(No Model.) 2 Sheets—Sheet 1.

L. FELUMB.

ANTIREFILLING BOTTLE.

No. 597,898. Patented Jan. 25, 1898.

FIG. 1.

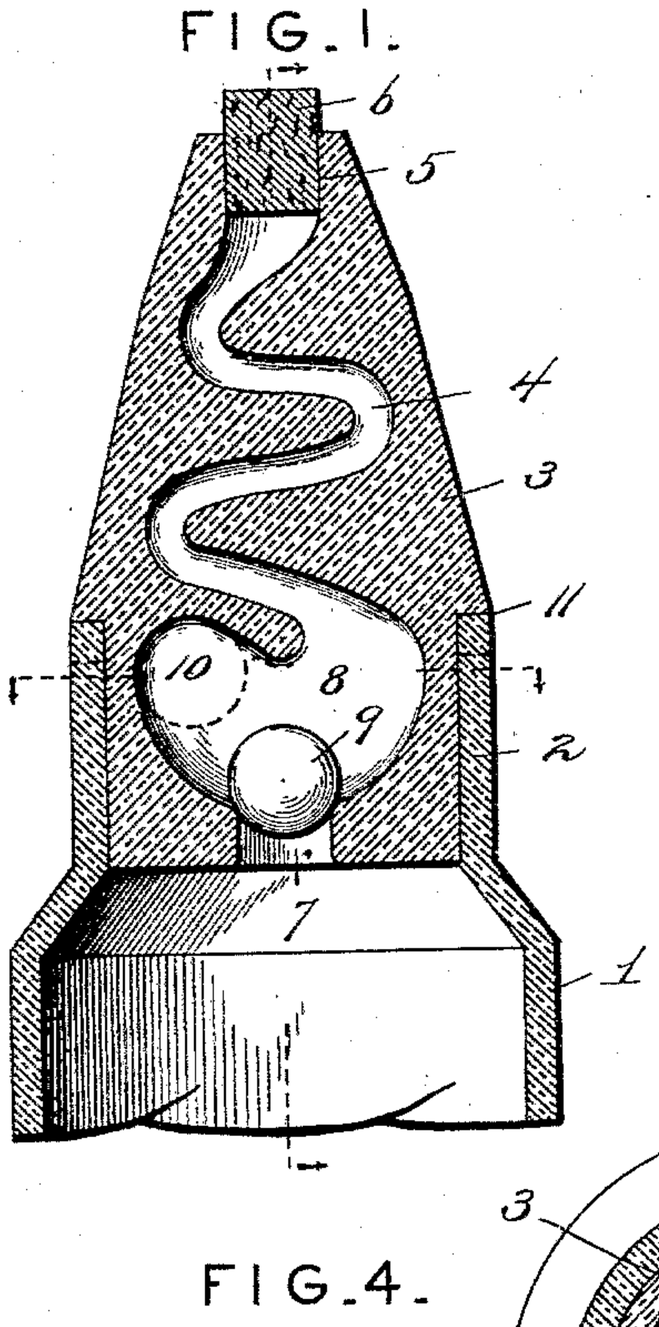


FIG. 2.

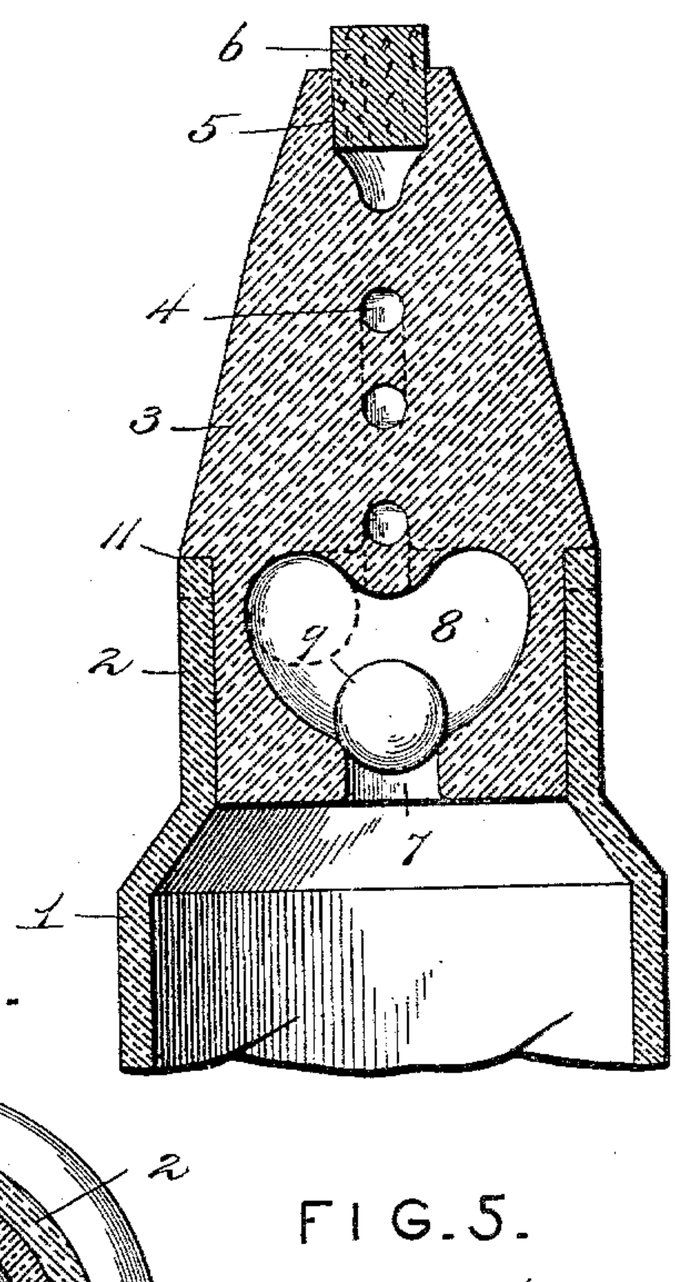


FIG. 3.

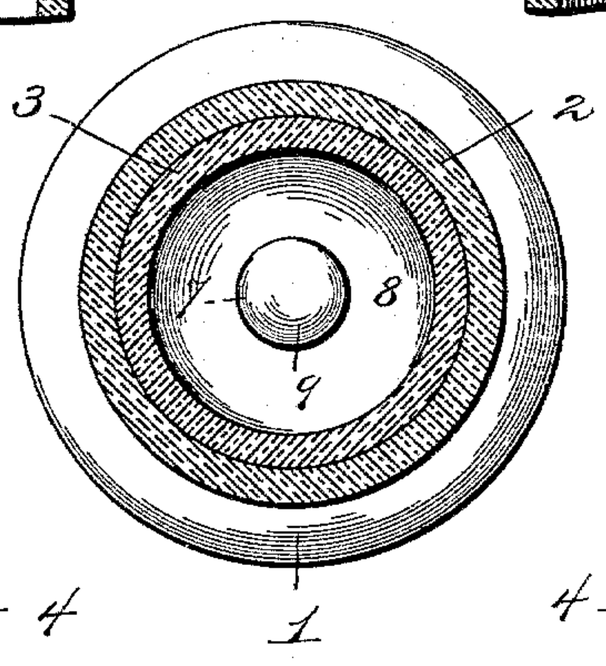


FIG. 4.

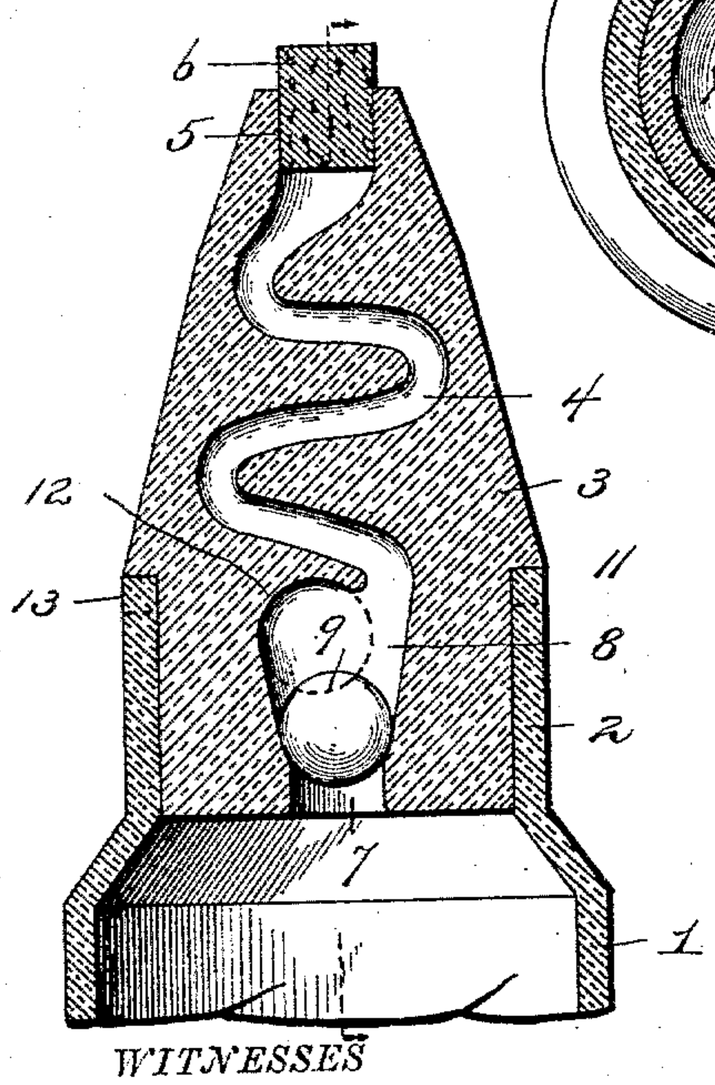
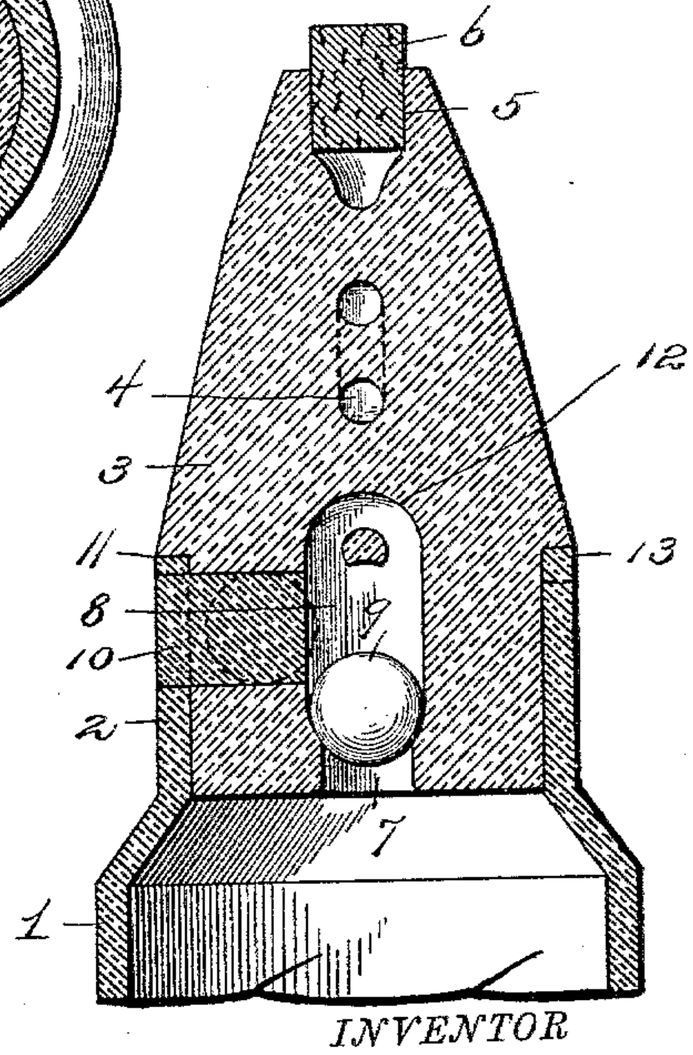


FIG. 5.



WITNESSES

Harry L. Amer.

A. W. Boynton.

INVENTOR

Louis Felumb.

by John Wedderburn

Attorney

(No Model.) 2 Sheets—Sheet 2.

L. FELUMB.

ANTIREFILLING BOTTLE.

No. 597,898. Patented Jan. 25, 1898.

FIG. 6.

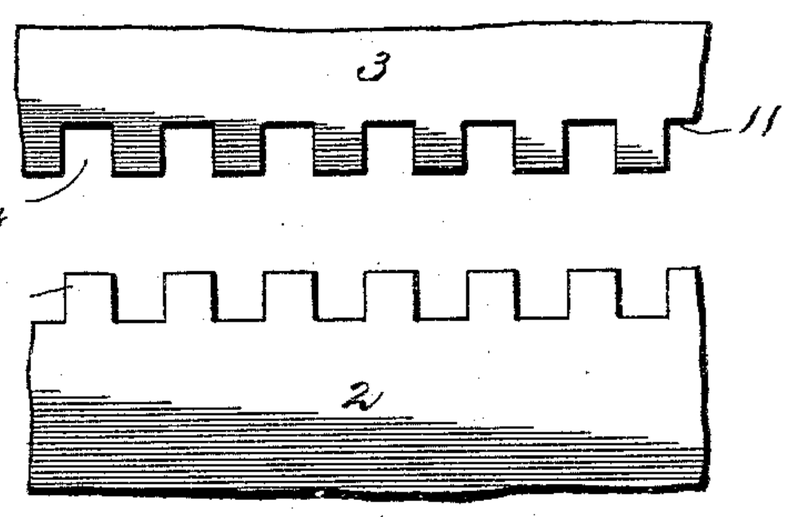


FIG. 7.

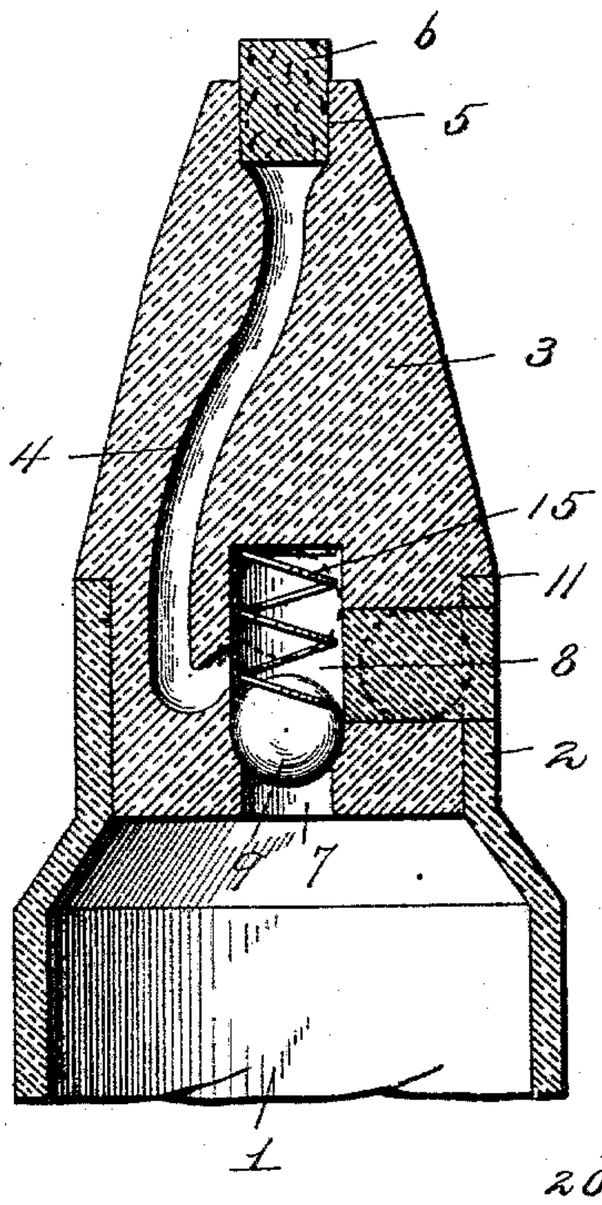


FIG. 8.

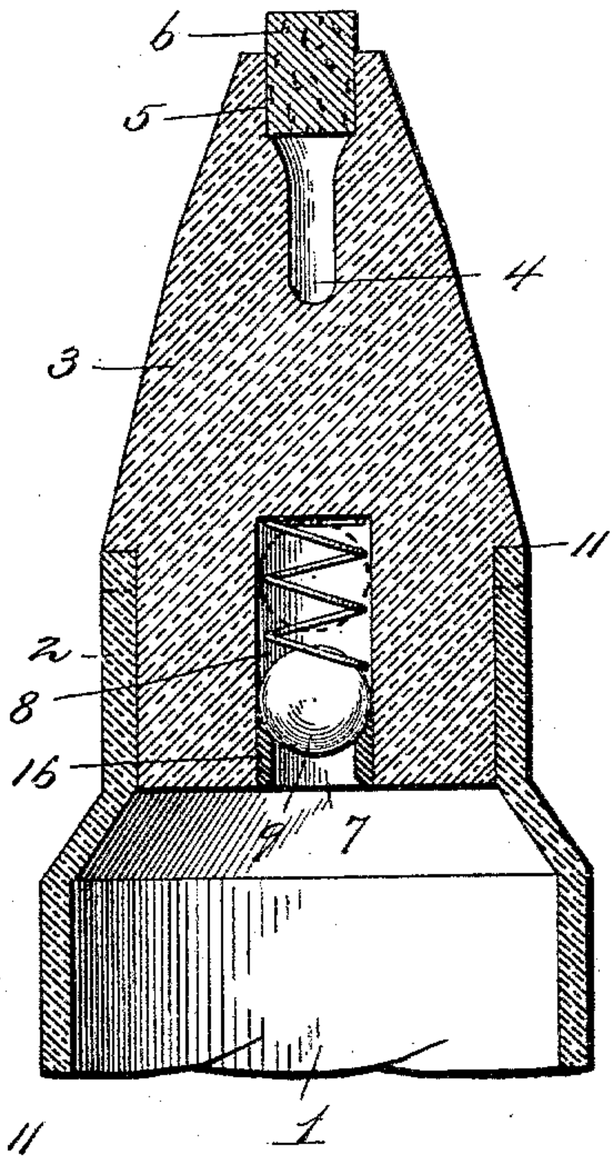
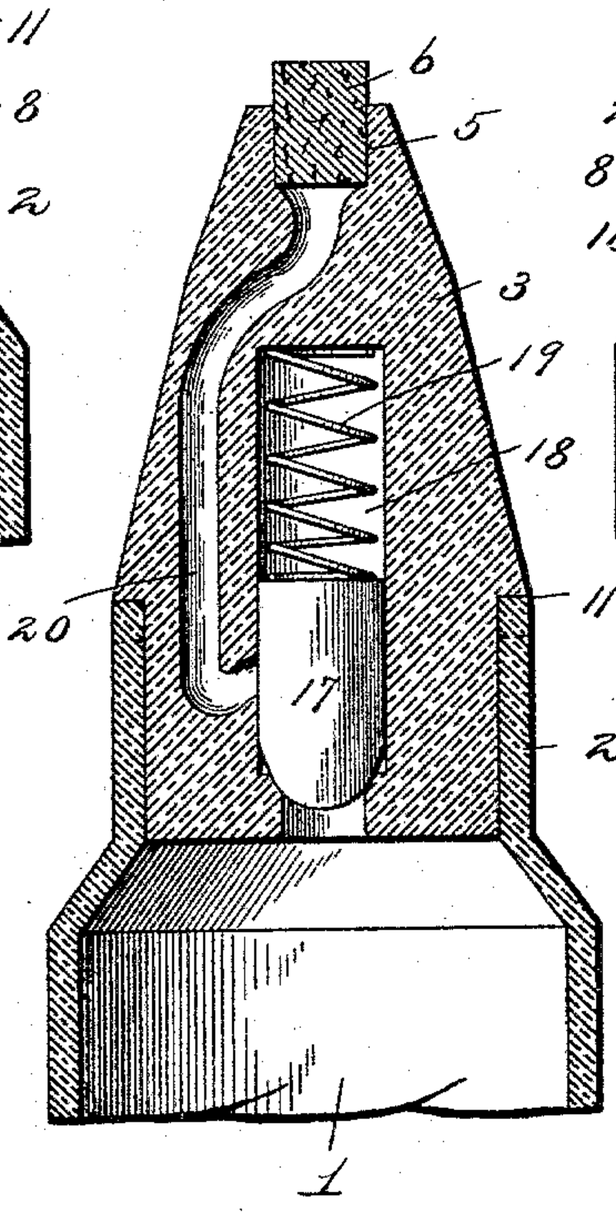


FIG. 9.



WITNESSES

Harry L. Amer.

R. H. Poynton

INVENTOR

Louis Felumb.

by John Wedderburn

Attorney

UNITED STATES PATENT OFFICE.

LOUIS FELUMB, OF FOREST CITY, IOWA.

ANTIREFILLING BOTTLE.

SPECIFICATION forming part of Letters Patent No. 597,898, dated January 25, 1898.

Application filed January 11, 1897. Serial No. 618,737. (No model.)

To all whom it may concern:

Be it known that I, LOUIS FELUMB, a citizen of the United States, residing at Forest City, in the county of Winnebago and State of Iowa, have invented certain new and useful Improvements in Antirefilling Bottles; 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.

The invention relates to antirefilling bottles, and is designed to prevent the fraudulent refilling of a bottle with liquid after the same has once been emptied of its original contents, thereby protecting the maufacturers of liquid goods against further and renewed use of the bottle for the sale of spurious or adulterated goods of a similar character.

With the above general object in view the invention consists in an improved antirefilling bottle embodying certain novel features and details of construction, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of a bottle constructed in accordance with this invention. Fig. 2 is a similar section taken at right angles to Fig. 1. Fig. 3 is a horizontal section taken through the neck portion of the bottle. Figs. 4 and 5 are sectional views illustrating a slight modification in the form of the cavity for the ball-valve. Fig. 6 is a detail elevation. Fig. 7 is a view showing the valve held in place by a spring. Fig. 8 is a similar view showing a modification whereby the ball may be placed in the neck through the lower end of the valve-cavity. Fig. 9 is a sectional view of the neck of the bottle, showing a slight modification.

Similar numerals designate corresponding parts in the several figures of the drawings.

The body 1 of the improved antirefilling bottle contemplated in this invention may be of any usual or preferred form; but in order to adapt the same more perfectly to the present improvement the neck 2 of the bottle is made rather larger than ordinarily in order to receive the stopper or false neck, in which the main feature of this invention is incorporated. This false neck or stopper (indicated at 3) is substantially solid in cross-section, except as it is provided with a sinuous passage 4, extending from the top to the bottom thereof and opening out at the top in an expanded mouth portion 5, which is adapted to receive a removable cork 6. Said passage also opens out at the bottom of the false neck or stopper 3, as indicated at 7, and adjacent to said lower opening the passage is widened to form an enlarged and substantially hemispheroidal cavity 8, in which is seated a ball-valve 9. Extending laterally from this enlarged cavity 8 is a radial bore 10, which opens out at the side of the neck and affords a passage large enough to permit of the introduction into the cavity 8 of the ball 9.

The false neck or stopper 3 is made of tapering or conoidal form as to its upper portion, or that portion which extends outside of the neck proper of the bottle, and the lower portion of said false neck or stopper is of a size adapted to fit snugly within the neck 2 of the bottle. At an intermediate point the part 3 is provided with an annular shoulder 11, adapted to fit against the top edge or rim of the bottle-neck, and said false neck or stopper is secured within the neck of the bottle by cementation or in any other desired manner after the ball-valve has been inserted therein through the opening 10.

In Figs. 4 and 5 I have illustrated a slight modification in the form of the cavity in which the ball-valve is seated. Instead of making this cavity in hemispheroidal form, as shown in Figs. 1 and 2, it is made in conicocylindrical form, being of just sufficient diameter at its lower portion to form a seat for the valve 9 and slightly larger in diameter at its top, where it is also concaved, as indicated at 12, to form a rest for the valve when the bottle is inverted. When the bottle is inverted and the ball-valve rests against the seat 12, a portion of said valve still projects across the plane of the sinuous passage 4, so that in any attempt to refill the bottle by inverting and submerging it in the liquid the inflowing of the liquid will cause the valve to seat itself at the point where the passage opens into the bottle just the same as though the bottle were not inverted.

By means of the construction above described it will be seen that it is a matter of

impossibility to unseat the valve 9 so as to allow of the refilling of the bottle, for the reason that the sinuous passage 4 will admit of nothing being inserted therethrough so as to reach and displace the valve 9. In emptying the bottle it will of course be apparent that when the bottle is inverted the ball 9 will become unseated, thereby allowing the liquid to flow out of the bottle. As soon, however, as the bottle is placed in its upright position the ball 9 will immediately seat itself, and thereby defeat any attempt to refill the bottle. A stopper of cork or glass may be inserted in the bore 10.

In order to prevent the neck from being removed and used upon another bottle, the top edge of the bottle is provided with a series of square projections 13, and the shoulder 11 of the neck is correspondingly notched, as at 14, to receive said projections.

In Fig. 7 I have shown a spring 15, of spiral form, the same being arranged above the ball and between said ball and the upper end of the cavity. This spring serves by expansion to maintain the ball in contact with its seat at all times except when the bottle is inverted for pouring out the liquid. When the bottle is inverted, the weight of the ball overcomes the tension of the spring and effects an opening of the contracted passage communicating with the ball for allowing the liquid to escape. The spring 15 is preferably formed from a piece of silver in order to prevent corrosion and injury to the contents of the bottle.

In Fig. 8, instead of making a cylindrical opening for the introduction of the ball through the side of the neck, the valve-cavity is shown as made of sufficient size where it communicates with the interior of the bottle to admit the ball through the lower or inner end of the neck before said neck is secured to the bottle. Where this is the case, a ring 16, of rubber or similar material, is introduced into the lower part of the valve-cavity after the ball has been introduced, said ring being secured in place by cementation or otherwise and forming the valve-seat.

In lieu of the ball-valve heretofore described a cylindrical valve 17 may be employed having a rounded lower end for closing the entrance to the body of the bottle, and the cylindrical cavity 18, in which the valve is mounted, may be expanded sufficiently to receive a light coiled spring 19, which serves to force the valve to its seat. The passage 20, leading from the mouth of the bottle to the cavity 18, may be arranged at one side of said cavity, so as to communicate therewith only at a point just above the entrance to the body of the bottle. By this arrangement the valve 17 at one and the same time closes the passage 20 and the entrance to the body of the bottle, thus effecting a double closure and preventing any possibility of the bottle being refilled, while at the same time allowing the contents to be readily poured out.

The device is susceptible of changes in the form, proportion, and minor details of construction, which may accordingly be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a bottle, of a false neck adapted to be fitted permanently thereto and having a sinuous passage leading from end to end, the lower portion of said passage being widened to form an enlarged cavity, said neck also having a lateral opening communicating with said cavity to admit of the introduction of a valve, a valve seated in said cavity and serving to close said sinuous passage, and a spring arranged behind said valve for pressing the same to its seat, substantially as described.

2. The combination with a bottle, of a false neck or stopper adapted to be fitted permanently therein and provided with a sinuous passage leading from top to bottom thereof, and having its lower portion widened to form an enlarged cavity as described, said false neck or stopper being further provided with a lateral opening communicating with said cavity and admitting of the introduction of a ball-valve, and a ball-valve seated in said cavity and serving to close said sinuous passage, substantially as and for the purpose described.

3. A bottle-stopper provided with a sinuous passage leading from top to bottom thereof and having its lower portion expanded to form an enlarged cavity and valve-seat, and a ball-valve seated in said cavity and closing said passage, said stopper being further provided with a radially-disposed opening leading outward to the exterior surface of the stopper for admitting the introduction of said valve, substantially as described.

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

LOUIS FELUMB.

Witnesses:
ANDREW HILSENHOFF,
HENRY JOHNSON.