

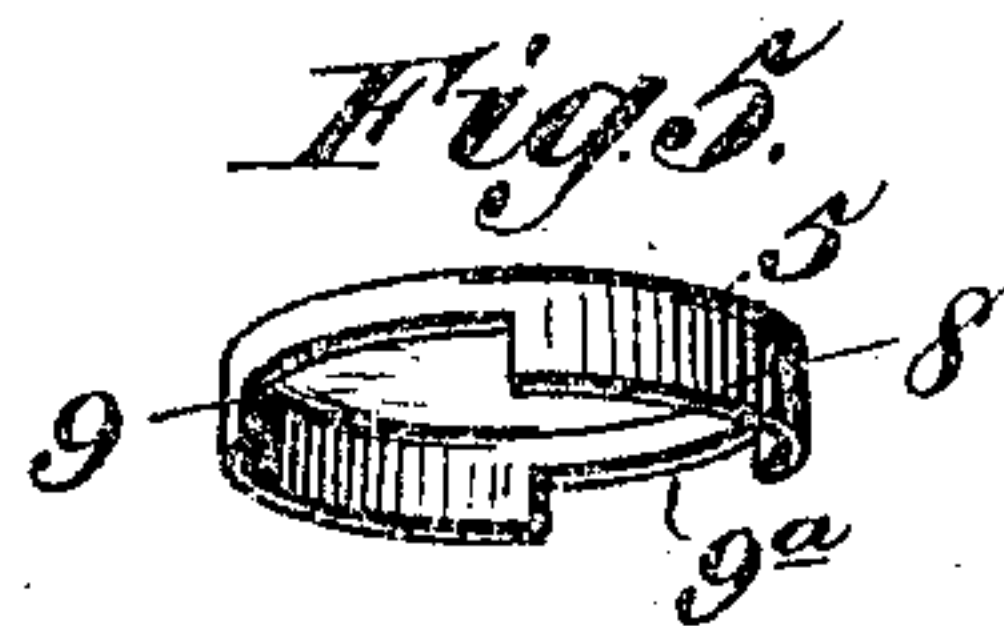
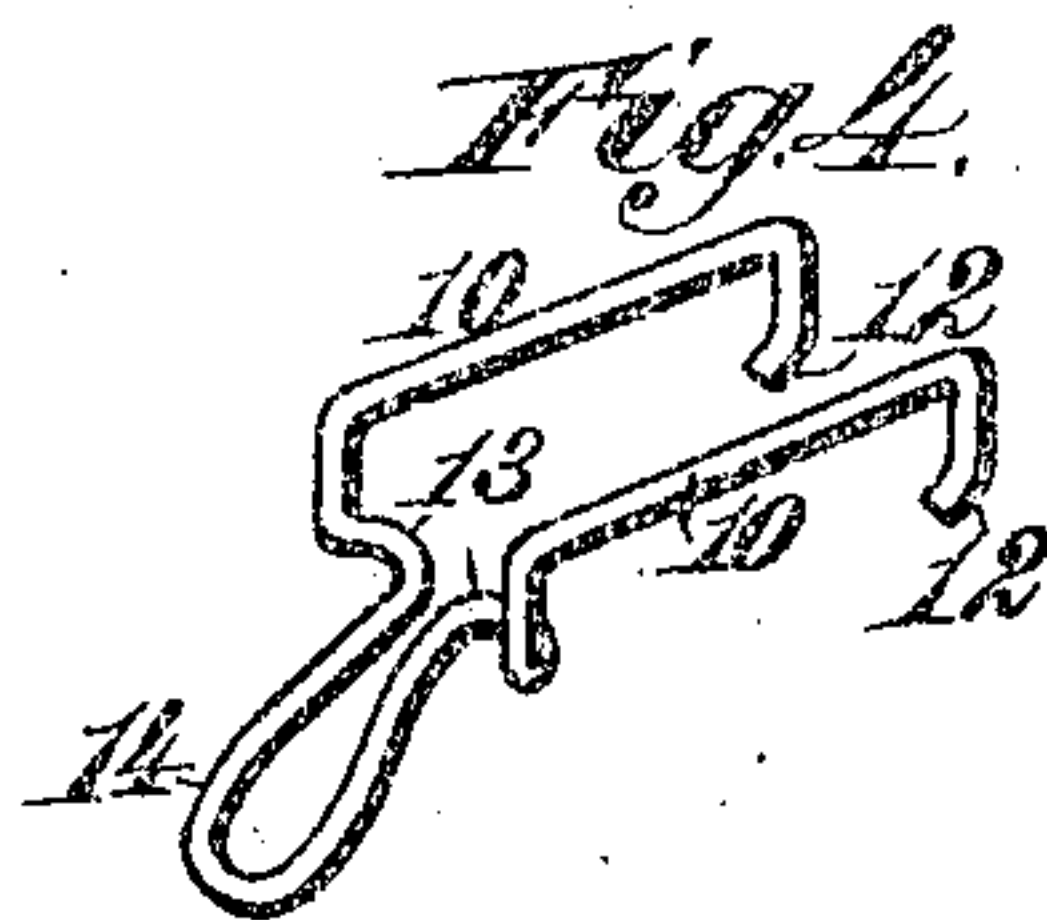
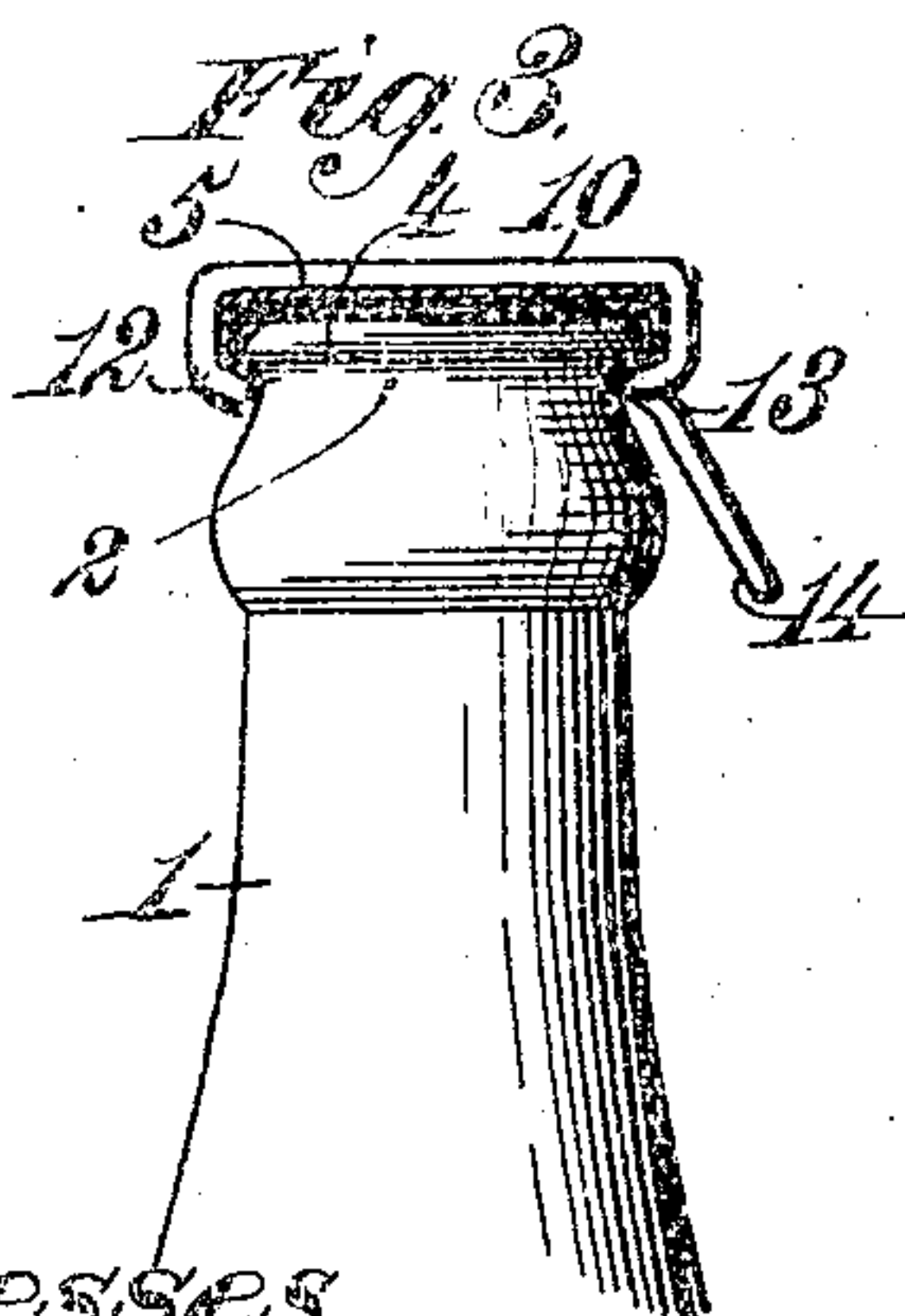
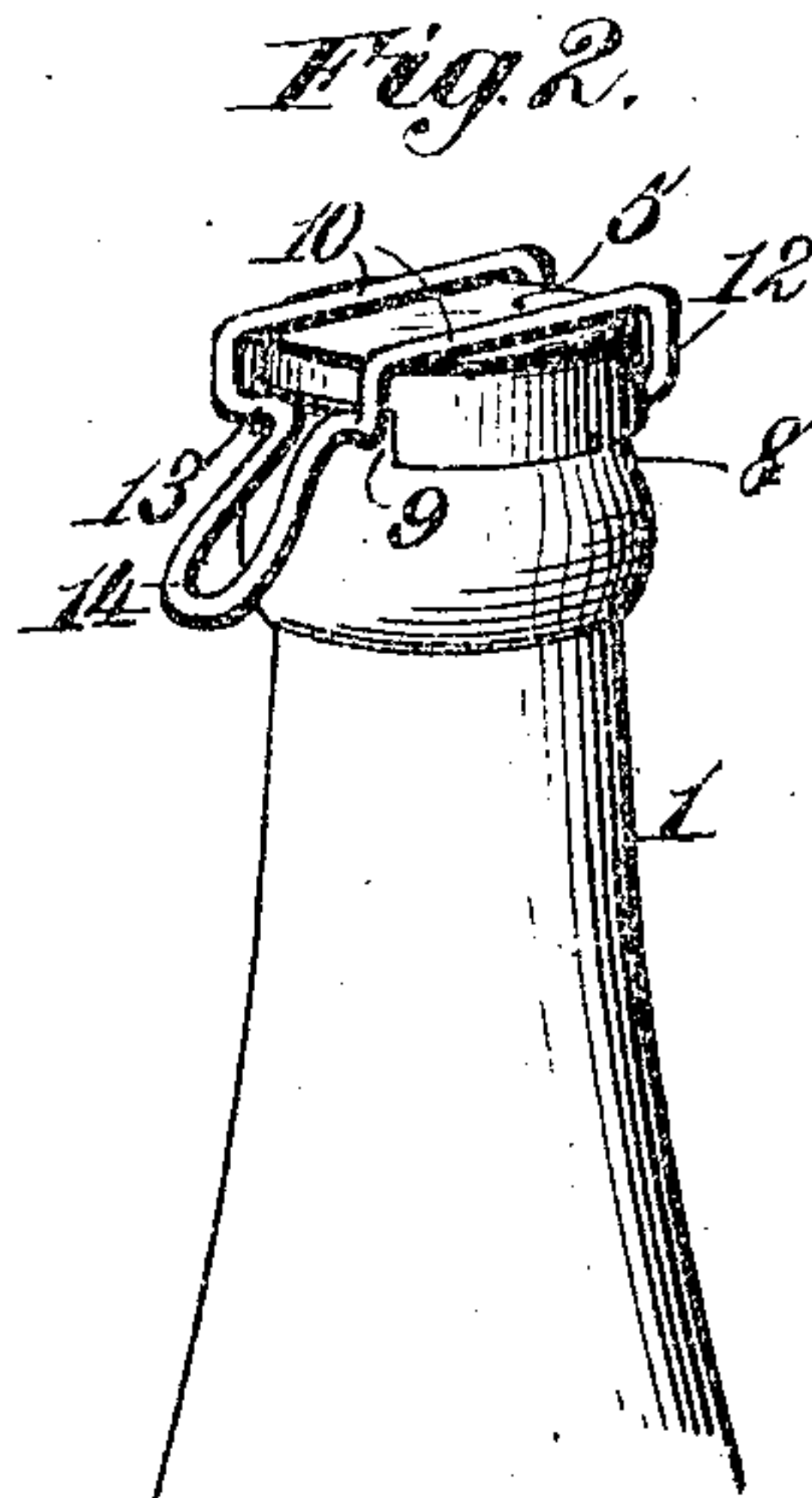
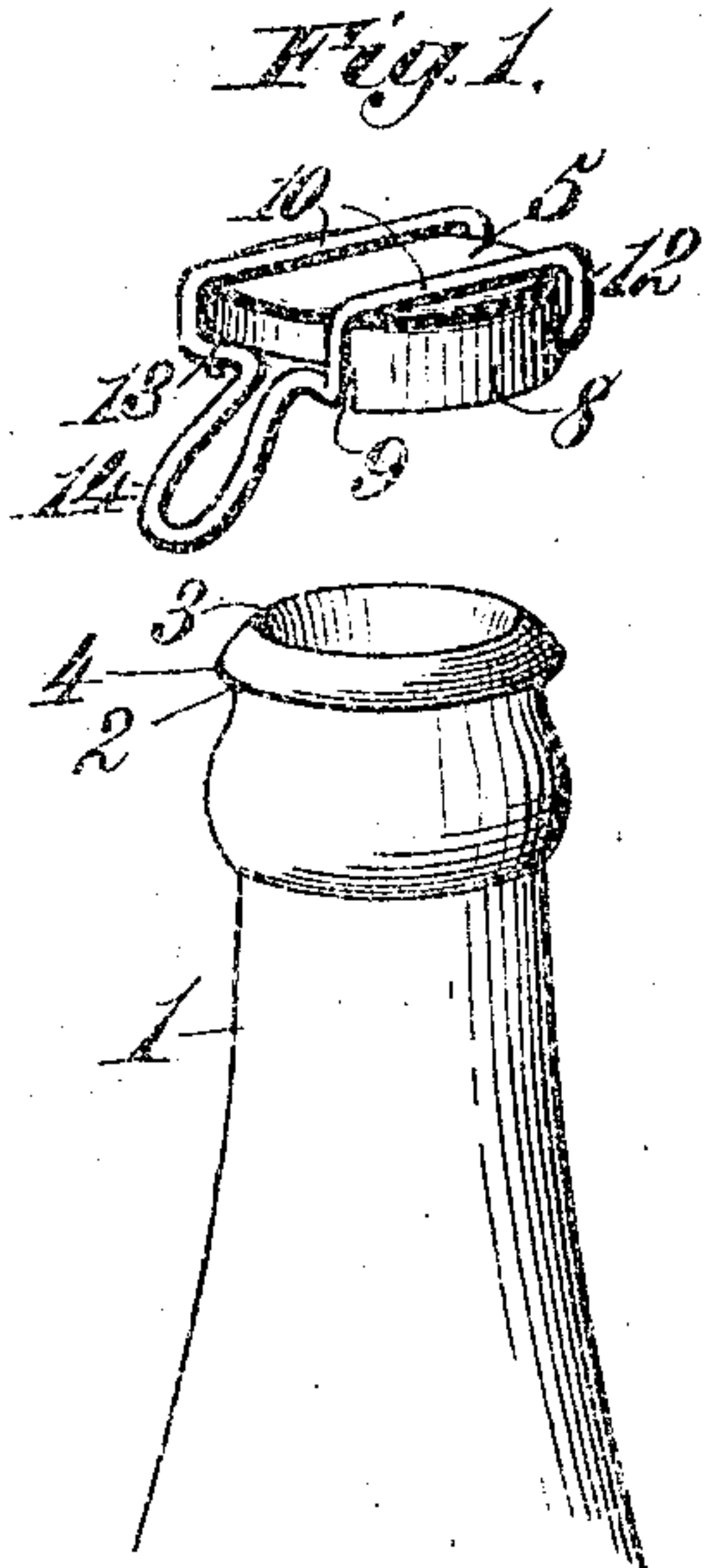
No. 617,975.

Patented Jan. 17, 1899.

F. W. WATERMAN.
BOTTLE STOPPER.

(Application filed Feb. 8, 1897.)

(No Model.)



Witnesses.
Robert G. Smith
Albert H. Norris

Inventor:
Frank W. Waterman
By *James L. Norris*
Atty.

UNITED STATES PATENT OFFICE.

FRANK W. WATERMAN, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE
WATERMAN SPRING BOTTLE SEAL COMPANY, OF SAME PLACE.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 617,975, dated January 17, 1899.

Application filed February 8, 1897. Serial No. 622,505. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. WATERMAN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a full, clear, and exact specification.

This invention relates to the bottle-stopper for which Letters Patent No. 568,286 were issued September 22, 1896.

The chief object of the present invention is to improve the construction of the spring clip or fastener, whereby the stopper can be removed from the mouth of the bottle by the pressure of a finger without the use of a tool especially designed for the purpose.

The invention also has for its object to improve the construction of the stopper-cap itself, whereby it can be more conveniently and economically manufactured.

These objects are accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view showing the improved stopper and the upper end of a bottle preparatory to forcing the stopper upon the bottle-mouth. Fig. 2 is a similar view showing the stopper secured on the bottle-mouth. Fig. 3 is a side elevation showing the stopper-cap in section. Fig. 4 is a detail perspective view of the spring clip or fastener removed from the bottle-cap. Fig. 5 is a detail perspective view of the cap.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein the numeral 1 indicates the neck of a bottle having an annular groove 2 in juxtaposition to the edge 3 of the bottle-mouth, this groove serving to create an annular shoulder 4 on the exterior of the mouth portion of the bottle. The stopper-cap 5 is in the form of a cup-shaped piece of metal, containing a disk of cork or other suitable material resting against the inner side of the top of the cap, so that when the latter is applied to the bottle-mouth the disk will effectually seal the bottle. The pendent rim 8 of the cap is provided at opposite sides with elongated notches 9 and 9^a cut directly in the

lower edge of the cap in contradistinction to slots cut in the rim considerably above the lower edge of the cap-rim, as in the former patent.

The spring clip or fastener, by which the cap is removably secured in an effectual manner upon the bottle-mouth, is composed of a single piece of wire bent to form two separated members 10, which lie over the top of the cap, and two separated hook-shaped extremities 12, the two members 10 of the wire opposite the hook-shaped extremities being bent, as at 13, toward each other and slightly toward the hook-shaped extremities, and thence downward into a loop-shaped finger-piece 14, which stands in an inclined position relatively to the horizontal members or portions 10 of the wire, which lie upon the top of the cap. The hook-shaped extremities 12 project toward the loop-shaped finger-piece, and extend through the notch 9^a, while the bent portions 13 extend through the notch 9 in a direction toward hook-shaped extremities, the construction being such that the spring clip or fastener is connected with the cap without liability of separation, and if the cap be pressed down upon the bottle-mouth the hook-shaped extremities 12 and the bent portions 13 will yield outward as they pass the annular shoulder 4 and then spring into the annular groove to firmly engage the lower side of the annular shoulder. By this means the stopper will be securely held upon the bottle-mouth and the latter will be sealed; but whenever it is desired to open the bottle it is only essential to place a finger of the hand under or otherwise use a finger or fingers of the hand to raise the fastener and cap from the bottle.

While the spring clip or fastener is connected with the stopper-cap, it is not in any manner attached permanently to the bottle neck or mouth, and therefore the entire stopper is moved from the bottle when the loop-shaped finger-piece is acted upon to open the bottle-mouth.

The construction of the sheet-metal stopper-cap 5 with the notches 9 and 9^a cut directly in the lower edge of its pendent rim is a desirable improvement in that the cap can be made by one passage through a simple

machine constructed to cut the notches and subsequently turn down the rim, which cannot be done where slots are required to be cut in the rim, as in the former patent. The new
5 form of cap is also desirable in that it is exactly alike or uniform at both sides, it requires less material, there is less trouble in fastening the spring-clip, and all parts of the stopper can be assembled in a suitable machine ready for application to a bottle. The
10 notches cut in the lower edge of the pendent rim of the cap also act as guides to place the cap in proper position relatively to the members of the spring-clip.

15 Having thus described my invention, what I claim is—

The combination with a bottle having an external annular groove in its mouth portion, of a sheet-metal cap having a pendent rim

with opposite recesses cut directly in its lower edge, and an elastic wire bent to form two
20 separated members lying over the top of the cap and having hooked extremities extending through one of said recesses into the annular groove, said two wire members having, at
25 points opposite the hooked extremities, the portions 13 projecting toward each other into the annular groove through the other recess in the rim and, respectively, bent down into the offsetting depending finger-piece 14, substantially as and for the purposes described.
30

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

FRANK W. WATERMAN.

Witnesses:

S. S. WILLIAMSON,
MURRAY HANSON.