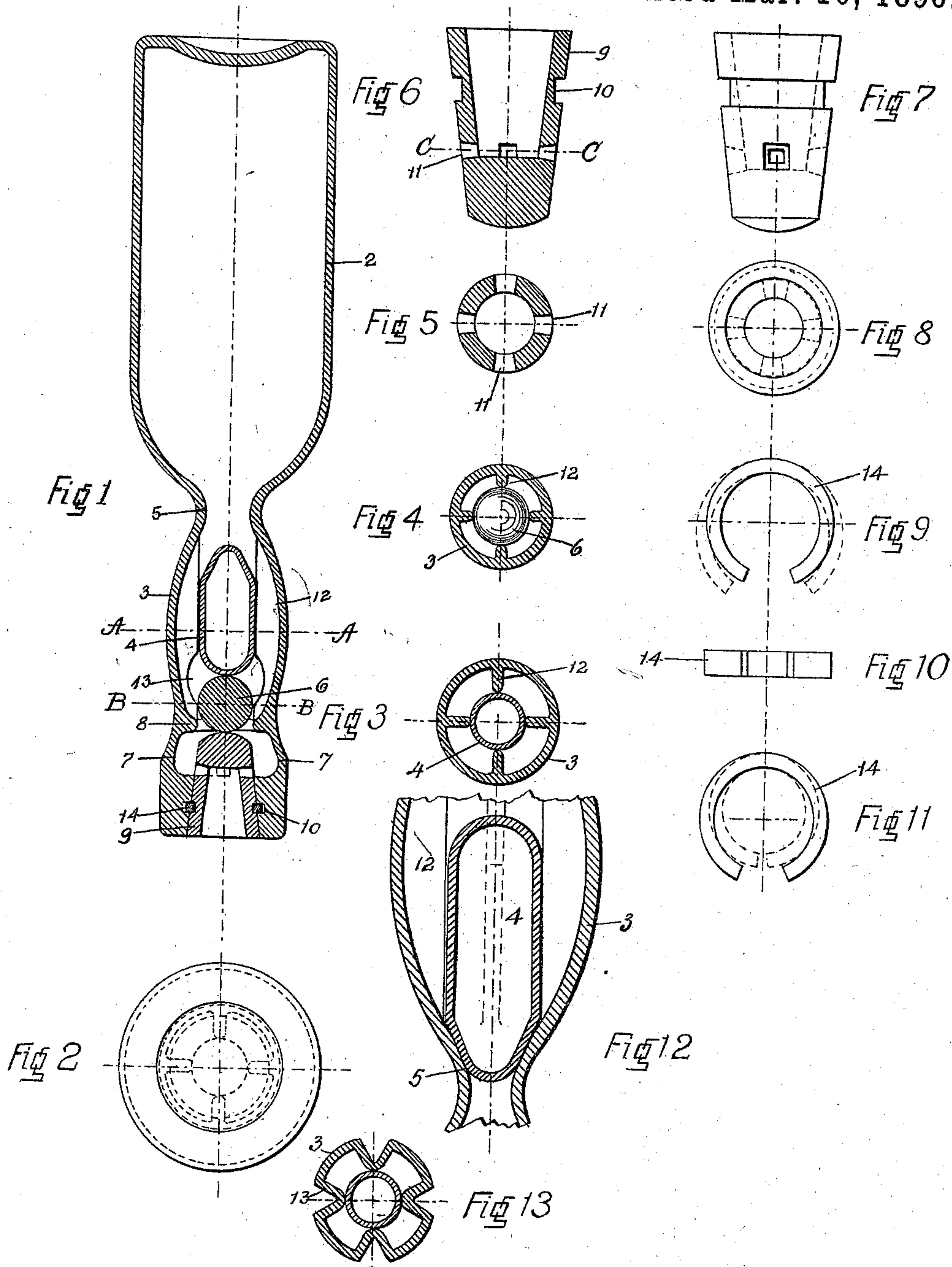


(No Model.)

A. BRENZINGER.
NON-FILLABLE BOTTLE.

No. 555,923.

Patented Mar. 10, 1896.



WITNESSES:

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NON-FILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 555,923, dated March 10, 1896.

Application filed February 14, 1895. Serial No. 538,454. (No model.)

To all whom it may concern:

Be it known that I, ADAM BRENZINGER, a citizen of the United States, and a resident of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Non-Fillable Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts in all the figures.

The object of my invention is to produce a bottle or vessel which, having been once filled and emptied of its contents, cannot be again refilled or used for any purpose whatever, whereby I provide means for defeating frauds frequently practiced on the proprietors of certain forms of liquors, cordials, medicines, and similar articles, which are usually bottled by the proprietors and which heretofore have been extensively counterfeited by unprincipled persons by simply refilling the bottles with articles of their own production or with articles of the same general class as those originally contained by the bottles, but of a cheaper variety or worthless make.

In the drawings forming part of this specification, Figure 1 is a central vertical section of my bottle inverted. Fig. 2 is a plan view thereof. Fig. 3 is a section on the line A A of Fig. 1. Fig. 4 is a section on the line B B of Fig. 1. Fig. 5 is a section of the stopper employed by me, on the line C C of Fig. 6. Fig. 6 is a central vertical section of said stopper. Figs. 7 and 8 represent said stopper in elevation and plan view, respectively. Figs. 9, 10, and 11 are different views of a ring or locking device employed to secure the stopper in position. Fig. 12 represents a detail of the construction in vertical section, and Fig. 13 a modification of the construction shown in Fig. 3. Of these views Figs. 1, 2, 3, and 13 are on the same scale, while Figs. 5, 6, 7, 8, 9, 10, 11, and 12 are on an enlarged scale.

Referring to the drawings, the reference-numeral 2 designates the body of a bottle provided with my improvement; 3, the neck thereof; 4, a valve employed in said neck; 5, a valve-seat for the valve at or near the lower end of the neck of the bottle; 6, a ball or weight

which operates in connection with the valve; 7, an enlarged chamber at the upper end of the neck of the bottle; 8 an internal annular flange or rim which separates the said chamber from the neck proper; 9, the stopper, which is of the form and construction shown in Figs. 5, 6, 7, and 8, and is provided with an annular cavity 10 and ports or openings 11, the purposes and operation of which will be hereinafter described.

In addition to the details above indicated, it will be observed that the neck of the bottle is provided with interior vertical or longitudinal ribs or corrugations, which are preferably cut away near the top thereof, as shown at 13. Instead of forming these ribs 13 on the inner surface of the neck, as shown in Figs. 3 and 4, they may, if desired, be formed by simply fluting or corrugating the walls of the neck, as shown in cross-section in Fig. 13.

The valve 4 is preferably of the general form shown in Figs. 1 and 12, being cylindrical in its central portion and from two to three times greater in length than its transverse diameter. It is also preferably rounded at the top and conical at the lower end, its lower portion being designed to form a valve which, when seated upon the valve-seat 5 at the lower end of the neck of the bottle, will completely close this opening. This valve preferably made of glass, is hollow, in order to reduce its gravity to such an extent that it will float easily in any liquid for which the bottle may be used. In Fig. 1 it is shown in its highest position, which it will only occupy when the bottle is in a more or less inverted position. In all other positions of the bottle the position of the valve will be that shown in Fig. 12.

The valve 4 is guided in its movement in the neck of the bottle or held in a vertical position by means of the ribs or longitudinal projections 12 formed on the inner surface of the neck of the bottle, as shown in Figs. 1, 3, and 4. If, for any reason, however, it might be found difficult to construct the bottle as here shown, the form of construction shown in Fig. 13 may be substituted, the ribs or guides in this case being formed by simply fluting or corrugating the walls of the neck itself, as hereinbefore stated. In the position of the

valve here described its longitudinal center line is always the same, or very close to the longitudinal center line of the neck of the bottle. The ribs or guides 12 are so formed
 5 as to permit of the free movement of the valve between them, or in the position shown in Figs. 3 and 12. They are also rounded off on their edges, so as to present the least possible surface of contact between them and the
 10 valve, the surface of contact between each rib and the valve being in fact one straight line. The mouth of the bottle, as shown in Fig. 1, is preferably conical in form, with the wide part upward, and is supplied with the annu-
 15 lar groove 10', which is wide enough to admit the ring 14, and also to permit said ring to be slipped over the stopper when inserted. This ring may be made of steel, iron, rubber, or any elastic material hard enough to stand
 20 the strain required. It will be observed that the annular groove 10 in the stopper coincides with the groove in the neck of the bottle, and when the stopper is pressed into position the form and construction of the ring 14 are such
 25 as to occupy or fill, at least partially, both of these chambers or grooves, and said stopper cannot be removed without destroying the bottle. It is evident that other forms of a lock may be used in place of this ring, as a firm
 30 and hard cement, for instance, or another device that may be found suitable. The stopper 9 has also, as shown, a central conical opening designed to receive the usual cork, the bottom of said opening being closed and the
 35 side walls of the stopper provided with a series of radial ports or openings 11, through which the liquid passes in the process of emptying the bottle.

When the bottle is to be filled the liquid is
 40 poured in until it reaches almost to the flange or inner annular rim 8, when the valve 4 is inserted, as shown in Fig. 1. The ball 6, which is also preferably of glass or other similar material, is then inserted, when the valve 4 will
 45 assume the position natural to it when the bottle is filled. After this the ring 14 is slipped into the mouth of the bottle and pressed down until it enters the annular chamber or groove
 50 10', in which position a portion of said ring will be in said groove and a portion thereof will extend inward toward the center of the mouth of the bottle. The stopper, which is also of glass or similar preferred material, is then placed in position and pressed downward
 55 into the mouth of the bottle, in which operation it will separate farther the parts of the ring, as shown by dotted lines in Fig. 9. As soon, however, as the stopper reaches the position shown in Fig. 1, the groove 10 formed
 60 therein is adjacent to the corresponding groove formed in the neck of the bottle, and the separate ends of the ring will again contract, in which position said ring will occupy at least partially both of said annular grooves
 65 or chambers, whereby the removal of the stopper is rendered impossible. The central conical

opening of the stopper may then be closed in the usual manner or in any other desired way.

If it is desired to empty the bottle the cork
 70 is simply removed in the usual manner and the bottle held in the usual position, when the liquid will flow out, during which process the ball-valve will roll forward close to or against the lower end of the stopper and the valve
 75 will be pressed against it by the current of the liquid until the bottle has been emptied. If, now, an attempt should be made to refill the bottle, it is evident that if held in a vertical position, or in any position in which the
 80 head or mouth of the bottle is higher than the body thereof, the valve 4 would, by its own gravity and the weight of the ball 6, be immediately seated on the valve-seat 5 at the lower extremity of the neck of the bottle, and
 85 no fluid could find ingress thereto. In this position the valve will not float, as its own weight, together with that of the ball, is sufficient to keep it seated on the valve-seat 5. If the bottle were held in a horizontal posi-
 90 tion and an attempt made to fill it, the valve would rest on one or more of the ribs 12. The ball-valve 16 would roll down into the cut-away portions 13 of said ribs or guides, and by so doing shift the valve again and cause it
 95 to again seat itself, as hereinbefore described, the cut-away portions 13 of the ribs or guides being especially designed to admit of this operation of the ball, while the inner annular flange or rim 8 is designed to prevent the in-
 100 troduction of any foreign substance, such as a wire or similar device, by which the valve might be operated or raised from its seat. This operation of the ball in holding the valve seated when the bottle is in a horizontal po-
 105 sition is aided by the fact that the lowest portion of the cut-out 13 is nearer the seat of the valve than is the upper end of the valve itself.

In any position with the head of the bottle lower than the body the ball of the valve will
 110 move as far toward the stopper as possible. Should an effort be made to introduce any liquid in this position, the valve will float on the liquid, and before the latter could reach the body of the bottle the valve would be
 115 seated and the entrance to the body of the bottle closed by the pressure of the liquid itself. The operation would be exactly the same should the air be pumped out of the bottle, because with air in the bottle it could
 120 not be filled in an inverted position.

It is evident that many changes might be made in the construction herein described without departing from the scope of my invention, and I do not, therefore, limit myself
 125 to the exact form of construction shown; but,

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

1. The combination of a bottle having an
 130 enlarged neck and the interior ribs 13, a seat 5 in the lower portion thereof, a long hollow

valve 4 conforming substantially to the shape of the neck and maintained in position by the ribs 13, an annular flange 8, a ball or weight arranged on the upper end of the valve and
5 operating beneath the flange 8, an enlarged chamber 7, an annular groove 10', a stopper having a central conical cork-receiving opening and radial ports 11 communicating with said opening an annular groove 10 and a ring
10 14 arranged to fit in the grooves 10, 10', substantially as described.

2. The combination of a bottle having an enlarged neck and the interior ribs 13, a seat 5, in the lower portion thereof, a long hollow
15 valve 4 conforming substantially to the shape of the neck and maintained in position by the ribs 13, an annular flange 8, a ball or weight arranged upon the upper convex end of the

valve, operating beneath the flange 8, the cut-aways in the ribs 13 between the flange 8 20 and the upper end of the valve 4, into which cut-aways the ball will roll when the bottle is in a horizontal or partly-inverted position, thus closing the valve in these positions; the conical stopper with a convex lower end, to 25 facilitate the movement of the ball and ring 14, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 8th day of Feb- 30 ruary, 1895.

ADAM BRENZINGER.

Witnesses:

OTTO MAIER,
C. GERST.