

(No Model.)

C. H. NEWBURY.

CONSTRUCTION OF NON-REFILLABLE BOTTLES.

No. 594,270.

Patented Nov. 23, 1897.

Fig. 1.

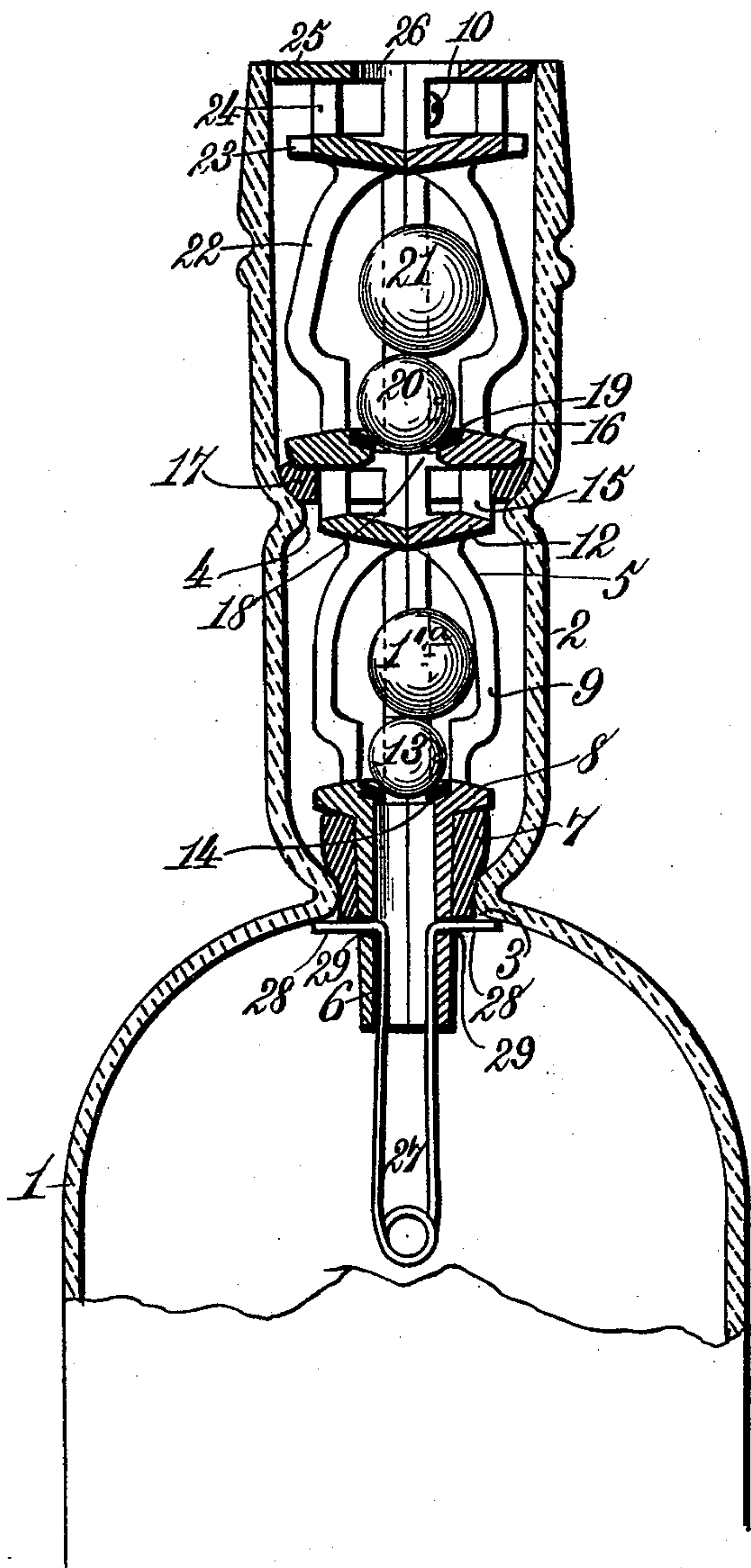
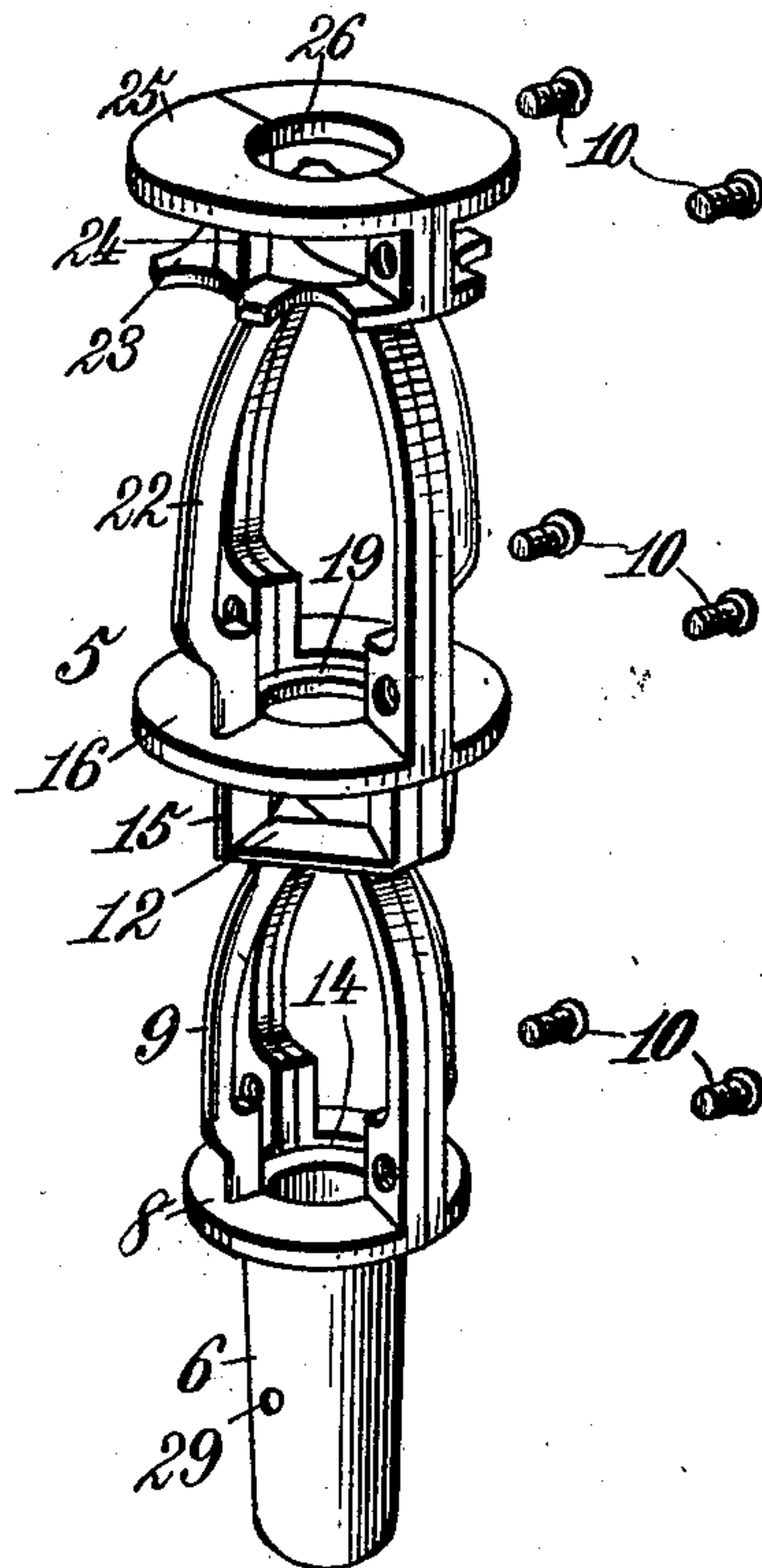


Fig. 2.



Witnesses,
Robert Courtt.

J. B. Keefe

Inventor.
Charles H. Newbury.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

CHARLES H. NEWBURY, OF ST. PAUL, MINNESOTA.

CONSTRUCTION OF NON-REFILLABLE BOTTLES.

SPECIFICATION forming part of Letters Patent No. 594,270, dated November 23, 1897.

Application filed August 3, 1897. Serial No. 647,003. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. NEWBURY, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to non-refillable bottles, being especially designed for bottles containing rare and costly liquors, although it is capable without any material change of being used in conjunction with any bottle used in putting up other substances which may be either counterfeited or adulterated.

It is my aim to provide a bottle that can be quickly and easily filled in the ordinary manner and when full converted into a non-refillable bottle by the simple insertion within the neck of a combination-frame containing ball-valves and gravity-balls resting upon the ball-valves, the frame being provided with automatic means for locking it within the bottle-neck in such manner that it cannot be withdrawn afterward without fracturing the glass, nor can any fluid be introduced in the bottle after it is emptied or partly emptied.

My invention also comprises other novel features and arrangements of parts which can be more easily understood from the description.

To enable others to fully understand and to make and use my said invention, I will now proceed to explain the same, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a bottle-neck and a portion of the body, showing the construction and application of my invention. Fig. 2 is a perspective view of the insertible frame removed from the bottle-neck, the ball-valves, gravity-balls, and cork cushions being removed and the screws which fasten the two parts of the frame together being shown removed from the latter but occupying their proper relative positions.

The reference-numeral 1 in said drawings indicates a bottle of any suitable shape and size, according to the character of the bottled goods. The body 1 is provided with a neck 2, which is of the usual length or thereabout, and which differs from the neck of an ordinary bottle by having a contracted opening

3 at the point where it unites with the body 1 and an inwardly-projecting circular rib 4 at or near the middle of the neck. The diameter of said neck above the opening 3 is usually somewhat in excess of that of the ordinary bottle.

The bottle is filled in the ordinary way—that is to say, by pouring the liquor in by the aid of a funnel or by any suitable form of bottling mechanism.

When properly filled, the following means are used to prevent refilling and at the same time permit the original contents to be withdrawn in any desired quantity.

The reference-numeral 5 denotes a skeleton frame which is made in two duplicate parts. When united, the frame is composed of a slightly-tapered hollow pendant 6 at its lower end, upon which is placed a sleeve 7, of cork or other suitable material, which enters and tightly closes the contracted opening 3 at the lower end of the bottle-neck. Projecting from the upper end of the pendant 6 is a collar 8, from which rise four substantially equidistant bars 9, two of which on each half of the collar have their faces flush with the dividing-line and receive screws 10, by which the two half parts of the frame are united. The bars 9 extend upward and then curve slightly toward the axis of the bottle-neck, their ends being integral with a plate or substantially rectangular block 12. The bars 9 form a cage which contains a ball-valve 13, normally resting by gravity upon a valve-seat 14, which surrounds the open end of the passage inclosed by the pendant 6. In the same cage is a second and somewhat larger ball 14^a, which rests upon the ball-valve 13.

From the plate 12, which is smaller than the diameter of the neck and has no opening, four short bars 15 rise to and unite with an annular plate 16, which has an exterior diameter a little less than that of the bottle-neck, but a little in excess of the interior diameter of the rib 4. A circular cushion 17, of cork or other substance of a suitable kind, is slipped upon the outside of the short bars 15 and is compressed by the annular plate 16 against the rib 4. This plate has an opening 18, surrounded by a valve-seat 19, on which rests a ball-valve 20. The latter, together with a gravity-ball 21, resting upon it, is confined

by a cage formed of four bars 22, which rise from the annular plate 16 at equally distant intervals and extend upward with a slight convergence toward the axis of the neck, their ends meeting with a serrated disk 23 of less diameter than the interior of the bottle-neck. This plate is united by short bars 24 with an annular plate 25, which fits within the upper open end of the neck 2 or nearly so. The opening 26 is closed by a stopper of any preferred kind.

When the frame is inserted in the bottle-neck in the manner described, it is locked automatically against withdrawal by means of springs 27, which snap under that portion of the body 1 adjacent to the lower end of the neck two locking-prongs 28, which are integral with said springs. I prefer to construct these prongs and springs of a single piece of wire, as shown in Fig. 1. The prongs 28 lie in openings 29 in the pendant 6. Thus the frame can never be removed unless the bottle is fractured. I may, however, employ any well-known means for permanently securing the frame in the neck of the bottle. At the same time the contents can always be poured out in any suitable quantity. If the bottle is inclined so as to bring the open top of the neck below a horizontal line, the ball-valves will leave their seats by gravity and the liquor will flow out in the usual manner. It is impossible, however, to get liquor into the bottle, as the inflow through the inverted neck will not have force enough to lift the ball-valve 13, and it is impossible to insert any implement to raise said valve.

What I claim is—

1. A non-refillable bottle, having a neck provided with a contracted lower end and with an interior rib between the ends, in combination with an insertible frame having a cushioned hollow terminal fitting the contracted lower end of the neck, an annular plate forming part of the frame and lying above the interior rib in the bottle-neck, ball-valves one of which normally closes the open end of the pendant and the other an opening in the annular plate, and springs to automatically and permanently lock the frame in the bottle-neck, after the bottle is filled, substantially as described.

2. In a non-refillable bottle, the combination with a bottle-neck having a contracted lower end and an interior rib between the

ends, of a skeleton frame having a cushioned pendant closely fitting the contracted end of the neck, a ball-valve normally resting on a valve-seat around the open end of the terminal, a gravity-ball resting on the ball-valve, both balls inclosed by a cage forming part of the skeleton frame, a circular cushion compressed on the interior rib by an annular plate forming part of said frame, a ball-valve closing the opening in said annular plate, a gravity-ball resting on the ball-valve, both inclosed by a cage which is part of the frame, and springs which automatically and permanently lock the frame in the bottle-neck said frame being inserted after the bottle is filled, substantially as described.

3. The combination with a bottle of a skeleton frame inserted in the bottle-neck after filling, a cushioned pendant forming part of said frame and fitting a contracted opening at the lower end of the neck a circular cushion compressed against an interior rib in the neck by an annular plate on the frame, ball-valves resting on valve-seats around the upper end of the pendant and around the opening in the annular plate, gravity-balls resting on said ball-valves, said balls being contained in cages in the frame, an annulus at the upper end of the frame fitting the open mouth of the neck, and springs which automatically and permanently lock the skeleton frame in the neck when the latter is inserted after the bottle is filled, substantially as described.

4. A non-refillable bottle, having a neck provided with a contracted lower end and with an interior rib between the ends, in combination with an insertible frame having a cushioned hollow terminal fitting the contracted lower end of the neck, an annular plate forming part of the frame and lying above the interior rib in the bottle-neck, ball-valves one of which normally closes the open end of the pendant and the other an opening in the annular plate, and means for permanently securing the frame in the bottle-neck, after the bottle is filled, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES H. NEWBURY.

Witnesses:

NINA WARE,
LILLIE CHAMBERS.