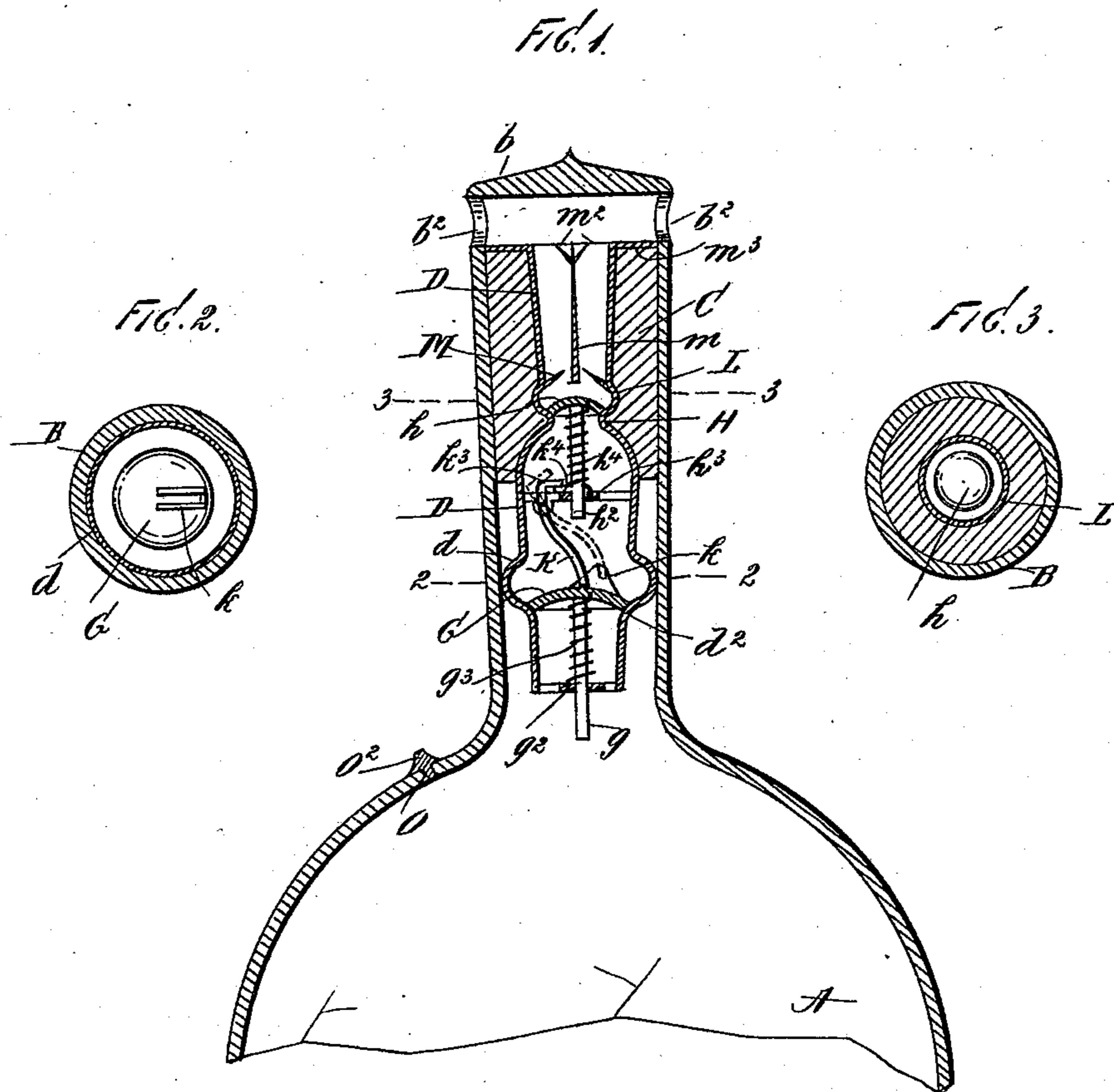


(No Model.)

H. G. LOHMAN.  
VALVE FOR BOTTLES.

No. 580,979.

Patented Apr. 20, 1897.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY GERD LOHMAN, OF MOUNT VERNON, NEW YORK.

## VALVE FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 580,979, dated April 20, 1897.

Application filed January 25, 1896. Serial No. 576,794. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY GERD LOHMAN, a citizen of the United States, and a resident of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Valves for Bottles or other Vessels, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to bottles, jugs, jars, and similar vessels, and the object thereof is to provide a vessel of this class which having been once filled cannot be emptied of its contents without leaving evidence of the fact, a further object being to provide a bottle or other vessel which is adapted to be filled through the side of the upper portion thereof and which is provided with a neck attachment having a central passage therethrough provided with automatic valves which are so constructed and arranged that they will operate to admit of the discharge of the contents of the vessel and also to prevent the refilling thereof.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a central vertical section of the upper part of a bottle provided with my improvement; Fig. 2, a section on the line 2 2 of Fig. 1, and Fig. 3 a section on the line 3 3.

In the drawings forming part of this specification I have shown my invention applied to a bottle, and in the practice thereof I provide a bottle or other vessel A, having a neck B, the walls of which are preferably slightly inclined inwardly and downwardly from the top thereof, and the upper end of the neck is closed, as shown at *b*, and provided with side ports or openings *b*<sup>2</sup>. I also provide a plug or stopper C, which is composed of cork or other preferred material, and through which passes a tubular or hollow attachment D. The attachment D is composed of metal, and formed near the lower end thereof is an annular enlargement *d*, below which is a contracted valve-seat *d*<sup>2</sup>, adapted to receive a valve G, to the lower side of which is secured a rod *g*, which passes through a keeper or guide *g*<sup>2</sup>, secured transversely of the lower

end of the attachment, and between said keeper or guide and said valve is a spiral spring *g*<sup>3</sup>.

At a predetermined distance above the annular enlargement *d* of the attachment D is a contracted annular valve-seat H, on which is placed a valve *h*, to the lower side of which is secured a rod *h*<sup>2</sup>, the lower end of which passes through a spider or keeper *h*<sup>3</sup> and on which is mounted a spiral spring *h*<sup>4</sup>, and pivotally connected to the spider or keeper *h*<sup>3</sup> at one side of the center thereof is a curved arm or lever K, the lower end of which bears upon the upper side of the valve G between two guides *k*, which are best shown in Fig. 2, and the upper end of said arm or lever is provided with an inwardly-directed projection *k*<sup>3</sup>, which operates in connection with a lug or projection *k*<sup>4</sup>, formed on the side of the rod *h*<sup>2</sup>.

Above the valve-seat H there is a slight annular enlargement in the tubular attachment D, as shown at L, at the upper side of which are formed inwardly-directed plates or projections M, and secured within the upper portion of the tubular attachment D is a vertical plate or projection *m*, at the upper edge of which are outwardly-directed prongs or projections *m*<sup>2</sup>, and the upper end of the tubular attachment D is provided with a flange or rim *m*<sup>3</sup>, which covers the upper end of the plug or stopper C.

It will be observed that the upper end of the plug or stopper C is level with the bottom of the side ports or openings *b*<sup>2</sup>, and this device is secured within the neck of the bottle at the time of its construction and may be secured therein or connected therewith in any desired manner, and I also provide a small port or opening O, which is preferably located in the upper end of the bottle or vessel and which is adapted to be sealed by a glass plug or other stopper O<sup>2</sup> after the bottle or vessel has been filled, or said port or opening may be sealed or closed in any desired manner, the only object in this connection being to hermetically close said port or opening so that it cannot be reopened.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings. After the bottle has been filled and the

port or opening O sealed, as described, the side ports or openings  $b^2$  in the neck may be closed in any desired manner by plugs or stoppers, or in any other way, and when it is desired to empty the bottle or discharge a portion of its contents said plugs or stoppers are removed and the bottle or vessel is inverted or tilted and the valves G and  $h$  will leave their seats under the pressure of liquids within the bottle and the action of gravity, and the said liquids will flow out through the tubular attachment D and out through the side ports or openings  $b^2$ , or one of them, and this operation may be continued or repeated until the vessel is entirely emptied. It will be understood, of course, that the lower valve G will be the first to leave its seat, and the arm or lever K is operated by this valve in such manner as to withdraw the projection  $k^3$  thereof from its connection with the lug or projection  $k^4$  on the rod  $h^2$ , after which the valve  $h$  will also leave its seat under pressure of liquids within the bottle and the operation of gravity, and when the bottle has been emptied or the operation of discharging the contents thereof concluded and the bottle returned to a vertical position the said valves will each be resealed and the lever or arm K will resume the position shown in Fig. 1.

It will be understood that the springs  $g^3$  and  $h^4$  are contractile springs and serve in the normal position of the bottle to retain the valves in place; but these springs are so adjusted as to be barely sufficient for this purpose, and the pressure necessary to operate the valves is very slight.

The object of the upwardly and inwardly directed prongs or plates M, the partition  $m$ , and the prongs or projections  $m^2$  at the top thereof is to prevent the insertion of a tool, wire, or other instrument in an attempt to interfere with the operation of the valves, and it is evident that changes in the construction herein described and modifications thereof may be made without departing from the spirit of my invention or sacrificing its advantages.

I am aware that valves have been devised for the purpose of preventing refilling of bottles after once emptying the same, but in these cases two valves were used and connected by a permanent rod or fixture in such a manner that they operate simultaneously, uncovering openings to allow outward passage of liquid, but become firmly seated when an attempt is made to refill the same by outward pressure. It is found, however, that by producing a partial vacuum from the outside of the valve after the bottles are emptied the valve can be unsealed, and by careful manipulation the bottle can by gradual introduction of liquid be refilled. In my invention this difficulty is entirely obviated, inasmuch as the outer valve when locked cannot be released or raised without first raising the inner valve, and as no vacuum can

be produced near the inner valve to raise the first to release the first valve it will readily be seen that said valve cannot be unsealed in the manner heretofore adopted.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A bottle or other vessel provided with a neck, the upper end of which is closed and provided with side ports or openings, a plug or stopper secured within said neck below said ports or openings through which passes a tubular or hollow attachment near the lower end of which is a valve-seat, and a valve adapted to be seated thereon, said tubular attachment being also provided about midway between said valve and the upper end thereof, with another valve-seat, and a valve seated thereon, each of said valves being provided with a rod, which passes through a keeper or spider, and on which is mounted a spring which operates to retain the valve upon its seat, and a pivoted arm or lever the lower end of which rests upon the lower valve and the upper end of which is provided with a projection which operates in connection with a lug or projection formed on the rod connected with the upper valve, substantially as shown and described.

2. A bottle or other vessel provided with a neck, the upper end of which is closed and provided with side ports or openings, a plug or stopper secured within said neck below said ports or openings, through which passes a tubular or hollow attachment near the lower end of which is a valve-seat, and a valve adapted to be seated thereon, said tubular attachment being also provided about midway between said valve and the upper end thereof, with another valve-seat, and a valve seated thereon, each of said valves being provided with a rod which passes through a keeper or spider, and on which is mounted a spring which operates to retain the valve upon its seat, and a pivoted arm or lever the lower end of which rests upon the lower valve and the upper end of which is provided with a projection which operates in connection with a lug or projection formed on the rod connected with the upper valve, and said tubular attachment being also provided with means in the upper end thereof, to prevent the insertion of an instrument to interfere with the operation of said valve, substantially as shown and described.

3. A bottle or other vessel provided with a neck, the upper end of which is closed and provided with side ports or openings, a plug or stopper secured within said neck below said ports or openings through which passes a tubular or hollow attachment, near the lower end of which is a valve-seat, and a valve adapted to be seated thereon, said tubular attachment being also provided about midway between said valve and the upper end thereof, with another valve-seat, and a valve seated thereon, each of said valves being

provided with a rod, which passes through a keeper or spider, and on which is mounted a spring which operates to retain the valve upon its seat, and a pivoted arm or lever the lower end of which rests upon the lower valve and the upper end of which is provided with a projection which operates in connection with a lug or projection formed on the rod connected with the upper valve, and said bottle or vessel being provided with a port or opening through which it may be filled, and which is adapted to be hermetically sealed after the bottle or vessel has been filled, substantially as shown and described.

4. In a bottle or other vessel, a compound valve or device comprising two valves, each valve of which is provided with a depending rod or bar, and a separate device adapted to open and close said valves, whereby the opening of the lower valve opens the upper valve, substantially as described.

5. In a bottle or other vessel, a lower valve adapted to be opened by the outflow of the liquid, an independent upper valve and a locking device free and independent of both and automatically engaging said upper valve to lock the same when normally closed, and adapted when the lower valve is open to disengage or release the said upper valve substantially as shown and described.

6. In a compound or multiple valve for bottles or other purposes, the combination of a valve with a locking device adapted to engage and disengage a second valve upon the actuation of the first, substantially as described.

7. In a compound valve for bottles or other purposes, a permanently-pivoted locking and releasing device actuated by an inner movable valve for the purpose of engaging and disengaging an independent and separate outer valve substantially as described.

8. In a bottle or other vessel, a compound or multiple valve or device, comprising two valves, each valve of which is provided with

an independent rod or bar to act as a guide during the actuation, and a separate device adapted to connect and lock and disconnect and release said valve, whereby the opening of the lower valve disconnects and unlocks or releases the upper valve, substantially as described.

9. In a bottle or other vessel, an automatic locking device adapted to engage and disengage one valve by the actuation of another for the purpose of closing and opening the orifice by means of a spring and outward pressure, substantially as described.

10. In a compound or multiple valve for bottles or other purposes, a locking and releasing device in contact with and actuated by an inner movable valve for the purpose of disengaging an independent and separate outer valve, substantially as described.

11. A compound or multiple valve for bottles or other purposes consisting of two valves, and an independent intervening locking and releasing device, the first of said valves being free and independent from the second valve, said second valve being adapted to operate the locking and releasing device which engages and disengages the first valve, substantially as described.

12. A compound or multiple valve for bottles or other purposes, comprising two separate and independent valves, and an independent and separate intervening device adapted to unlock and release one valve by actuation of the other, substantially as herein shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 23d day of January, 1896.

HENRY GERD LOHMAN.

Witnesses:

C. GIRST,

F. V. KIRCHHOFF.