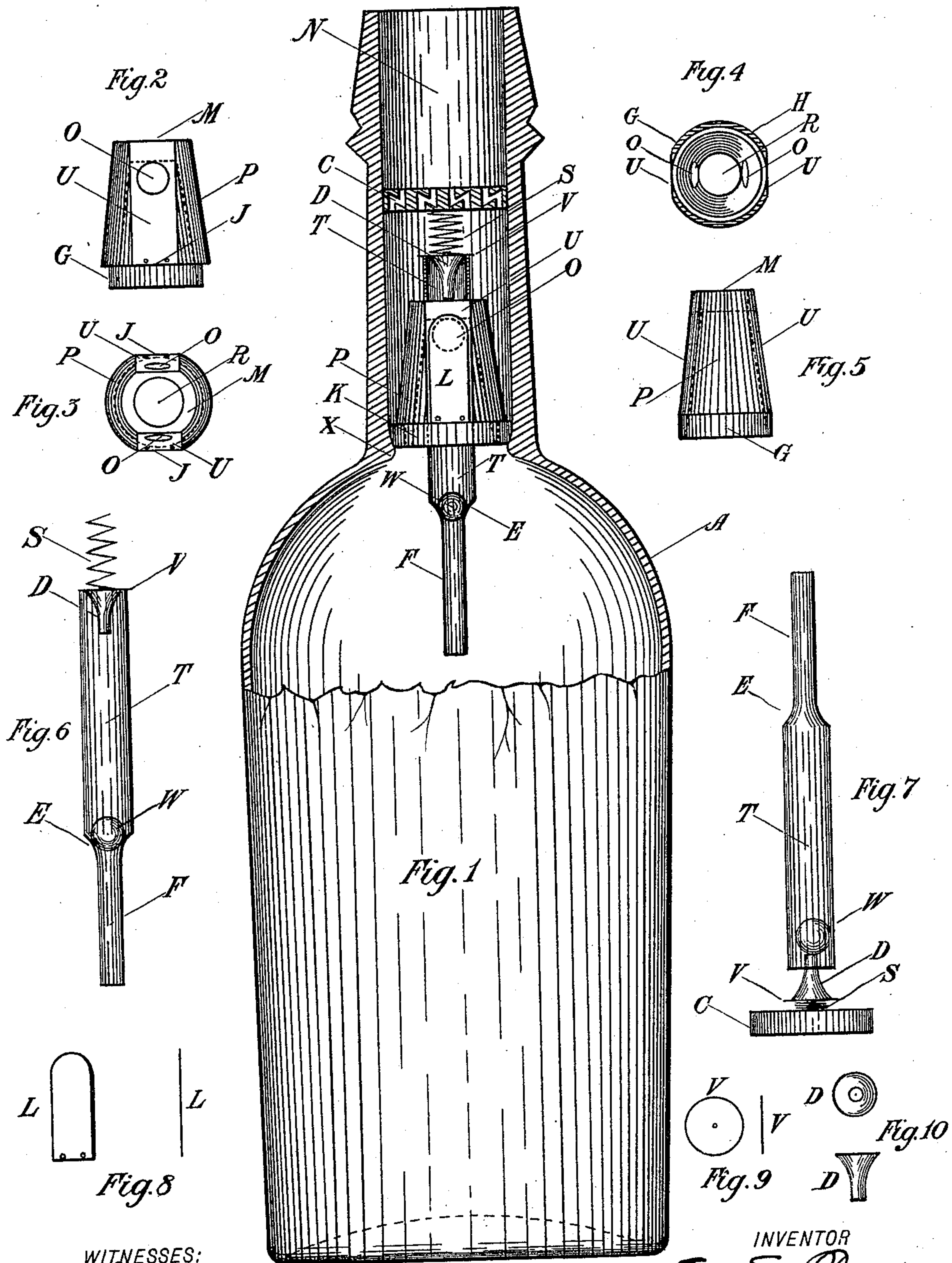


(No Model.)

F. S. PERRIN.  
BOTTLE STOPPER.

No. 582,433.

Patented May 11, 1897.



WITNESSES:  
*O. E. Thompson*  
*Edw. E. Jackson*

INVENTOR  
*F. S. Perrin.*  
BY *Briesen & Knauth*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

FREDERIC STANTON PERRIN, OF NEW YORK, N. Y.

## BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 582,433, dated May 11, 1897.

Application filed April 14, 1896. Serial No. 587,569. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERIC STANTON PERRIN, a citizen of the United States, residing at the city of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Bottle-Stoppers, of which the following is a specification.

My invention relates to stoppers that are used in bottles, jugs, demijohns, or any vessel for holding liquids, which stoppers, while permitting the free discharge of the contents absolutely prevent refilling of the vessel.

The object of my invention is to provide a device of this character which may be readily applied to any vessel by inserting it in the open mouth thereof, from which it shall be incapable of removal and shall, by its presence, prevent the vessel from being refilled, although the contents may at any time be obtained by pouring them out of the vessel in the ordinary manner.

It is my object also to provide a stopper which may be made wholly of glass, china, or similar material of a vitreous nature, or wholly or partially of mineral, vegetable, or animal matter where it is better adapted, in which the exit-passages therein are opened by the weight of the liquor and closed by the tension of the material used, be it mineral, vegetable, animal, or a combination thereof.

Many devices for closing vessels containing liquors have been proposed with a view of preventing the refilling of the same, but, in fact, it has been always possible, with certain precautions, to introduce liquor. It is sufficient for this purpose to incline the vessel within the liquor and with a movement to and fro to force the liquor within, or it may be introduced by withdrawing the air from the vessel and allowing the liquor to flow slowly into the partial vacuum thus formed, or it may be introduced by pressure. It is these defects which I have overcome by my invention; and to accomplish my object my invention consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a partial sectional view of an

ordinary bottle containing my improved stopper. Fig. 2 is a front view of the plug forming part of the stopper. Fig. 3 is a top view of said plug. Fig. 4 is an underneath view, and Fig. 5 is a side view of the same. Fig. 6 is a view of the air-conduit with its valve and weight for tripping said valve. Fig. 7 is an inverted view of said air-conduit, showing the valve as opened by the weight to admit air. Fig. 8 is a front and side view of the valve for liquor-exit passage. Fig. 9 is a front and side view of the air-conduit valve, and Fig. 10 is a side and bottom view of the stud to which said air-conduit valve is attached and upon which the tripping-weight strikes to open said valve.

Similar letters of reference indicate similar parts throughout the several views.

Referring to Fig. 1, A represents a partial section of a bottle, flask, or similar receptacle, having in its neck N the hollow plug P, provided with apertures O and R, extending from the center cavity H, Fig. 4, to the exterior sides and top, Fig. 3. The exterior sides are ground off flat about the apertures O and extend the full length of the plug, and the valves L are attached to these flat surfaces at their lower edges J and cover the apertures O, as shown in Fig. 1. The valves L are by preference thin flat sheets of mica or similar non-corrosive flexible substance whose tension holds them closely over the apertures O and constitute liquor-tight covers. The plug P is rigidly fastened within the neck N by the cork bushing K, or otherwise. Through the central cavity H of the plug P passes the air-conduit T, which extends from within the vessel to a short distance above the plug P, and is rigidly cemented or fastened to the sides of the aperture R, leaving a space within the central cavity for the liquor to flow around the air-conduit to the apertures O; but the air-conduit may be otherwise properly secured. At the top of this air-conduit is shown a flat valve V, Fig. 9, which is rigidly secured to the top of a tapering stud D, Fig. 10, in such a manner that the entire stud may enter the air-conduit and allow the valve V to be pressed upon the flat surface of the extremity of said air-conduit by the tension of the spring S and form a tight covering to the air-conduit T. Within the air-conduit is placed an in-



dependently-movable body or weight W, that falls upon the stud D when the vessel is tilted or inverted, as shown in Fig. 7, and knocks the valve V from its seat and holds it in its open position as long as the vessel remains inverted. When the vessel is returned to an upright position, the moving body W travels away from the valve and the spring S forces the valve V down upon its seat and retains it in this position until again removed by the body W. The air-conduit is shown constructed in such a manner that the weight W when dropping away from the valve finds a support either on a narrowing inner extension of said tube, as shown, or on any other suitable stop. The spring S is by preference constructed of non-corrosive material, and is so adjusted as to press against the lower surface of the guard C with a tension just sufficient to hold the valve V upon its seat, the weight W being just heavy enough to overcome said tension. The guard or stop C is shown as a disk perforated with as many zigzag or other holes as possible to allow the liquor to pass through freely, and also allow air to enter the vessel, and yet prevent the introduction of instruments to tamper with the valves. This disk is rigidly attached to the sides of the neck N, by cement or otherwise, at a sufficient distance above the valve V to prevent the stud D from leaving the air-conduit T when the weight W moves the valve V from its seat and form a bearing for the tension-spring S to hold the valve V upon its seat. In the particular form shown it not only acts as a shield to the valves, but as a stop to the movements of the air-valve V.

When the vessel is filled with its original contents, the plug P, carrying the air-tube, is inserted in the neck N and firmly secured by the cork bushing K. Then the guard C is inserted into the neck until it meets the spring S with sufficient tension and is then permanently fastened in any suitable manner in its position.

In order to be able to pour out the contents at will, it is only necessary to tilt the vessel and allow the weight W to force the valve V away from its seat. The liquor within the vessel will then pass through the plug P and force open the valves L and flow through the apertures O into the neck N, thence through the lower zigzag holes in the guard C, while the air will enter through the upper zigzag holes of the guard C and pass through the air-conduit F, which at this stage is opened by the independent body W.

If it is attempted to refill the vessel by the vacuum process or otherwise, the first effect will be to force the valves L and V tighter against their seats, and should an attempt be made by moving the vessel to and fro within liquor before the vessel has reached a horizontal position from an inclined position the tension of the spring S will have overcome the weight W within the air-conduit and the valve V will reach its seat before any liquor can pass within the air-conduit T and prevent the introduction of liquor through the air-conduit, while the valves L cannot be removed from their seats by any pressure except from within the vessel.

It will be seen that by inverting or properly tilting the vessel the contents will readily pass through the stopper, but that it will be impossible, after the vessel has been emptied, to refill the same without breaking the bottle or destroying the guard-disk C.

I am aware that modifications may be made in the devices without departing from the spirit or scope of the invention; and,

Having fully described my invention, I claim—

A stopper for bottles, flasks and the like receptacles for preventing refilling thereof, consisting of a bottle-plug having one or more liquid-outlets in its side connecting with the central cavity, valves of flexible material carried upon the outside of the plug and closing the said liquid-outlets, an air-conduit extending through the bore of the plug to the outside thereof and extending into the bottle, the said air-conduit being provided with a stop to limit the movement of a weight, a movable valve stopping the outer end of the said air-conduit, a guard or partition in the bottle and a spring intervening between the guard or partition in the bottle and the movable valve of the air-conduit and a movable weight located in the air-conduit and adapted to unseat the movable valve when the bottle is tilted, whereby the weight will be limited in its movement at one end thereof by the movable valve and at the other end thereof by the stop in the air-conduit, so that liquid may be poured from the bottle through the liquid outlet or outlets in the plug and air may be permitted to enter the bottle through the air-conduit.

FREDERIC STANTON PERRIN.

Witnesses:

GEO. E. MORSE,  
HARRY M. TURK.