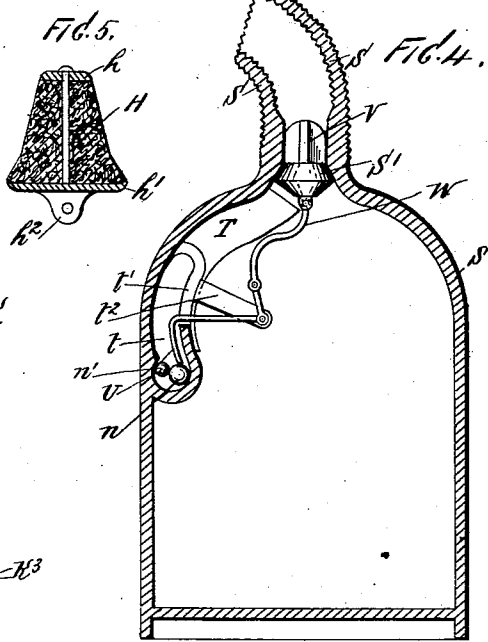
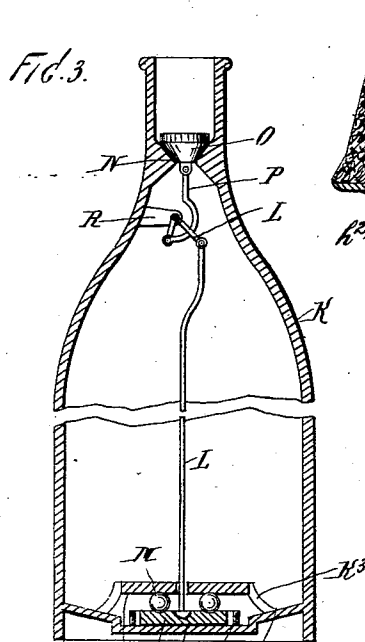
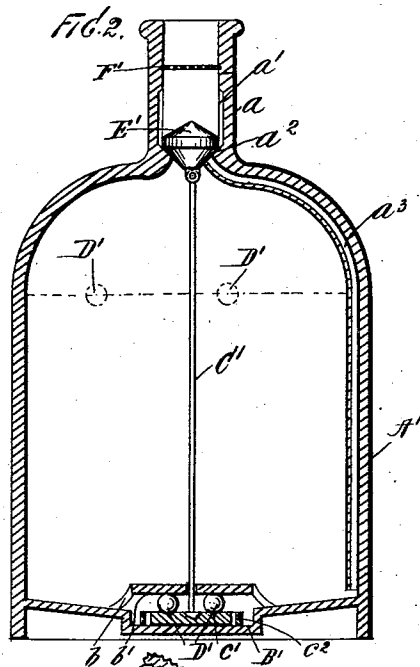
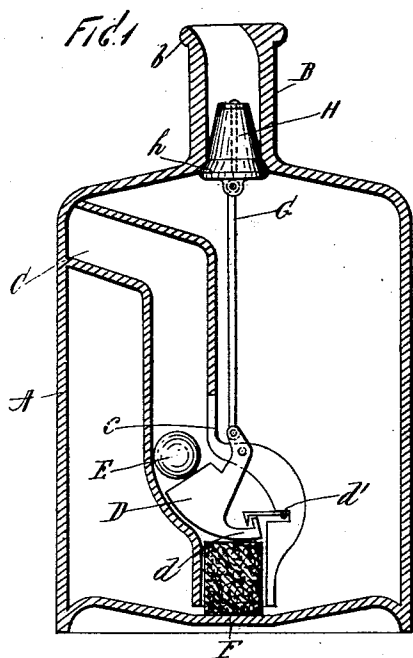


(No Model.)

L. C. WERNER.
BOTTLE.

No. 564,673.

Patented July 28, 1896.



WITNESSES: H², H¹, C¹, H

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UNITED STATES PATENT OFFICE.

LOUIS C. WERNER, OF BROAD BROOK, CONNECTICUT.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 564,673, dated July 28, 1896.

Application filed March 26, 1896. Serial No. 584,916. (No model.)

To all whom it may concern:

Be it known that I, LOUIS C. WERNER, a citizen of the United States, and a resident of Broad Brook, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Bottles, 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.

My invention relates to non-fillable bottles or similar vessels, and the object thereof is to provide a bottle of this character which, having been once filled and emptied of its contents, cannot be refilled without damaging the bottle, whereby the filling of the bottle with an inferior quality of goods is prevented, and with these and other objects in view this invention consists in the construction, combination, and arrangement of parts hereinafter more fully described in the specification and illustrated in the accompanying drawings, in which—

Figure 1 illustrates a vertical longitudinal section of a bottle constructed according to my improvement. Fig. 2 is a similar view of a modified form of the construction shown in Fig. 1. Fig. 3 is a similar section of a bottle provided with an antifilling device, which is a slight modification of that shown in Fig. 2. Fig. 4 is still another modification of the construction shown in the foregoing figures. Fig. 5 is a detail of the valve shown in Fig. 1.

Similar characters of reference designate like parts throughout the several views.

Referring to the drawings, and particularly to the construction illustrated in Fig. 1, the letter A designates a bottle constructed according to my improvement, having a neck B, the bore of which is curved, as shown at b, and at one side of the bottle adjacent to the upper portion thereof is formed a tubular passage or duct C, in the lower portion of which is formed a longitudinal slot c, and in this slot c is pivotally mounted a counterweighted lever or crank-arm D, having formed at one end thereof an upwardly-directed shoulder or projection d, adapted to engage a spring detent d', secured in the tubular passage C at one side of the slot c, and movably secured within said passage C is a ball or

spherical body E, and movably mounted within the lower portion of the passage C is a floatable stopper F, and to the free end of the crank-arm D, is pivotally secured one end of a vertical rod G, the upper end of which is pivotally connected with a frusto-conical valve H, the lower or enlarged portion of which is provided with an outwardly-inclined annular flange h.

The operation of this bottle will be readily understood from the foregoing description, taken in connection with the accompanying drawings, in which the valve is shown in a locked position; but it will be understood that the parts would not assume the position shown in Fig. 1 until the liquid shall have been withdrawn from the bottle, for the reason that when the bottle is filled with liquid the ball E and the floatable plug or cork F would assume an elevated position, and in such position the plug F would engage the counterweighted end of the crank-arm D and retain the same in substantially a horizontal position, thereby opening the valve H, and as soon as the liquid shall have been removed from the bottle the floatable plug F will descend and rest upon the bottom of the bottle, thereby releasing the counterweighted end of the crank-arm D and permitting the same to rotate upon its axis or pivot and the shoulder or projection thereon to pass beneath the spring-detent d', and should this motion of the crank-arm D not be sufficient to cause the shoulder d to engage the spring-detent d' the weight or impact of the ball E will tend to force the shoulder in engagement with said detent, thereby locking the valve in the position.

In Fig. 2 I have illustrated a modification of the construction shown in Fig. 1, in which I employ a bottle A', provided with a neck a, in which are formed longitudinal grooves or recesses a', and in the lower portion of the neck of the bottle is formed an annular inwardly-directed valve-seat a². Opening onto the valve-seat is a capillary tube or air-vent a³, which extends along one side of the bottle to near the bottom thereof, which bottom is inclined toward the center, and in the central portion is formed a recess or depression B', and connected with the bottom of the bottle, around the edge of the depressed portion

B', are projections or extensions *b*, supporting a disk or plate *b'*, provided with a central aperture, through which passes a vertical rod *C'*, carrying at its lower end, within said depressed portion B', a disk or head *c'*, around which is movably mounted a floatable ring or collar *c*², and secured within the bottle are spherical bodies or balls *D'*, which are shown resting upon the disk *c'* in full lines, and in dotted lines as floating upon the surface of the liquid, also shown in dotted lines near the top of the bottle, and to the opposite end of the vertical rod *C'* is pivotally connected a valve *E'*, the upper and lower portion of which is conical and tapering in form, and the central portion is provided with an annular enlargement or flange, and above said valve, secured in the annular groove or recess in the neck of the bottle, is an apertured disk, of spring metal, which is forced within the neck of the bottle and retained in said annular groove, the object of this disk being to prevent the insertion of a tool or other instrument within the neck of the bottle to unseat the valve *E'*. I may, however, if desirable, employ a similar apertured disk in connection with the other constructions illustrated herein, or the same may be omitted if found unnecessary.

The operation of this bottle is as follows: When the liquid is within the bottle, the balls *D'* will float upon the surface of the liquid and will descend with the same as it is discharged from the bottle, and when the liquid has been entirely discharged the balls will settle and rest upon the bottom of the bottle and, by reason the inclined surface of the same, will be projected between the projections or extensions *d* within the depressed portion B, and will be securely locked in this position by means of the floatable band *c*², which will be elevated by reason of the liquid left in the bottle, and will encircle the upper portion of the disk and retain said balls in that position.

In Fig. 3 I have illustrated a slight modification of the construction shown in Fig. 2, wherein the bottle *K* is provided with an inclined bottom *k*, in the central portion of which is formed a depressed or recess portion *k'*, above which is supported a disk or plate *k*², retained in position by projections or extensions *k*³, through which disk *k*² passes the vertical rod *L*, carrying at its lower end within the recess portion *k'* a head or disk *l*, surrounded by a floatable ring or band *l'*, and within the bottle are secured balls or spheres *M*, all substantially of the construction shown in Fig. 2.

In the lower portion of the neck of the bottle is formed inwardly and downwardly directed annular flange *N*, upon which is seated a frusto-conical valve *O*, to the lower end of which is pivotally connected a curved rod *P*, the free end of which is connected with a crank-arm *Q*, the central portion of which crank-arm is pivotally connected with a shoulder or projection *R*, formed upon the side of

the bottle, and the free end of said crank-arm *Q* is pivotally connected with the upper end of the vertical rod *L*.

The operation of this bottle is similar to that described in Fig. 2 and will not need further description here.

The construction shown in Fig. 4 is a modification of that heretofore shown and described, and consists of a bottle *S*, the neck of which is curved and provided upon the interior and exterior with irregularities and projections *s*, to prevent the insertion of a cork within the neck or securing of a cap upon the outside of the same, and in the lower portion of said neck upon the interior thereof is formed an annular inclined valve-seat *s'*, and upon one side of the bottle near the upper portion thereof is formed a pouch or chute *T*, which extends from beneath the valve into a compartment *t*, formed below the chute, in one side of which compartment is formed a slot *t'*, which extends through the top of said compartment, and formed on or connected with the exterior wall of said compartment adjacent to said slot *t'* is a projection or lug *t*², to which is pivoted the central portion of a crank-lever *U*, the end of which is curved and passes inwardly through said slot *t'* and is provided with a ball or weight *u* upon the inner end thereof, and within said compartment is movably secured a floatable ball or spherical body *u'*, adapted to lock the weighted end *U* in position by engagement with a projection formed on the side of the bottle, as clearly shown in Fig. 4, and mounted in the lower portion of the neck of the bottle is a valve *V*, the upper and lower portion of which is beveled, and to the upper portion is connected or formed ribs or veins *v*, which extend upwardly within the neck of the bottle, and to the lower portion of said valve is pivotally connected a curved rod *W*, the lower end of which is pivotally connected with the free end of said crank-arm, and by means of this construction when the bottle has been emptied of its contents the valve is locked in the position shown in said figure.

It will be understood that the ball *u'* will float in the upper portion of the compartment *t* and will not become seated, as shown, until all the liquid shall have been discharged from said bottle, and by means of the construction of the neck of the bottle all the liquid, when the bottle is nearly empty, will pass downwardly through the pouch or funnel device *T* into the compartment *t*, thus preventing the locking of the valve until all of the contents of the bottle shall have been discharged therefrom.

In Fig. 5 I have illustrated a detail view of the valve shown in Fig. 1, in which the specific construction of said valve is clearly illustrated, and it will be understood that said valve is formed of a frusto-conical piece of cork or similar material, to the upper and lower portions of which is secured, by means of a vertical rod, metal plates *h* and *h'*, the

lower plate being provided with an apertured lug h^2 , to afford attachment with the vertical rod G.

It will be obvious that various changes and modifications can be made in the construction, arrangement, and combination of parts herein shown and described, and I reserve the right to make all such changes therein and modifications thereof as fairly come within the scope of my invention.

In connection with the construction illustrated in Fig. 1, I may use a small magnet to retain the counterweighted arm G in a horizontal position to open the valve H, and I may also vary the construction shown in said figure without departing from the spirit of this invention.

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

1. A non-refillable bottle provided with mechanically-operated valve and one or more loose and independent floatable spherical bodies or balls, adapted to operate in connection with said mechanical elements to lock the valve in position, when the contents of the bottles shall have been discharged, substantially as described.

2. A non-fillable bottle in the lower portion of the neck of which is formed an annular valve-seat, said bottle having a chamber or compartment formed in or connected therewith below the neck thereof, within which bottle is mounted a lever or rod, a valve adapted to close the neck of the bottle and rest upon said valve-seat and having connections with said rod or lever, and an independent floatable ball or balls within said compartment adapted to operate in connection with said rod or lever and said compartment to lock the valve in position, substantially as described.

3. The combination in a non-fillable bottle the neck of which is provided near the lower portion thereof with an inclined valve-seat, of a frusto-conical valve adapted to engage said seat, a rod or lever mounted within said bottle and provided with an enlargement or head, said bottle being provided with the compartment formed therein or connected therewith below the neck thereof in which said enlargement or head is adapted to operate, con-

nection between said valve and said rod or lever, and a floatable independent ball or balls within said compartment adapted to operate in connection therewith and with said rod or lever to lock the valve in position, substantially as described.

4. The combination with a non-refillable bottle the neck of which is provided with an inclined valve-seat and which has formed on or connected therewith an inclosed compartment provided with an opening or aperture therein, of a rod or lever movably mounted within said aperture and provided upon the end thereof within said compartment with an enlargement or head, a frusto-conical valve adapted to engage said inclined valve-seat in the neck of the bottle, connection between said rod or lever and said valve and a ball or balls movably and loosely secured within said compartment and adapted to operate in connection with the enlargement or head of said lever or rod to lock said enlargement or head in position and set the valve substantially as described.

5. A non-refillable bottle in the neck of which is formed an inclined valve-seat, of a frusto-conical valve adapted to engage said seat said bottle being provided with an inclined bottom in the central portion of which is formed a recess or depression which is covered by a plate or disk supported by projections or extensions connected with the bottom of the bottle around said depressed portion, a rod carrying a head or enlargement which is secured within said recess portion connection between said rod and said valve floatable balls secured within said bottle and adapted to be engaged between the head or enlargement of said rod and a disk or plate above said recess portion and a floatable band within said recess portion adapted to surround said enlargement or head and lock the latter in position to retain the valve in the seated position, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 24th day of March, 1896.

LOUIS C. WERNER.

Witnesses:

C. GERST,

F. V. KIRCHHOFF.