No. 680,412. Patented Aug. 13, 1901.

E. FREESE & L. LEVY.

NON-REFILLABLE BOTTLE.

(Application filed Nov. 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

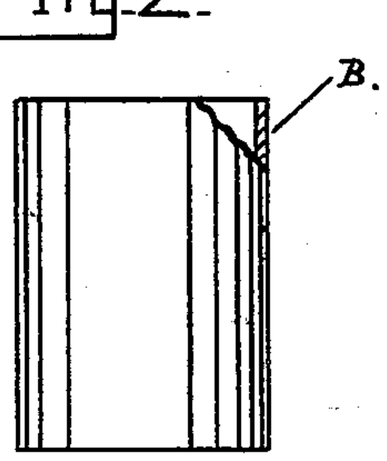


Fig. 1.

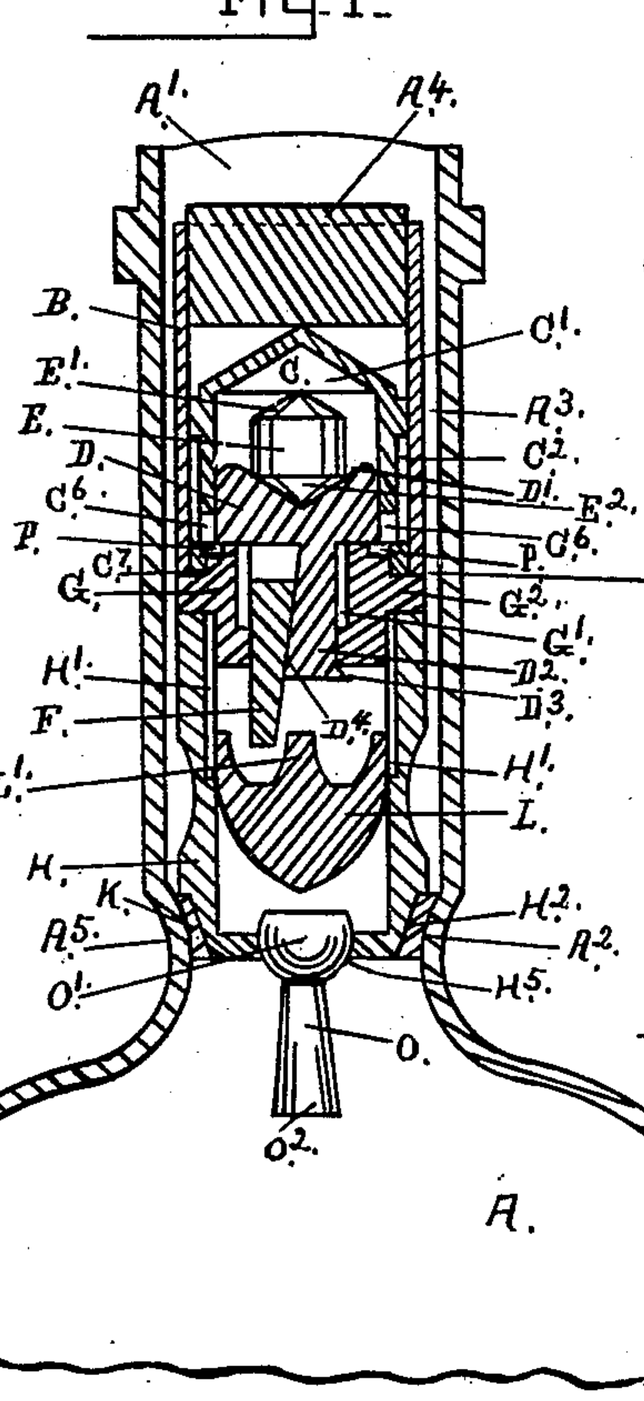


Fig. 4.

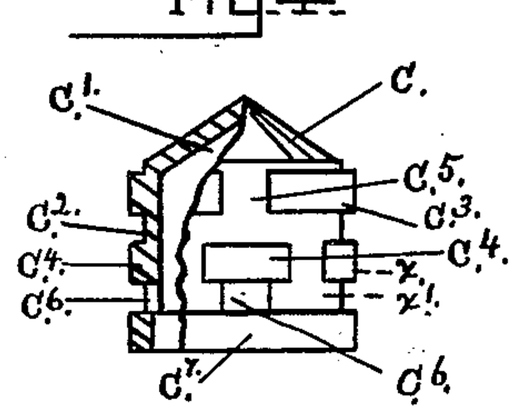


Fig. 5.

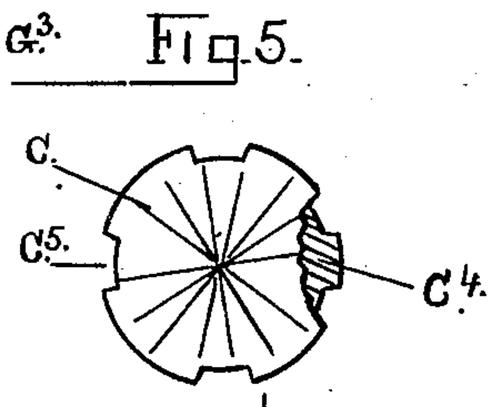


Fig. 6.

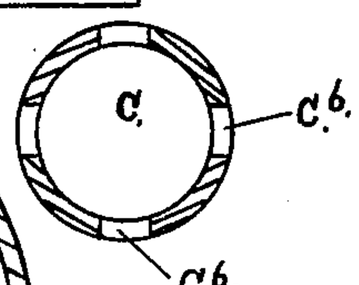


Fig. 3.

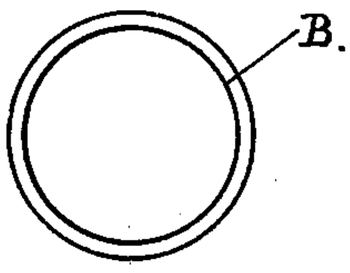


Fig. 7.

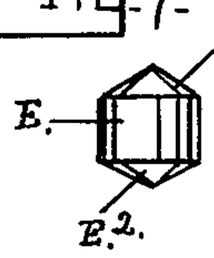


Fig. 8.

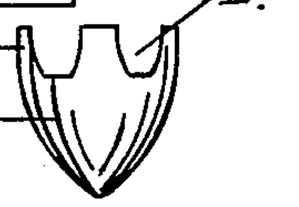


Fig. 9.

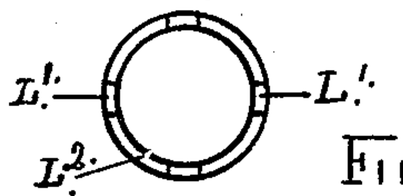


Fig. 12.

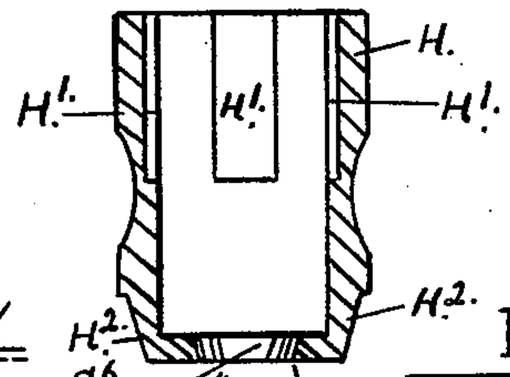


Fig. 13.

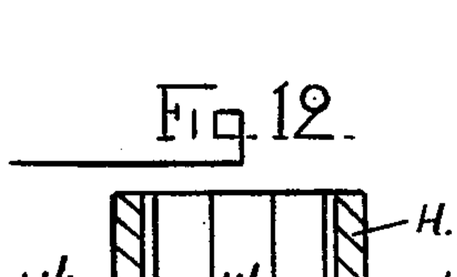


Fig. 10.

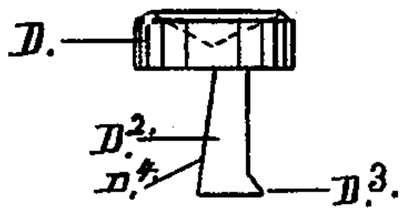


Fig. 11.

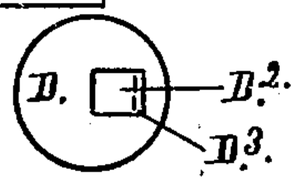


Fig. 14.

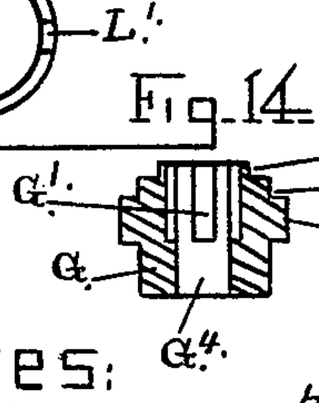
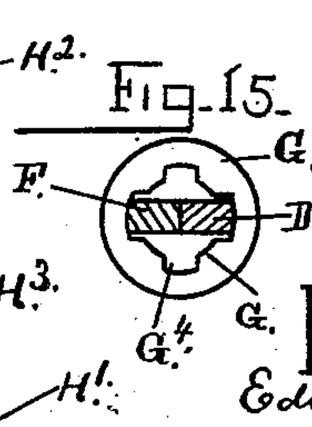


Fig. 15.



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No. 680,412. Patented Aug. 13, 1901.

E. FREESE & L. LEVY.

NON-REFILLABLE BOTTLE.

(Application filed Nov. 26, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 16.

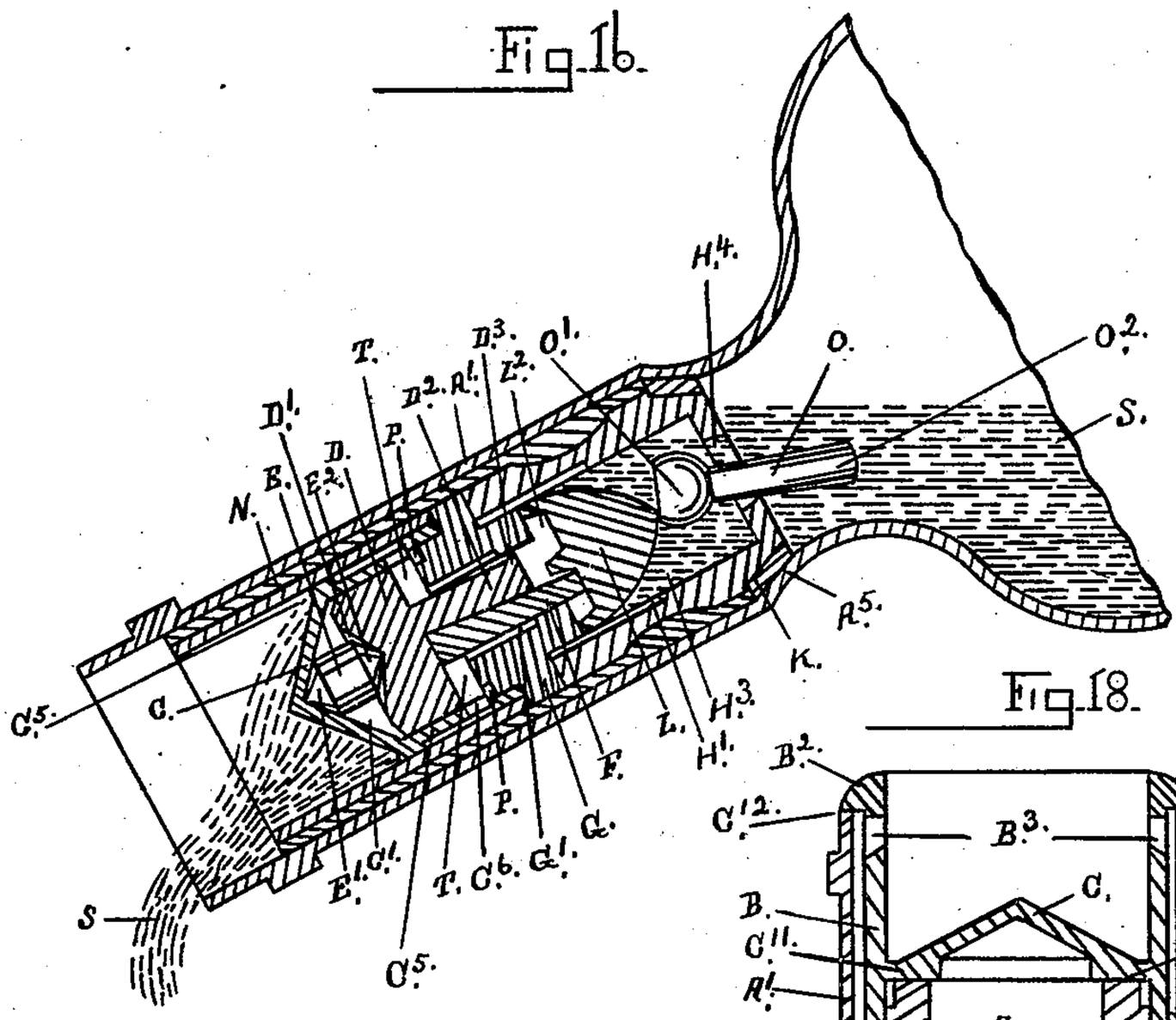


Fig. 18.

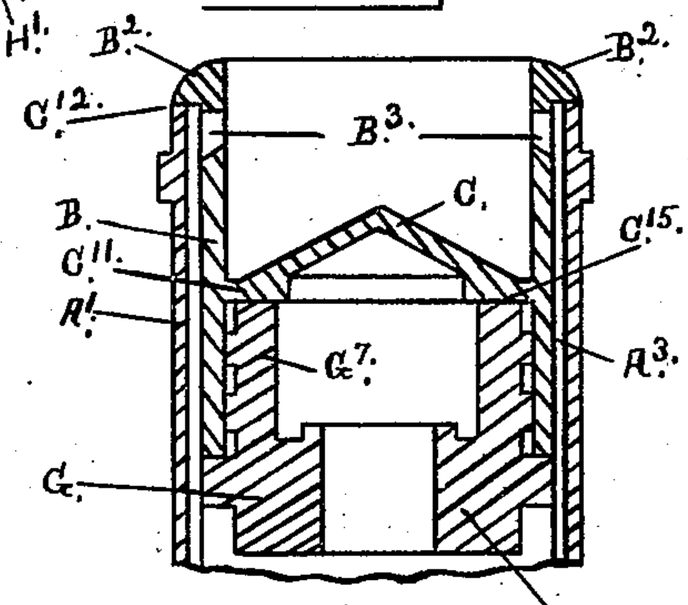
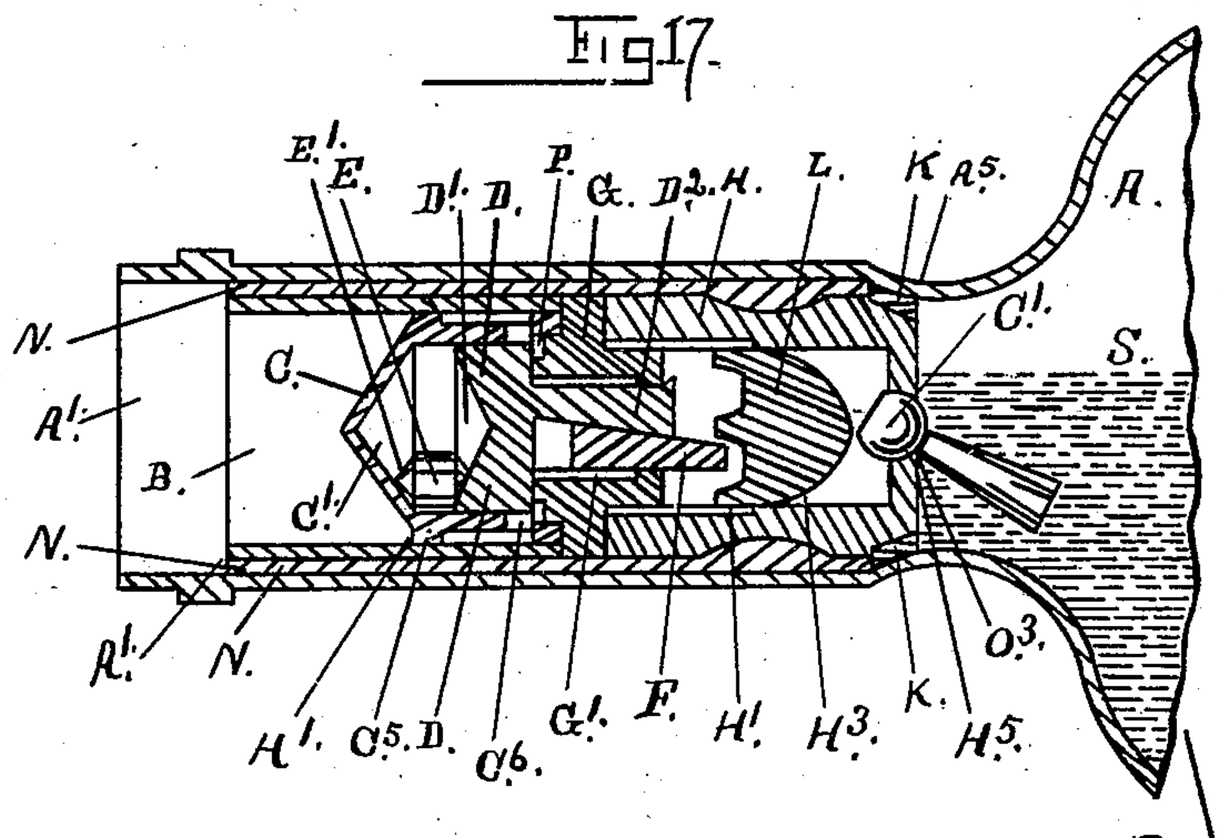


Fig. 17.



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UNITED STATES PATENT OFFICE.

EDWARD FREESE AND LEO LEVY, OF NEW YORK, N. Y., ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, OF THREE-EIGHTHS TO SAMUEL LEVY, OF SAME PLACE, AND HARRY L. ROSEN AND ABRAHAM MARKS.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 680,412, dated August 13, 1901.

Application filed November 26, 1900. Serial No. 37,783. (No model.)

To all whom it may concern:

Be it known that we, EDWARD FREESE and LEO LEVY, citizens of the United States, and residents of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

The object of this invention is to prevent bottles from being refilled.

The invention consists in an attachment to be sealed in the neck of a bottle or other receptacle and is formed by tubes, caps, seats, and rings for supporting valves, wedges, valve-weights, packing, and sealing compound.

Figure 1 represents a vertical sectional view of a bottle-neck and the attachment in place ready to be sealed. Fig. 2 is a side view of a glass tube forming a part of the exterior wall of the attachment. Fig. 3 is an end view of Fig. 2. Fig. 4 represents a guard-cap, showing the liquid-passages and guard-lugs. Fig. 5 is a top view of Fig. 4. Fig. 6 represents a cross-sectional view of Fig. 4 on line x'. Fig. 7 shows a conical weight for closing a sliding valve. Fig. 8 represents a valve and wedge operator. Fig. 9 is a top view of Fig. 8. Fig. 10 is a sliding valve provided with key, pendant, and a conical recess. Fig. 11 is an under side view of Fig. 10. Fig. 12 represents a sectional vertical view of the lower valve-seat and frame forming a part of the attachment. Fig. 13 is full top view of Fig. 12. Fig. 14 represents the union or center support of the attachment forming a guide for the wedge and a packing-recess. Fig. 15 is a top view of Fig. 14, showing the center passage. Fig. 16 represents the position of the several valves, weights, and wedges while the liquid is running out. Fig. 17 represents the position of the several parts forming the attachment when the bottle is in a horizontal position, and Fig. 18 is a modification of the tube construction having top flange and a guard-cap made integral with the tube.

A in the several figures represents an ordinary bottle provided with a neck A′ and a contraction A^5 at the base of the neck, which forms a tapering seat against which the packing K is forced when the attachment is pressed into the neck of the bottle.

B in the several figures is a tube forming part of the exterior receptacle for the cork A^4. In Fig. 18 this tube is provided with a flange or ledge B^2, which laps over the top of the bottle and prevents any instrument from reaching the sealing compound N. It is also provided with one or more openings B^3, through which the sealing compound is poured after the cork A^4 has been inserted to fill the space A^3. This modified tube is also provided with an integral cap C, which is united at C^{11} to the tube and forms a seat C^{15} for the center union-flange G.

C in the several figures is a guard-cap having a tapering wall C′, against which the cone-weight E contacts whenever the bottle is tipped to pour the contents out or lies in a horizontal position, as in Figs. 16 and 17. It is also provided with alternate guard-flanges C^3 and C^4, which being located above the opening or ducts C^6, as in Fig. 4, prevent any instrument from being forced down through the passage C^6 to displace one or more of the valves. It is provided with a surface C^2 on a lower plane than the outer surface of the lugs C^3 and C^4, forming a channel leading into the outer ducts C^5, Fig. 4, through which the outflowing liquid passes.

D in the several figures is a sliding valve having a conical sink on its upper end D′, as shown in Fig. 1, forming a seat against which the cone-wall E^2 of the weight E rests. It is provided on its lower side with a pendant D^2, which has an inclined side D^4, against which the wedge F slides to lock the valve D in position. The pendant D^2 has a lug D^3, which contacts with the lower end of the union G when the wedge F is in the position shown in Figs. 1 and 17, but is released whenever the bottle is tilted, as in Fig. 16, causing the valve D to tilt. This valve D covers the ducts C^6 when the valve is in the position shown in Figs. 1 and 17; but when the valve is forced toward the top of the cap C through the medium of the wedge F by the weight-valve L the ducts C^6 are opened, allowing the liquid to flow.

L in the several figures is a sliding block

forming a valve and weight which closes the ducts H′ whenever the bottle is tilted, as in Fig. 17, or in a vertical position, as in Fig. 1, but permits the liquid to flow through the ducts H′ when the bottle is tilted sufficient to cause the swinging valve O to slide down and force the valve L against the wedge F, as shown in Fig. 16.

G in the several figures represents a union which has a central passage G^4 and a flange-seat G^2 for supporting the tube B and frame H. It is provided with a ring-seat G^6, Fig. 14, in which the packing P is held. It has a central passage through which the pendant D^2 and wedge F pass. When this union is adopted, as shown in the modified form, Fig. 18, it has an upward-extending flange G^7 to take the place of the flange on the cap C.

H in the several figures is a frame for supporting the valves L and O. It is open at the top and has a ball-valve seat H^4, as in Fig. 12, which is larger at its top than at the base, preventing the swing-valve O from falling below its seat. It is also provided with a ring tapering seat H^2, Fig. 12, for holding the packing K.

O is a valve having head O′ of the proper diameter to fit the seat H^4 and an arm O^2, which holds the valve in place when the bottle is in a horizontal position, as in Fig. 17, preventing the valve from opening and locking it as the junction O^3 comes in contact with the edge H^5 of the seat H^4.

E in the several figures is a weight having cone ends E′ and E^2 corresponding to the tapering walls of the cap C and sliding valve D. This weight when in the position as in Figs. 1 and 17 forces the valve D back and closes the ducts C^6 after liquor has been poured from the bottle.

The packing-ring K, which may be made from medicated cotton and free from any foreign substance injurious to liquor, prevents any of the sealing compound from coming in contact with the liquid.

The packing P, Fig. 1, prevents leaking at the junction of the cap C and union G.

When the attachment is to be used, the bottle is first filled with the desired amount of liquor. The attachment, with the cork A^4, is then pressed into the neck of the bottle, as shown in Fig. 1, care being taken to have the attachment located centrally in the neck that the space A^3 may be uniform in order to have the sealing compound N equally distributed. The sealing compound in a liquid state is then poured into the top of the bottle and allowed to harden in the space A^3, making it impossible to remove the attachment without breaking the bottle.

When liquor is to be poured from the bottle, the sealing compound N above the cork and the cork A^4 are removed. The bottle is then tilted, as in Fig. 16, which causes the pendent valve O to leave its seat H^4 and contact with the lower end of the valve L, forcing it downward against the wedge F, which in turn pushes the valve D beyond the ducts C^6, forming a space T. The liquor then takes the following course: through the valve-seat H^4 into the space H^3, then on by the valve L through the ducts H′ into the recess L^2, through the ducts G′ and passage G^4, Fig. 14, into the space T, then through the cap-ducts C^6 into the outlet-ducts C^5 of the cap C, Fig. 14.

Instead of the cone-weights E we may employ a ball-weight.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. A bottle-closure, comprising a sliding valve seated on a shoulder within the neck of a bottle, a sliding wedge adapted to normally hold said valve seated, and direct means for automatically actuating said wedge to release and unseat said valve.

2. A multiple-valve bottle-closure, comprising a sliding valve seated on a shoulder within the neck of a bottle, a sliding wedge normally holding said valve seated, a pendent valve-weight and an intermediate valve-weight adapted, as the bottle is inverted, to coöperate with said pendent valve-weight and wedge to release and unseat said sliding valve.

3. A multiple-valve bottle-closure, comprising a sliding valve seated on a shoulder within the neck of a bottle, a pendent locking extension to said valve, a sliding wedge, a pendent valve-weight and an intermediate valve-weight adapted to coöperate with said pendent valve-weight and wedge, to release said pendent extension and unseat the sliding valve, as set forth.

4. A multiple-valve bottle-closure, comprising a sliding valve seated on a shoulder within the neck of a bottle, an integral pendent locking extension to said valve, a sliding wedge, held frictionally against the face of said pendent extension, a pendent valve-weight seated in the lowermost part of the neck, an intermediate valve-weight thereabove, adapted to coöperate with said pendent valve-weight, to impart a longitudinal movement to the wedge, whereby said locking extension will be released and the sliding valve unseated, as set forth.

5. A multiple-valve bottle-closure, comprising a sliding valve seated within the neck of a bottle, a pendent extension to said valve, having an offset at its lower end, a sliding wedge held in frictional contact with the inclined face of said pendent extension, and normally holding the valve seated, a pendent valve-weight, and an intermediate valve-weight adapted to coöperate with said pendent valve-weight and wedge to release said pendent extension and unseat the sliding valve, as set forth.

6. A multiple-valve bottle-closure, comprising a sliding valve with pendent extension, a wedge, pendent valve-weight and intermediate valve-weight adapted to coöperate with said wedge to release and unseat said

sliding valve, an inclosure over the sliding valve, and a valve-closing weight normally resting on said sliding valve, as set forth.

7. A multiple-valve bottle-closure, comprising a sliding valve with pendent extension, a wedge, pendent valve-weight and intermediate valve-weight adapted to coöperate with said pendent valve-weight and wedge to release and unseat the sliding valve as the bottle is inverted, a cap with conical top over said sliding valve, and a valve-closing weight with conical ends, normally resting in the hollowed top of the sliding valve, as set forth.

8. In a multiple-valve bottle-closure, the valve-supporting member H and packing-ring interposed between said member and the neck of the bottle, the pendent valve-weight seated in the lowermost part of said supporting member, the weight-valve within the latter, the union G resting on said supporting member, the sliding valve resting on said union and having a pendent extension passing through the union, a wedge held by the inner wall of the union against the face of said pendent extension, the cap C with ducts therein and packing P resting upon the union, and the tubing B surrounding said cap, as set forth.

9. In a multiple-valve bottle-closure, the valves as set forth, the valve-supporting member, the union, the cap with alternately-arranged ducts and guards, the tubing supported on said union and surrounding said cap, and means for normally holding the ducts in said cap closed, as set forth.

10. A valve for a bottle-closure, having a pendent extension with an inclined face and provided with an offset at its lower end adapted to coact directly with a wedge positioned below the valve and against said inclined face to hold the valve seated within the neck of a bottle.

11. In a multiple-valve bottle-closure, the hollow valve-supporting member H provided with ducts H′, the pendent valve-weight seated in the lowermost part of said supporting member, the valve-weight mounted within said member, and designed to regulate said ducts, a hollow union mounted on said member, sliding valve seated on said union, and having a pendent extension passing through the union, and a sliding wedge also held within the union and adapted to coöperate with said valve-weight to release and unseat said sliding valve, as set forth.

12. In a multiple-valve bottle-closure, the hollow valve-supporting member H, provided with ducts H′, the pendent valve-weight seated in the lowermost part of said supporting member, the valve-weight mounted within said member, and designed to regulate said ducts, a hollow union having ducts G′ in its inner wall, the sliding valve seated on and having a pendent extension passing through said union, a sliding wedge also confined within the union and in contact with said pendent extension, and adapted to cooperate with said pendent and valve-weights to unseat the sliding valve, as set forth.

13. In a valve-closure for bottles, a hollow union supported within the neck of a bottle and having ducts G′ therein, a sliding valve seated on said union, a pendent extension of said valve having an inclined face, and an offset adapted to engage over the lower edge of said union, a wedge held within said union and in frictional contact with the inclined face of the valve extension, the lower end of the wedge extending below the union, and means for striking the lower end of the wedge to release and unseat the sliding valve, as set forth.

14. In a multiple-valve bottle-closure, the valve-supporting member H, the pendent valve seated in the bottom of said member, the valve-weight thereabove having a recess with inclined wall in its top, the hollow union seated on said member, the sliding valve seated upon and having a pendent extension with inclined face passing through said union, a sliding wedge, confined within the union and in contact with said inclined face, the lower end of said wedge extending below the union and designed to be struck by the wall of said recess as the bottle is inverted, as set forth.

Signed at New York city, in the county of New York and State of New York, this 4th day of October, A. D. 1900.

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LEO LEVY.

Witnesses:
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