

C. DORN & N. REINSTINE.
BOTTLE STOPPER AND BOTTLE.

Patented Oct. 13, 1896.

Fig. 2.

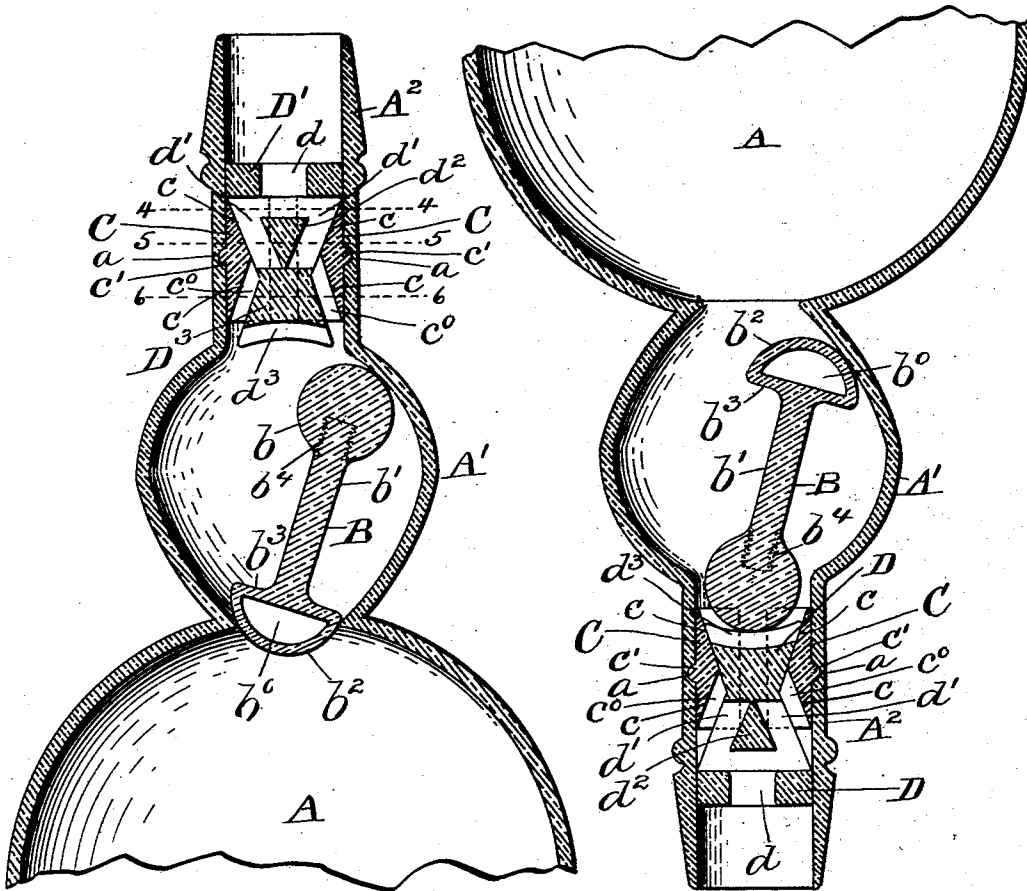


Fig. 3.

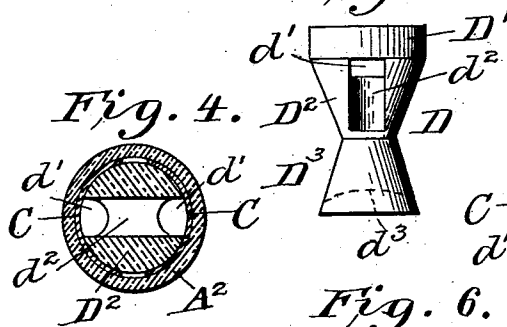


Fig. 5.

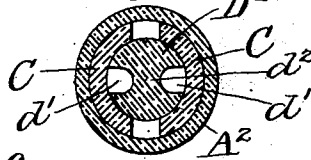
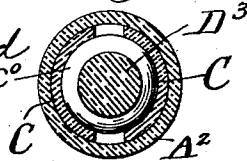


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHRISTIAN DORN AND NATHAN REINSTINE, OF PHILADELPHIA,
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BOTTLE-STOPPER AND BOTTLE.

SPECIFICATION forming part of Letters Patent No. 569,181, dated October 13, 1896.

Application filed December 2, 1895. Serial No. 570,754. (No model.)

To all whom it may concern:

Be it known that we, CHRISTIAN DORN and NATHAN REINSTINE, citizens of the United States, residing at Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppers and Bottles; and we 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.

Our invention relates to improvements in bottle-stoppers; and it consists in certain novel means for preventing the refilling of the bottle after it has once been filled and the said stopper has been inserted.

The said stopper is intended to allow liquids to be poured out of the bottle but not to be put back in the bottle after the said stopper has been inserted, and it is intended to be used in combination with the ordinary cork or seal.

The said invention will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a central vertical section through the neck and upper part of a bottle constructed according to our invention. Fig. 2 represents a similar section to that shown in Fig. 1, except that the bottle is inverted. Fig. 3 is a side elevation of the double cone or wedge which serves to lock the parts in place and to afford a tortuous channel for the passage therethrough of the liquid contained in the bottle. Fig. 4 represents a section along the line 4 4 of Fig. 1 and looking down. Fig. 5 represents a section along the line 5 5 of Fig. 1 and looking down, and Fig. 6 represents a section along the line 6 6 of Fig. 1 and looking down.

A represents the body of the bottle, which is provided with a pear-shaped chamber A' at the base of the neck thereof, which chamber terminates in the cylindrical portion or neck proper, A². This neck is provided with an annular groove *a* on the interior surface thereof to engage the locking-pieces C, as will be hereinafter described.

In the pear-shaped chamber A' is the valve

B, which valve consists of the solid ball *b*, the stem *b'*, and the hollow hemisphere *b*², which is preferably hollowed out, as at *b*⁰, and is shouldered, as at *b*³; but the upper portion of this hemisphere may be of any desired shape. The valve may be made in one piece or the stem *b'* may screw into the ball *b*, as shown in dotted lines at *b*⁴, or the valve may be made of several pieces, if preferred, or the ball *b* may be made of heavier material than the rest of the valve, if preferred. This valve B is preferably made of glass, porcelain, or the like, as are also the various other parts of our invention, which will be hereinafter described, the purpose being to have all of these parts made of some material that will not affect the taste of the liquid contained in the bottle.

The locking-pieces C are two or more in number, and they are so made as to fit in the space between the double cones D² and D³, and to form, when pressed in closely to the said cones, a practically cylindrical body, the maximum diameter of which shall not be greater than the inner diameter of the neck of the bottle into which the said cones and the said locking-pieces are to be inserted. These locking-pieces C having sloping faces *c* on the inside thereof and on the outside are provided with an annular rib *c'*, adapted to engage in the annular groove *a* when the said locking-pieces are pressed outward, as will occur when the parts are in the proper position, as shown in Fig. 1.

The wedge-piece D is provided with an annular cap D', perforated, as at *d*, which perforation opens into the passages *d'* on either side of the connecting-ribs *d*², which bind the two sides of the upper cone D² together. The lower cone D³ is preferably grooved at its bottom, as at *b*³, to lessen weight and facilitate the pouring out of the liquid. These two truncated cones D² and D³ are joined together near their apices, and the whole wedge-piece is preferably made of a single piece of glass or pottery or like material, though any other suitable material may be used, if desired.

In order to assemble the parts in their proper position, the valve B is first inserted

through the neck of the bottle, light or hollow end foremost, until the said hollow end or hemispherical portion rests upon the valve-seat a' , which is somewhat less in diameter than the cylindrical portion of the neck of the bottle. The wedge-piece and the locking-pieces are now fitted together as snugly as possible and, the bottle being laid in a position somewhat inclined to the vertical, these parts are slipped into the neck of the bottle and pushed down gently. As soon as the locking-pieces pass downward far enough the ribs c' will catch in the groove a . The wedging effect of the upper cone D^2 will cause these locking-pieces to spread out laterally until the ribs c' project wholly into the groove a , in which position the said locking-pieces cannot be forced either up or down without breaking either parts of the stopper or the neck of the bottle. If the bottle be laid on its side, one of these locking-pieces will still hold in place, while the other may drop out of its groove, but it will be impossible except under very abnormal conditions, if at all, for both or all of the locking-pieces to become disengaged at once.

It will be seen that when the bottle is turned upside down, as indicated in Fig. 2, the cone D^3 will keep the locking-pieces distended.

The bottle should of course be filled with the liquid before the non-filling attachment is put in place.

By an inspection of Figs. 1 and 2 it will be seen that liquid may be poured out of the bottle, passing through the openings c^o d' d and the neck of the bottle; but when it is desired to fill the bottle after it has been wholly or partly emptied the valve B will fall on its seat a' and will thus effectually guard the interior of the bottle against pressure from without.

The upper end of the valve B is made heavier than the lower end, so that if the chamber A' be filled full of liquid, as by pouring in from the top of the bottle, the heavy upper end of the valve B will not float in the liquid and lift the valve off its seat, while the pressure on the back b^3 of the valve proper will tend to hold the same firmly on its seat.

It will thus be seen that a bottle of peculiar make is provided, which of itself might be used to indicate the character of the liquid contained therein with or without the addition of labels or other marks, and that the said bottle will effectually protect the vender against the sale of spurious liquors by rendering it impossible to refill the bottle without breaking the same or some part thereof in such a manner as to show that the same has been tampered with.

While we have described the bottle as such, it will be obvious that the said invention might be applied to jugs, demijohns, or other like vessels intended to contain adulterable liquids or such liquids as are subject to fraudulent imitation.

The various other advantages of the herein-

described construction would readily suggest themselves to any one skilled in the art.

It will be obvious that many modifications of the herein-described device might be made which could be used without departing from the spirit of our invention.

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

1. A non-fillable bottle, jug or the like, provided with a cylindrical neck with an annular groove therein, a bulb-shaped chamber at the base of said neck with an opening at the base of the said chamber of smaller diameter than the said neck, a weighted valve mounted in said bulb-shaped chamber, a plurality of locking-pieces provided with a rib adapted to engage in said annular groove in said neck, and a double conical wedge-piece having a tortuous passage therethrough and adapted to engage said locking-pieces, substantially as described.

2. A non-fillable bottle, jug or the like, provided with a cylindrical neck, with an annular groove therein, a bulb-shaped chamber at the base of said neck with an opening at the base of the said chamber of a smaller diameter than the cylindrical portion of said neck, a valve consisting of a stem, a solid ball at the upper end of said stem, and a hollow rounded bulb at the lower end of said stem adapted to rest on the walls of said opening at the base of said chamber, locking-pieces provided with ribs adapted to engage in said annular groove and means for forcing said locking-pieces outward and for holding them in position, and for guarding the passage between them, substantially as described.

3. A device for preventing the refilling of bottles comprising a valve located near the base of the neck of the bottle, a plurality of locking-pieces having ribs adapted to engage in corresponding grooves in the neck of the bottle, a perforated wedge-piece in the form of two truncated cones connected together near their apices and serving to wedge said locking-pieces outward and to guard said valve, substantially as described.

4. The combination with a bottle provided with a bulb-shaped chamber at the base of the neck thereof, and an annular groove in said neck, of a check-valve in said chamber, a plurality of locking-pieces having ribs adapted to engage in corresponding grooves in the neck of the bottle, a perforated wedge-piece in the form of two truncated cones connected together near their apices and serving to wedge said locking-pieces outward and to guard said valve, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHRIST. DORN.
NATHAN REINSTINE.

Witnesses:

JOHN H. SLIFER,
C. E. TIMMINS.