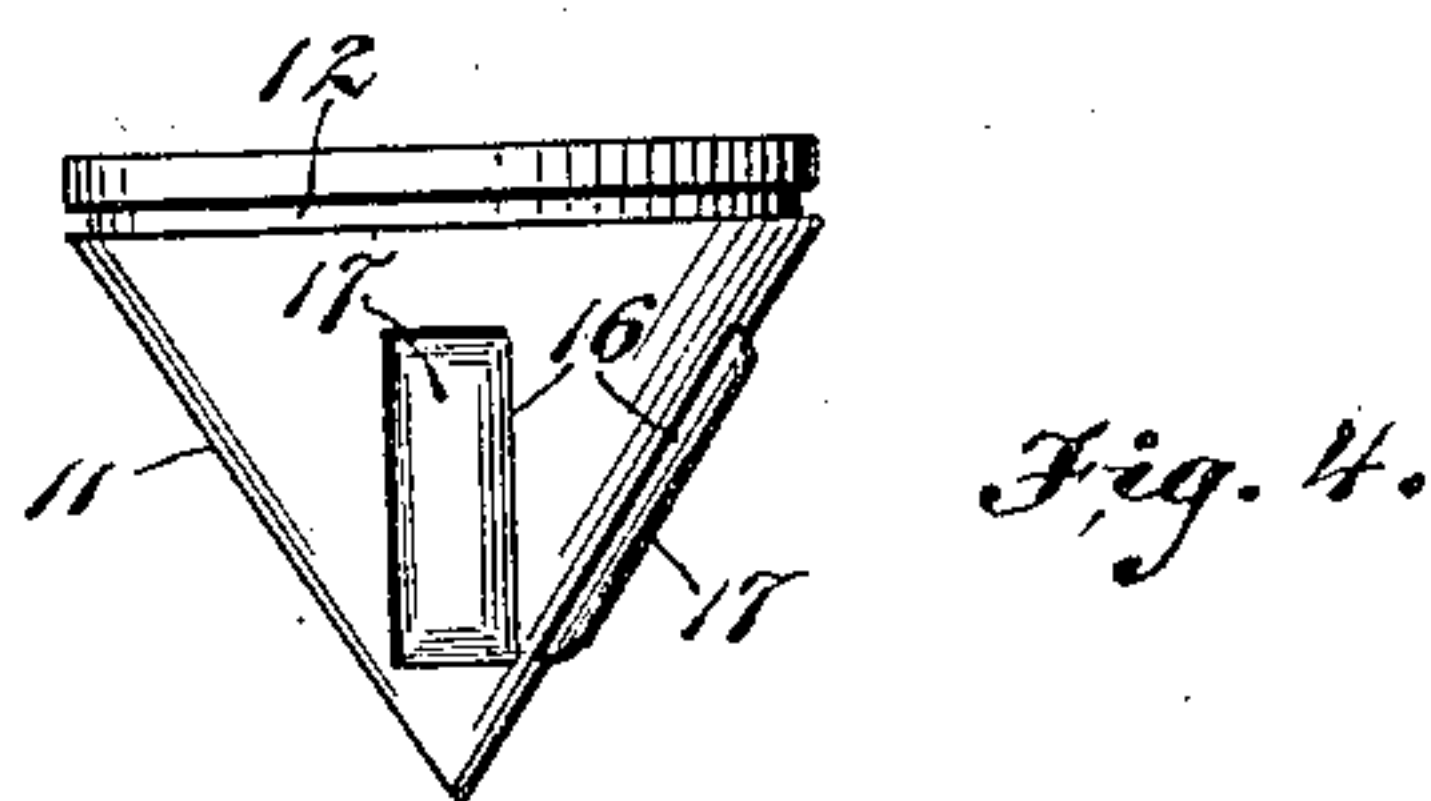
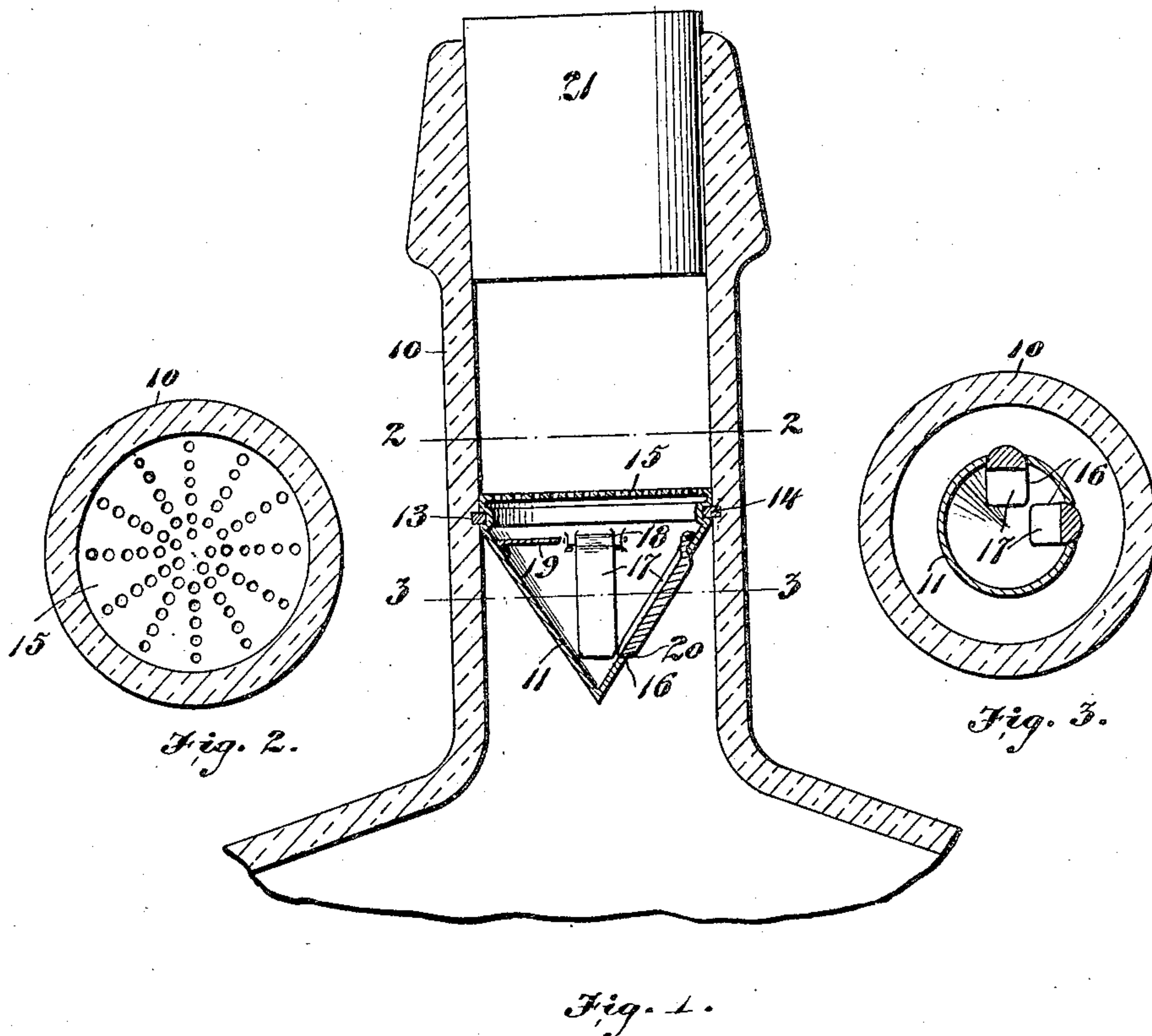


No. 877,677.

PATENTED JAN. 28, 1908.

J. A. SOUTHWELL.
NON-REFILLABLE BOTTLE.
APPLICATION FILED OCT. 22, 1907.



John A. Southwell,
Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN ARTHUR SOUTHWELL, OF WYOMING, PENNSYLVANIA.

NON-REFILLABLE BOTTLE.

No. 877,677.

Specification of Letters Patent.

Patented Jan. 28, 1908.

Application filed October 22, 1907. Serial No. 398,623.

To all whom it may concern:

Be it known that I, JOHN ARTHUR SOUTHWELL, a citizen of the United States, residing at Wyoming, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to that class of bottles known as non-refillable, and more particularly that kind in which the bottle is rendered non-refillable by a valve located in the bottle-neck which opens to permit the discharge of the contents of the bottle, and closes to prevent the entry of a liquid thereinto.

The object of the invention is to provide an improved valve characterized by simplicity of construction, and also one which is reliable and efficient in operation.

In the accompanying drawing, Figure 1 is a vertical sectional view showing the application of the invention. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1. Fig. 4 is an elevation of the valve and its casing removed from the bottle-neck.

Referring specifically to the drawing, 10 denotes the neck of a bottle on the inside of which is secured a valve-casing 11 having the shape of an inverted cone. Near the top of the valve-casing on the outside thereof is an annular groove 12, and a similar groove 13 is on the inside of the bottle-neck. These grooves receive a flexible split ring 14 for holding the valve-casing in place. When the valve-casing is placed in position within the bottle-neck, the ring expands into the groove 13 whereby the casing is securely locked in the bottle-neck.

The top or outer end of the valve-casing is closed by a perforated plate 15, and below this plate the inclined wall of the casing has openings 16 which are controlled by flap-valves 17 hinged at 18 at their upper ends inside the valve-casing. As the wall of the casing is inclined the valves are normally seated and close the openings 16, and they do not open until the bottle is tilted or inverted whereupon they swing away from the

openings and permit the liquid to pass into the casing through the openings 16 and out of the casing through the perforated plate 15. That side of the valve which is next to the opening is made convex so that it will seat snugly therein and effect a tight closure. Two valves as herein described are employed, and they are located so that they will not interfere when they swing open. The object of the plate 15 is to guard the valves and prevent tampering with the same.

For each valve is provided a catch 19 the purpose of which is to hold the same open when the bottle is originally filled. These catches are spring-fingers secured inside the valve-casing over which the valves are snapped when it is desired that they remain open.

Before placing the valve-casing in position within the bottle-neck the valves are opened and snapped over the catches 19 whereby they are held open. The valve-casing is then inserted in the bottle-neck and locked therein by the ring 14 in the manner heretofore described, after which the bottle is ready for filling. After the bottle is filled the valves are disengaged from the catches and are closed by pushing down on the valves by means of a piece of wire inserted through one of the perforations in the plate 15. To facilitate the disengagement of the valve with the catches, the free ends of the former are beveled as indicated at 20. The bottle now cannot be refilled but by tilting or inverting it the valves open and the liquid flows from the bottle in the manner already described. There is sufficient space in the bottle-neck above the valve-casing to accommodate a cork or other closure 21.

The valve structure herein described is extremely simple and therefore can be cheaply applied, and it effectually serves the purpose for which it is intended.

I claim:—

1. The combination with a bottle, of a valve-casing in the neck thereof having the shape of an inverted cone with openings in the side wall thereof, flap-valves controlling said openings, and a perforated plate in the casing above said openings.

2. The combination with a bottle, of a valve-casing in the neck thereof having the shape of an inverted cone with openings in the side wall thereof, flap-valves for controlling said openings, a guard above said openings, and spring catches engageable by the valves for holding the same open.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN ARTHUR SOUTHWELL.

Witnesses:

TOM JOHNSON,
STANLEY EDDY.