No. 671,735. Patented Apr. 9, 1901.

C. A. STEWART, JR.

NON-REFILLABLE BOTTLE.

(Application filed Jan. 28, 1901.)

(No Model.)

Fig. 2

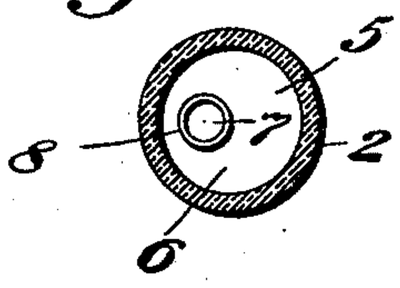


Fig. 1

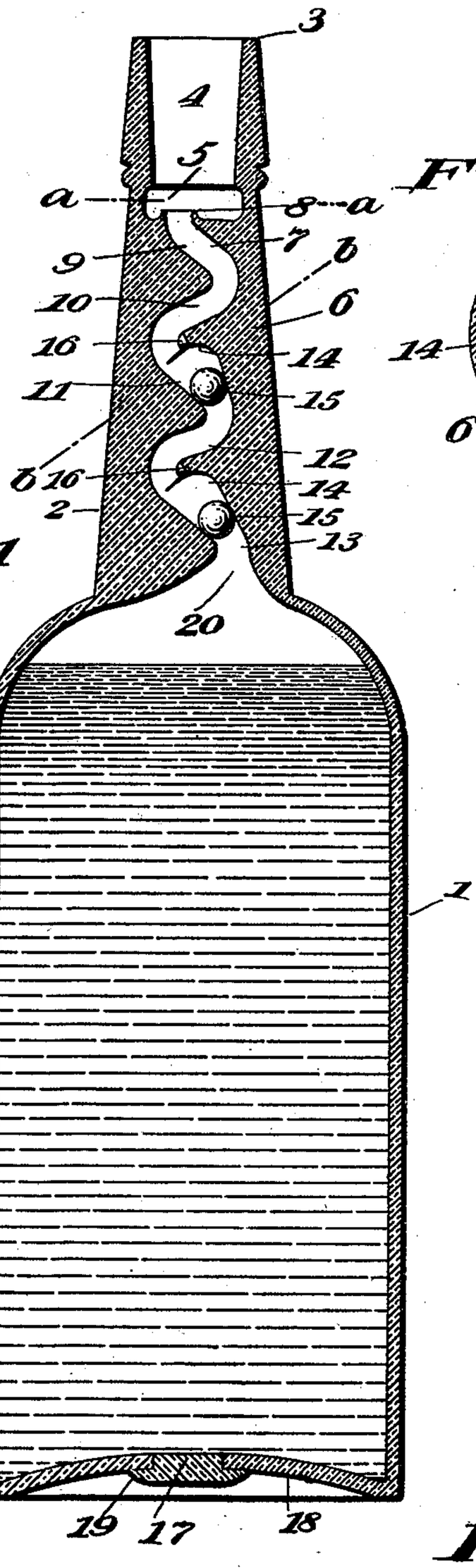
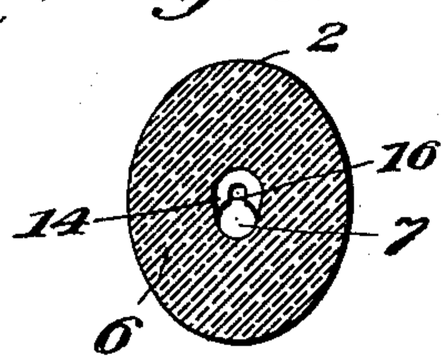


Fig. 3



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UNITED STATES PATENT OFFICE.

CHARLES A. STEWART, JR., OF CINCINNATI, OHIO.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 671,735, dated April 9, 1901.

Application filed January 28, 1901. Serial No. 45,133. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. STEWART, Jr., a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to certain improvements in non-refillable bottles, and has for its object to provide a bottle of this character which shall be of a simple and inexpensive construction and of a nature such that while it is permitted to readily empty the bottle of its contents the refilling of the bottle is prevented by means of certain devices arranged in the bottle-neck.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved non-refillable bottle, whereby certain important advantages are attained and the bottle is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a sectional view taken axially through a bottle constructed according to my invention, and Fig. 2 is a sectional view taken transversely through the upper portion of the bottle-neck and showing the mouth of the liquid-passage in said neck. The plane in which this section is taken is indicated by the line *a a* in Fig. 1. Fig. 3 is a sectional view taken obliquely through the bottle-neck in the plane indicated by the line *b b* in Fig. 1 and showing certain details of construction to be hereinafter referred to.

As shown in the views, 1 indicates the body portion of the bottle, 2 the neck, and 3 the mouth thereof.

The bottle may be of any desired shape but the invention is best adapted to bottles having a moderate or long neck portion, such as is shown in the drawings.

At the mouth 3 of the bottle is formed a chamber 4 to receive a stopper, said chamber being laterally expanded or widened at its lower part, as shown at 5, to permit the lower end of the stopper or cork to swell or expand, so that the cork or stopper may be tightly held in place.

Below the expanded portion 5 of the chamber 4 the walls of the bottle-neck are thickened, as shown at 6, and in said thickened portion of the bottle-neck 2 is produced a serpentine or zigzag liquid-passage 7, the lower end of which is adapted for communication with the interior of the body portion 1 of the bottle, while the upper end of said passage 7 opens into the expanded lower portion 5 of the stopper-chamber 4. At the upper end of said passage 7 the thickened portion of the bottle-neck, which forms the floor of the stopper-chamber 4, is provided with an upturned lip or flange 8, which is adapted to be engaged by the under surface of the stopper when the same is pressed into the chamber 4 in such a way as to prevent any of the liquid from the passage 7 from escaping into the lower portion of chamber 4 and to insure that the mouth of said passage shall not become clogged up.

The serpentine or zigzag passage 7 is formed with portions 9, 10, 11, 12, and 13, which extend in directions at angles to each other, so that a wire or the like may not be readily passed down through the passage, and at suitable points portions of the passage, as shown at 11 and 13, are made widened or expanded to produce chambers 14, in which are held valves 15, formed of balls, as herein shown, said valves being adapted to be seated at the lower portions of the expanded portions or chambers 14 in such a way as to prevent the entry of liquid into the body portion of the bottle through the passage 7. The walls of the chambers 14 are flared upwardly, so that when the bottle is inverted the valves or balls 15 will roll along said chambers to the larger ends thereof, leaving a free passage for the liquid to flow from the body portion of the bottle past said balls or valves. To prevent the balls or valves from completely sealing the upper ends of the chambers 14 when the bottle is inverted, the said upper ends are provided, as shown at 16, with notches or indentations in their walls to permit the liquid to freely pass the valves.

For filling the bottle an opening is pro-

vided in the bottom of the bottle, through which the liquid is poured, and when the bottle has been filled said opening is closed by means of a plug 17, fused to the bottom of the bottle. The bottom of the bottle is usually hollowed out on its under side, as shown at 18, and the plug 17 is formed with a head 19 outside the opening and resting on the bottom of the bottle within the hollow or recess in the under side thereof.

At the lower part of the bottle-neck 2 the passage 7 therein is flared or expanded at its point of communication with the interior of the body portion of the bottle, as shown at 20, so that the contents of the bottle may be more readily poured out, the expanded or flared lower end of the liquid-passage 7 permitting the liquid when but a little is left in the bottle to readily find its way to the passage when the bottle is inverted.

From the above description it will be seen that the improved bottle is of an extremely simple and inexpensive nature and is especially well adapted for use, since it permits of guarding against the surreptitious refilling of the bottle with spurious goods after the genuine contents have been removed. The entry of liquid into the bottle is effectually prevented by reason of the valved passage, so that when the bottle is opened and a portion of its contents removed the remainder cannot be adulterated by pouring in other liquid. The serpentine nature of the valved passage 7 effectually guards against the introduction of wires or the like into the passage, so that tampering with the valves is prevented.

It will also be obvious from the above description that the improved non-refillable bottle constructed according to my invention is capable of some modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the device as herein set forth.

Having thus described my invention, I claim—

1. A non-refillable bottle having in its neck a serpentine passage for the discharge of liquid, said passage having chambers produced in it, the chambers having upwardly-flared walls and ball-valves held in said chambers and arranged to prevent the introduction of liquid into the bottle, the passage having a portion of less diameter than the ball-valves above each chamber, and the walls of said passage being formed at the upper end of each chamber with a notch or indentation extended from the chamber into said reduced portion of the passage above that chamber and adapted to convey liquid past the ball-valve when the latter rests at the upper end of the chamber, substantially as set forth.

2. A non-refillable bottle having in its neck a chamber to receive a stopper, the lower part of said stopper-chamber being laterally expanded to permit the stopper when inserted to swell or expand at its lower end, the bottle-neck having below said stopper-chamber a reduced, serpentine passage formed with chambers having upwardly-flared walls and valves held in said chambers and adapted to prevent the introduction of liquid into the bottle, the floor of said stopper-chamber with which said reduced, serpentine passage is arranged for communication being formed with a raised flange surrounding the upper open end of said passage and adapted for engagement with the stopper, substantially as set forth.

Signed at Cincinnati, Ohio, this 25th day of January, 1901.

CHARLES A. STEWART, JR.

Witnesses:
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