

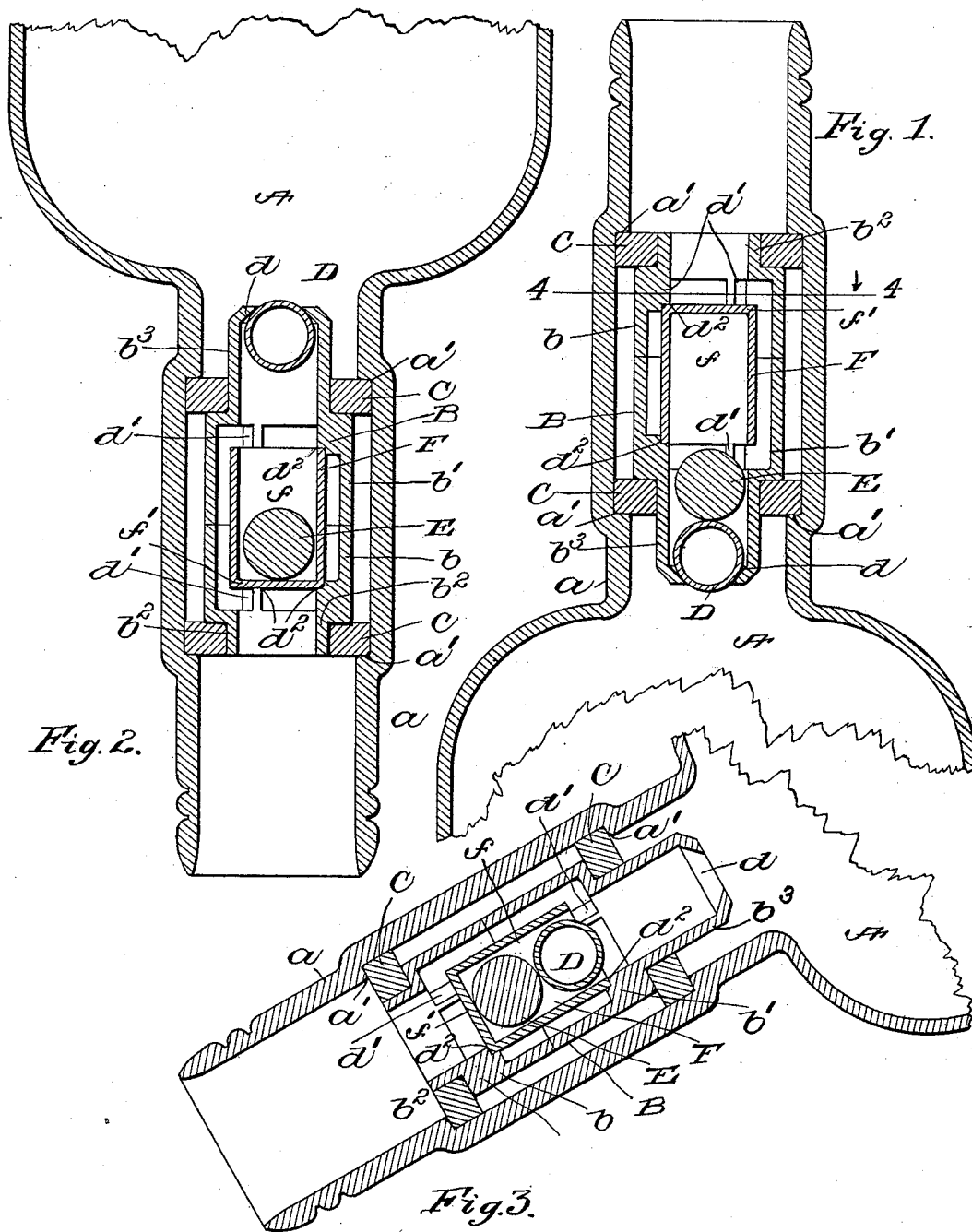
(No Model.)

2 Sheets—Sheet 1.

F. L. SIEGEL.
BOTTLE STOPPER.

No. 581,523.

Patented Apr. 27, 1897.



WITNESSES:

John D. Smith
Wm. S. Hodges

INVENTOR

Fredrick L. Siegel
BY *John D. Smith*
ATTORNEY.

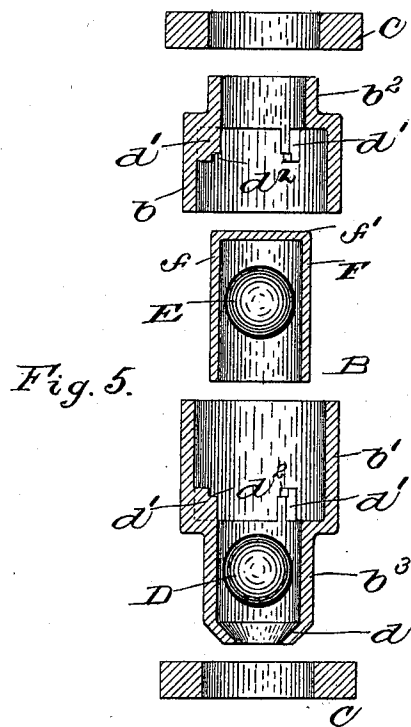
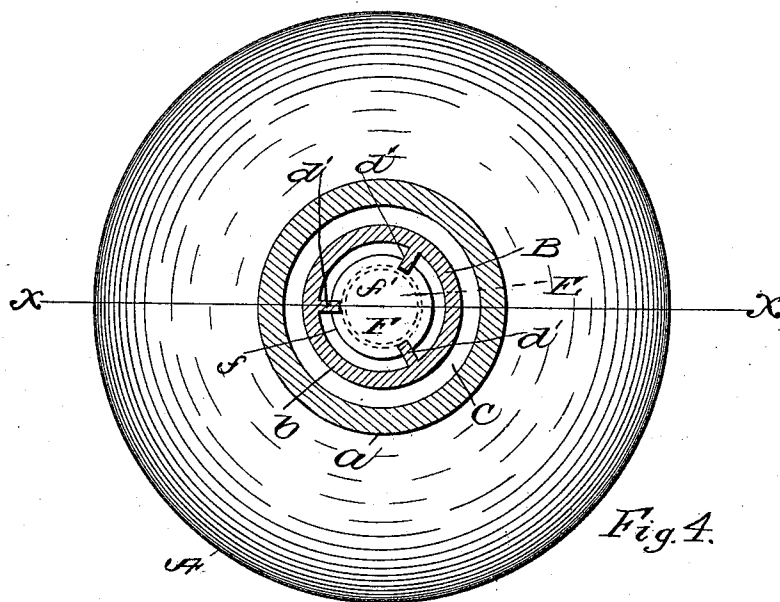
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F. L. SIEGEL.
BOTTLE STOPPER.

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No. 581,523.

Patented Apr. 27, 1897.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

FREDERICK L. SIEGEL, OF ATLANTA, GEORGIA.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 581,523, dated April 27, 1897.

Application filed September 8, 1896. Serial No. 605,165. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK L. SIEGEL, of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in bottle-stoppers, having reference to that class designed to prevent the reuse or refilling of a bottle after once emptied of its original contents and to prohibit the dilution of the contents of the bottle by the surreptitious introduction of another or different liquid.

The object of the present invention is to provide a simple and highly-efficient device which will instantly insure the closing of the opening in the bottle-neck in the event of any attempt to refill or recharge the bottle.

A further object is to insure the proper seating of the valve and allow the same to move out of the way in discharging or emptying the contents of the bottle, and also to provide for its being readily reseated in the event of any attempt to refill the bottle after once emptied.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of a portion of a bottle provided with my improved stopper, the section being taken on the line *x x*, Fig. 4. Fig. 2 is a similar view with the bottle inverted. Fig. 3 is likewise a sectional view showing the valve and float lowered into their guide or receptacle. Fig. 4 is a cross-sectional view on line 4 4, Fig. 1. Fig. 5 is a view showing the several parts of the stopper detached and in section.

Referring to the drawings, A designates a bottle, a portion only of which is shown; *a*, the neck thereof, and *a'* upper and lower interior flanges or shoulders.

B is a casing located within the bottle-neck. It is composed of two cylindrical sections *b b'*, having reduced end portions *b² b³*, around which fit cork rings C. These cork rings abut snug against the shoulders *a'* and serve to

hold the casing firmly within the bottle-neck. The end portion *b³* extends down into the bottle below the lower ring C, and its extreme end is inwardly flared, as at *d*, forming a valve-seat, but allowing sufficient opening for the outflow of the liquid confined within the bottle. The casing B is provided with upper and lower interior ribs *d'*, the corners of which are cut away, forming shoulders *d²*.

D is the valve, which is preferably made in the form of a hollow ball, so that it will float on the liquid, and even when the bottle is inverted for effecting the outflow will remain in close juxtaposition to the seat at *d*. A correspondingly-shaped solid ball E acts as a weight and holds the valve firm against its seat when the bottle is in its normal position.

F is a guide and receptacle designed to receive the weight when the bottle is tilted, and also accommodates the valve when the bottle is emptied and tilted. (See Fig. 3.) It consists of an open-ended cylindrical receptacle *f*, held fast within the casing B by the shouldered ribs *d'* and concentric to the closed end *f'* of said receptacle, facing the outer end of the bottle-neck, while the open end thereof is in line with the lower end portion *b³*, so that as the bottle is inverted the weight will roll into said receptacle. As this occurs the liquid will displace the float-valve and pass through the space surrounding the receptacle F and out through the end of the bottle-neck.

The positions occupied by the weight and the float-valve when liquid is being poured from the bottle are seen in Fig. 2, while in Fig. 3 I show the weight and valve in the receptacle F. They occupy this position when the bottle is emptied or when it is attempted to refill the bottle. In the latter event any liquid entering the bottle-neck, even by pressure, will cause the float-valve to rise and bear against its seat, thus preventing the inflow to the bottle. This would also occur should suction be applied by exhausting the air from the bottle when inverted or inclined. The space surrounding the receptacle F and between the ends of the latter and the opposed faces of the casing is sufficiently narrow to prevent the valve being controlled by a wire.

From what has been said it will be seen that I have provided extremely simple and

inexpensive means for locking the valve and its weight in the bottle-neck and that when once positioned the casing cannot be removed without damaging or breaking the bottle or stopper. The open-ended receptacle serves as a guide and holder for the weight and valve and insures the proper movement thereof in line with the normally lower opening of the valve-casing.

10 I claim as my invention--

1. A bottle having a valve in its neck, a cylindrical casing in said neck having a seat for said valve, and a receptacle located within and concentric to said casing, said receptacle 15 having a bore of uniform diameter open at one end in line with said valve-seat and held at opposite points against seats on the interior of said casing, substantially as set forth.

2. A bottle having a valve in its neck, a casing located in said neck having a contracted portion forming a valve-seat and interior shouldered ribs, a receptacle within said casing held by said ribs, said receptacle having an open end in line with said valve-seat, and 25 a weight for said valve, said receptacle being designed to receive and guide said valve and weight, substantially as set forth.

3. A bottle having a hollow spherical valve in its neck, a casing for said valve having a 30 central cylindrical portion and reduced ends, one of which is flanged to form a seat for said valve, said casing also having opposite in-

wardly-extending seats, a weight designed to hold said valve against said seat, and a hollow cylindrical receptacle open at one end in 35 line with said valve-seat, said receptacle being concentrically located within said casing and held against said inwardly-extending seats and designed to receive said weight and valve, as set forth, a uniform space between said re- 40 ceptacle and casing forming a passage-way for the liquid when the bottle is inverted, as stated.

4. The herein-described improved bottle having its neck provided with interior should- 45 ders, a two-part casing in said neck having reduced end portions and interior shouldered ribs, one of said end portions forming a valve-seat, rings surrounding said end portions and engaging said shoulders, an inverted open- 50 ended receptacle held in said casing by said shouldered ribs, a hollow spherical float-valve, and a spherical weight therefor, said receptacle being in line with said valve-seat and de- 55 signed to receive said weight and valve, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FREDERICK L. SIEGEL.

Witnesses:

JAMES BRIDGE,
PERINO BROWN.