

No. 883,609.

PATENTED MAR. 31, 1908.

J. F. ARKENBERG.
NON-REFILLABLE BOTTLE.
APPLICATION FILED OCT. 12, 1907.

2 SHEETS—SHEET 1.

FIG. 1

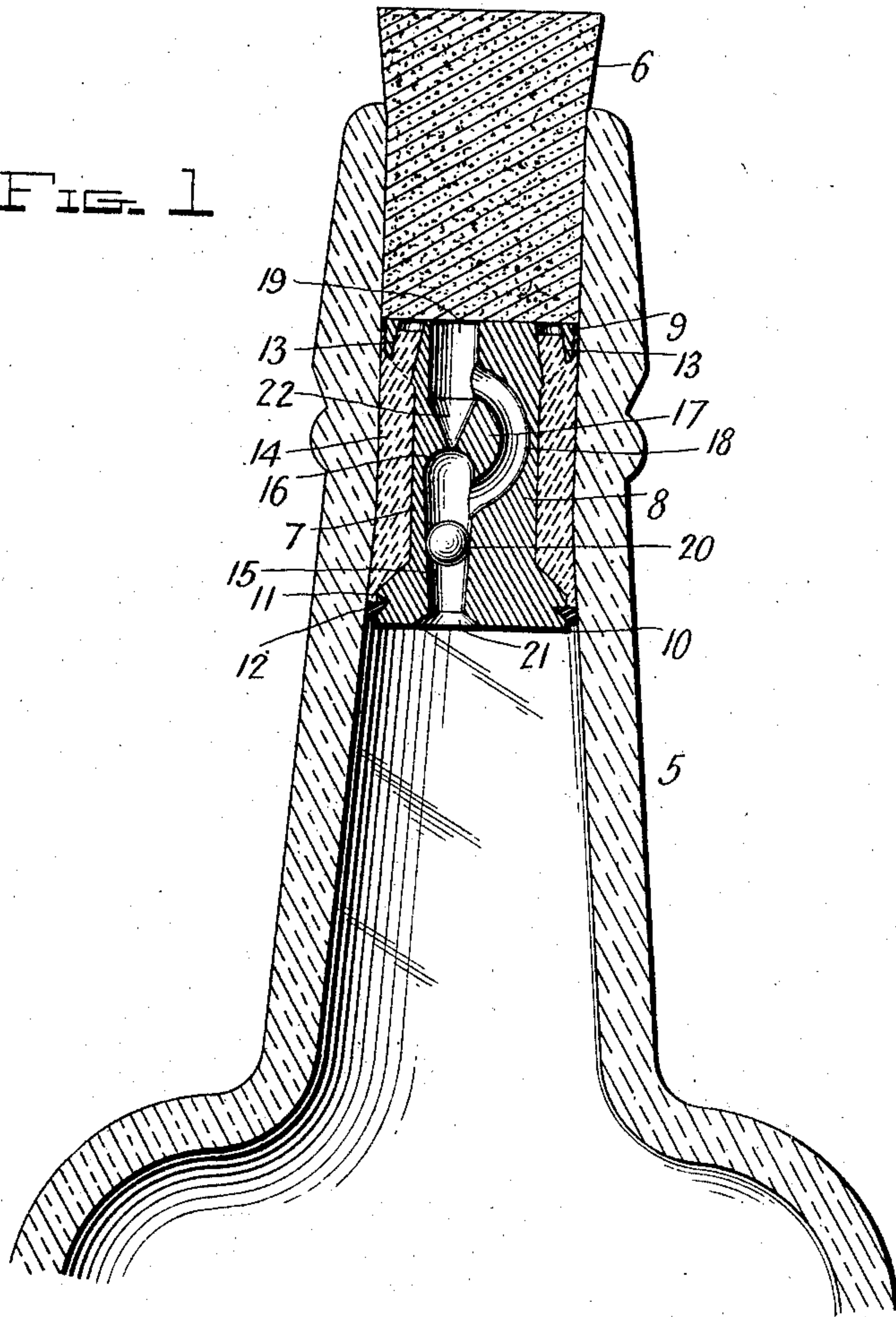
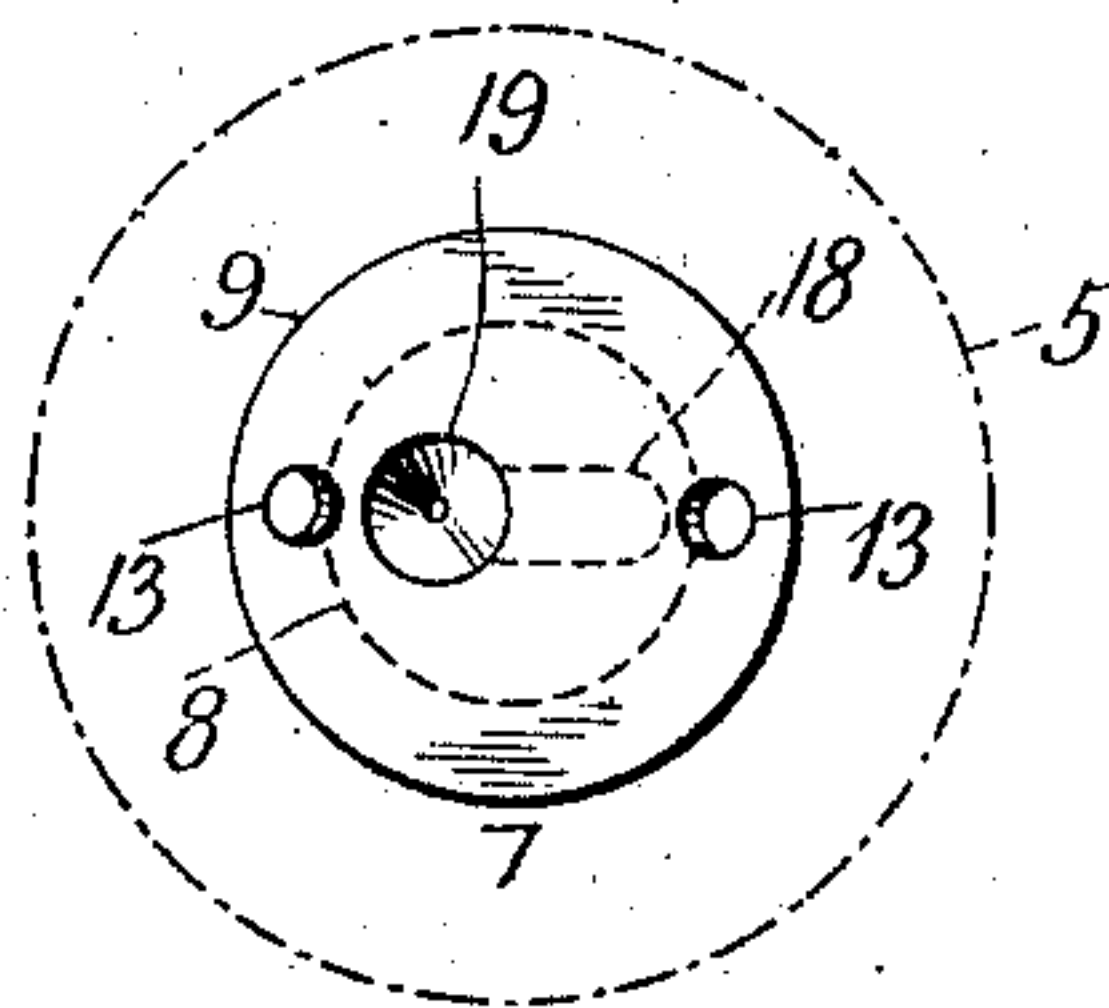


FIG. 3



Witnesses
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2 SHEETS—SHEET 2.

FIG. 2

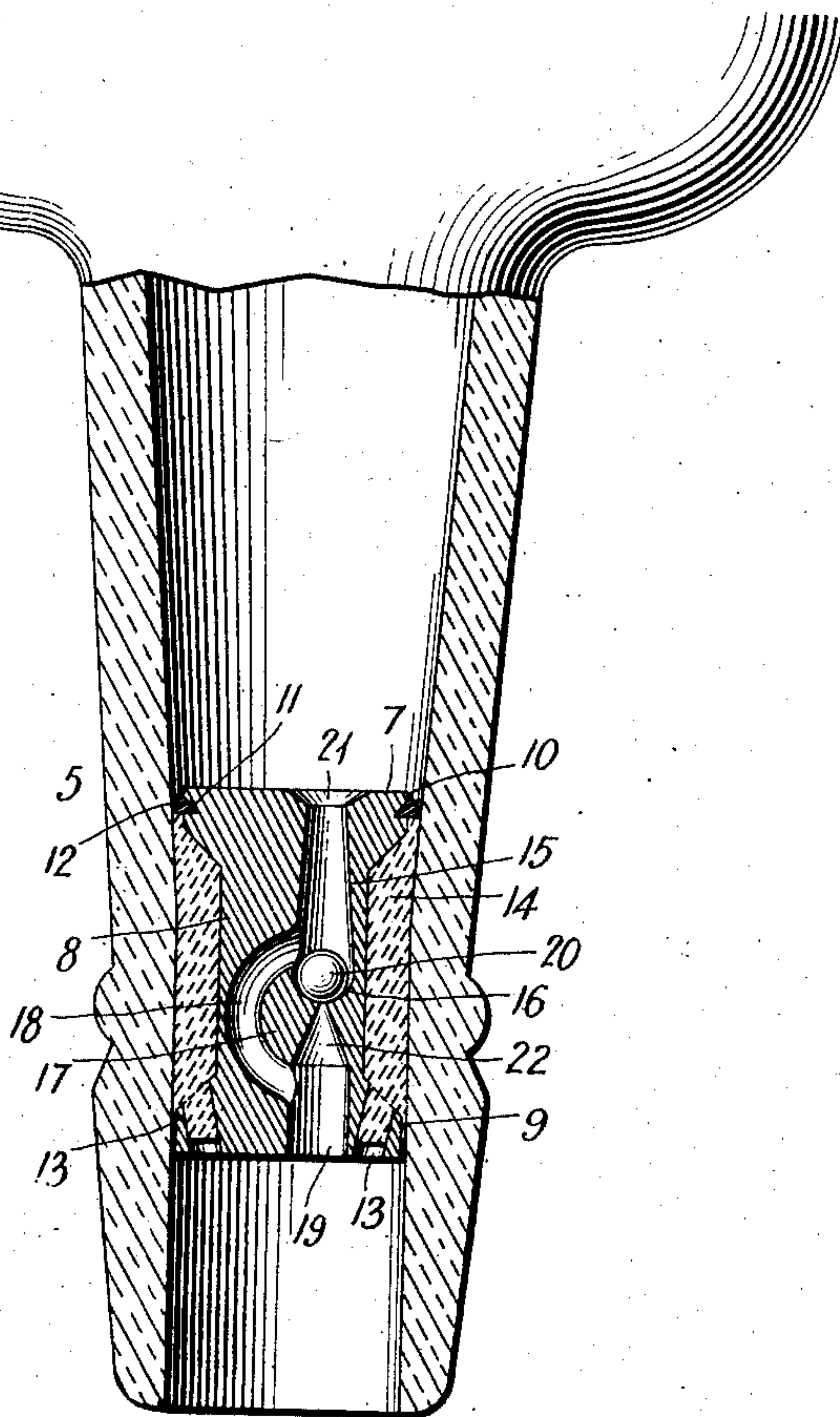
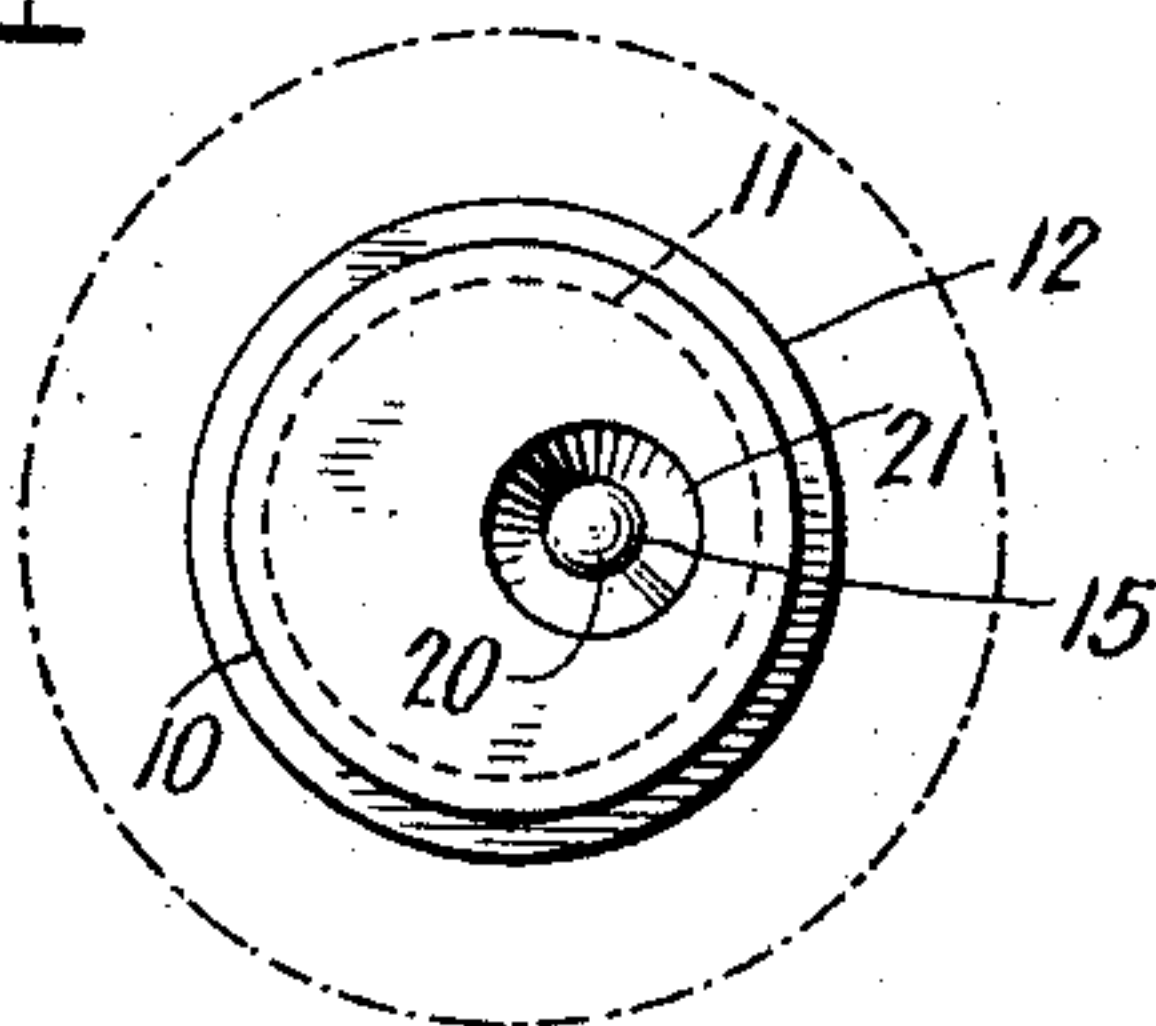


FIG. 4



Witnesses

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UNITED STATES PATENT OFFICE.

JEROME F. ARKENBERG, OF FOSTORIA, OHIO.

NON-REFILLABLE BOTTLE.

No. 883,609.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed October 12, 1907. Serial No. 397,189.

To all whom it may concern:

Be it known that I, JEROME F. ARKENBERG, a citizen of the United States, residing at Fostoria, in the county of Seneca, State of Ohio, have invented certain new and useful Improvements in Non-Refillable 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.

This invention relates to new and useful improvements in non-refillable bottles and it has more particular reference to a non-refillable bottle comprising a fixed stopper provided with liquid passages and a ball valve designed to control the passages.

The invention aims as a primary object to provide a bottle stopper having its passages so arranged that fraudulent refilling thereof, by manipulation or by pressure when in an inverted position, is rendered impossible.

The details of construction will appear in the course of the following description in which reference is had to the accompanying drawings, forming a part of this specification, like characters of reference designating similar parts, throughout the several views, wherein:—

Figure 1 is a central longitudinal sectional view showing the stopper in the neck of the bottle, the latter being in its normal position. Fig. 2 is a similar view, the bottle being represented as inverted. Fig. 3 is a top plan view of the stopper. Fig. 4 is a bottom plan view thereof.

In the accompanying drawings, the numeral 5 designates the neck of the bottle closed at its upper end by an ordinary cork stopper 6 below which is arranged the stopper 7 which forms the subject matter of the present invention, the stopper 7 being of substantial spool shape and comprising a reduced central portion 8 and upper and lower annular flanges 9 and 10, the latter having an annular groove 11 for a rubber packing gasket 12, and the former having openings 13 between its upper and under faces, through which a filling of sealing cement 14 is introduced, the cement 14 filling the space between the reduced portion 8 and the inner surface of the bottle neck. The gasket 12

forms an air tight seal prior to the introduction of the cement 14. The stopper 7 has an opening 15 extending from its lower end and terminating in a valve seat 16 afforded by an integral web 17 which defines one wall of a curved opening 18 forming a continuation of the opening 15 and meeting and communicating with an opening 19 extending axially to the upper face of the valve, the openings 15, 18 and 19 forming conjointly a circuitous passage through which the liquid discharges from the bottle. The opening 15 tapers toward the bottom of the stopper 17 in order that the ball valve 20 may have a lodgment therein in the normal position of the bottle. The opening 15 is preferably constructed with a flaring mouth 21 to facilitate the discharge of liquid therefrom.

When the bottle is inverted or tilted on a downward inclination, the valve 20 moves upon its seat 16 out of the continuous passage for the egress of the liquid, the latter flowing through the said passage out of the bottle. It will be apparent that the circuitous direction of this passage affords a means for preventing the valve 20 from being manipulated by a tool. The said valve likewise prevents the bottle from being refilled in an inverted position, by pressure, since, in such event it will lodge in the opening 15 by reason of the tapered formation of the latter, the opening 14 having a tapering axial extension 22 opening into the valve seat 16 in order that the pressure agency may act on the valve 20.

What is claimed is:

1. In a non-refillable bottle, a stopper having a reduced central portion and upper and lower annular flanges, the lower flange having in its annular surface an annular groove, the upper flange having openings between its upper and under faces, the said stopper having a passage extending there-through and a displaceable valve arranged in said passage to normally close the same.

2. In a non-refillable bottle, a stopper having a continuous circuitous passage formed with a central bend, the lower part of said passage being tapered, a transverse web extending between the upper and lower parts of said passage adjacent said bend and

forming one wall of said bend, the said web
being shaped to afford a valve seat in the
upper end of the lower portion of said pas-
sage and at one side of the lower end of said
5 bend and a valve normally lodged in said
tapered lower part and movable to and away
from said seat.

In testimony whereof, I affix my signa-
ture, in presence of two witnesses.

JEROME F. ARKENBERG.

Witnesses:

MABEL ARKENBERG,
MINNIE LEATHERMAN.