

(No Model.)

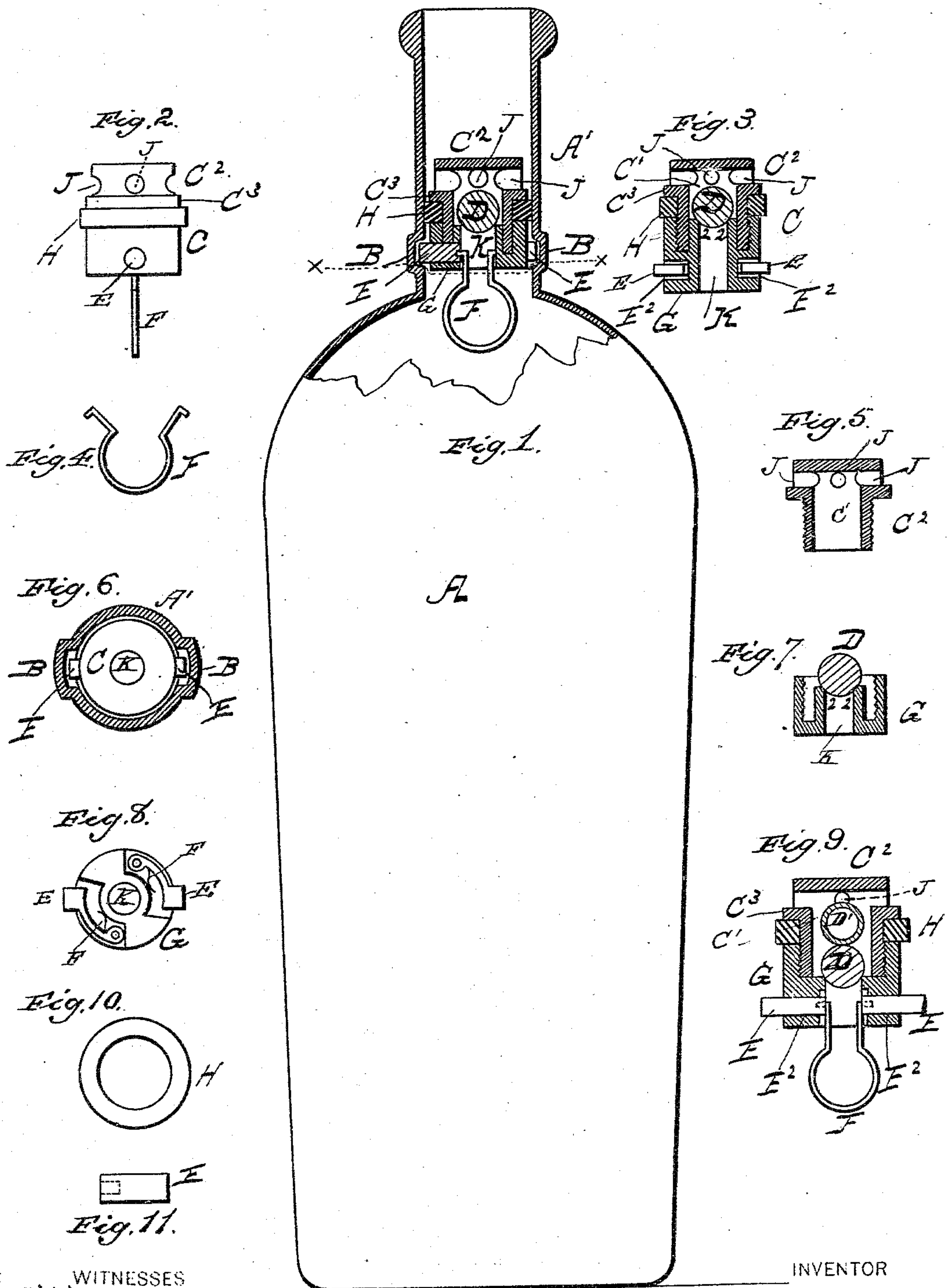
2 Sheets—Sheet 1.

J. E. WATSON.

ATTACHMENT TO PREVENT THE REFILLING OF BOTTLES.

No. 305,870.

Patented Sept. 30, 1884.



WITNESSES
E. H. Proates
John T. Morrow.

INVENTOR
John E. Watson,
by Anderson & Smith -
his ATTORNEYS

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2 Sheets—Sheet 2.

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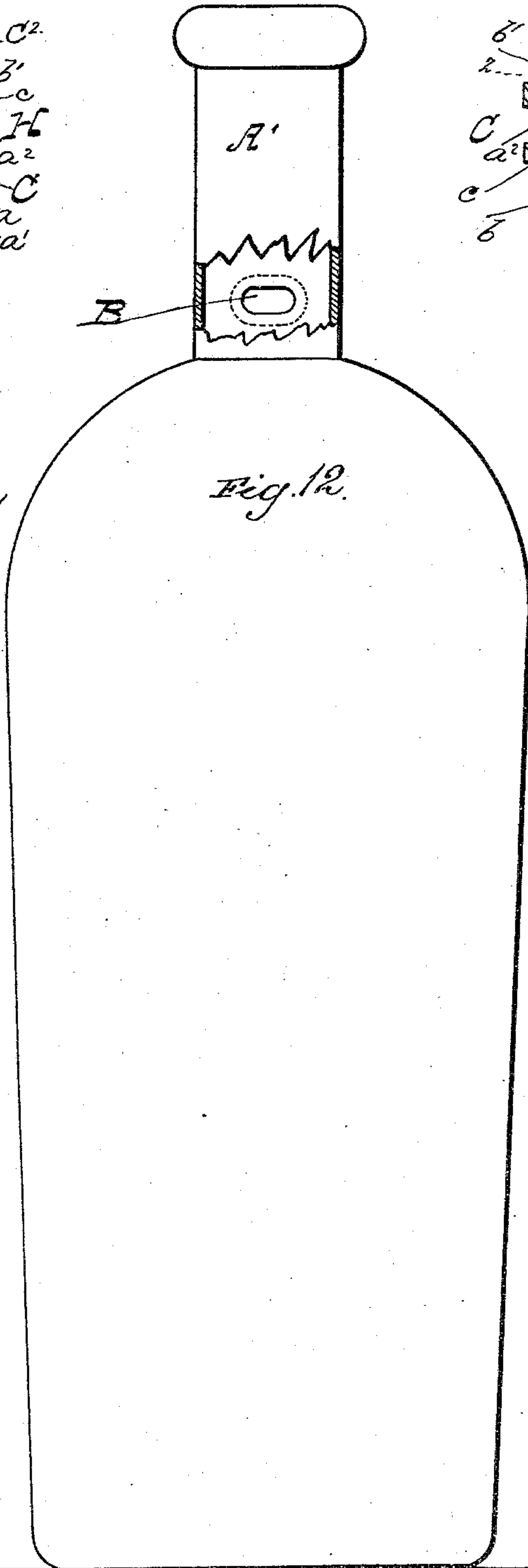
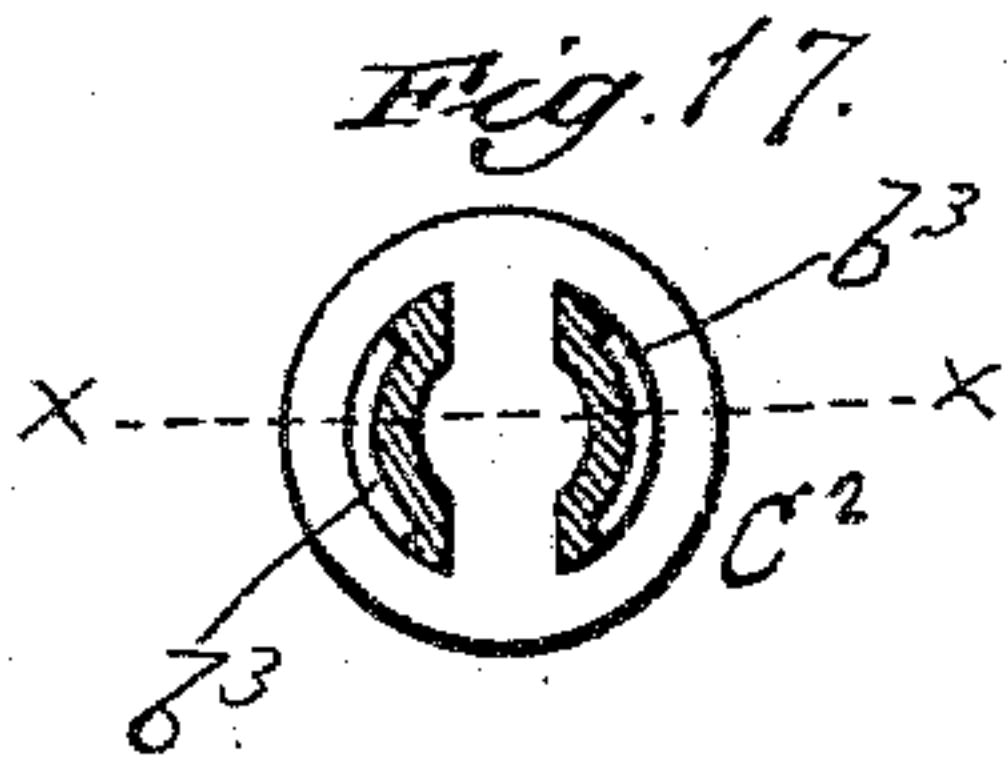
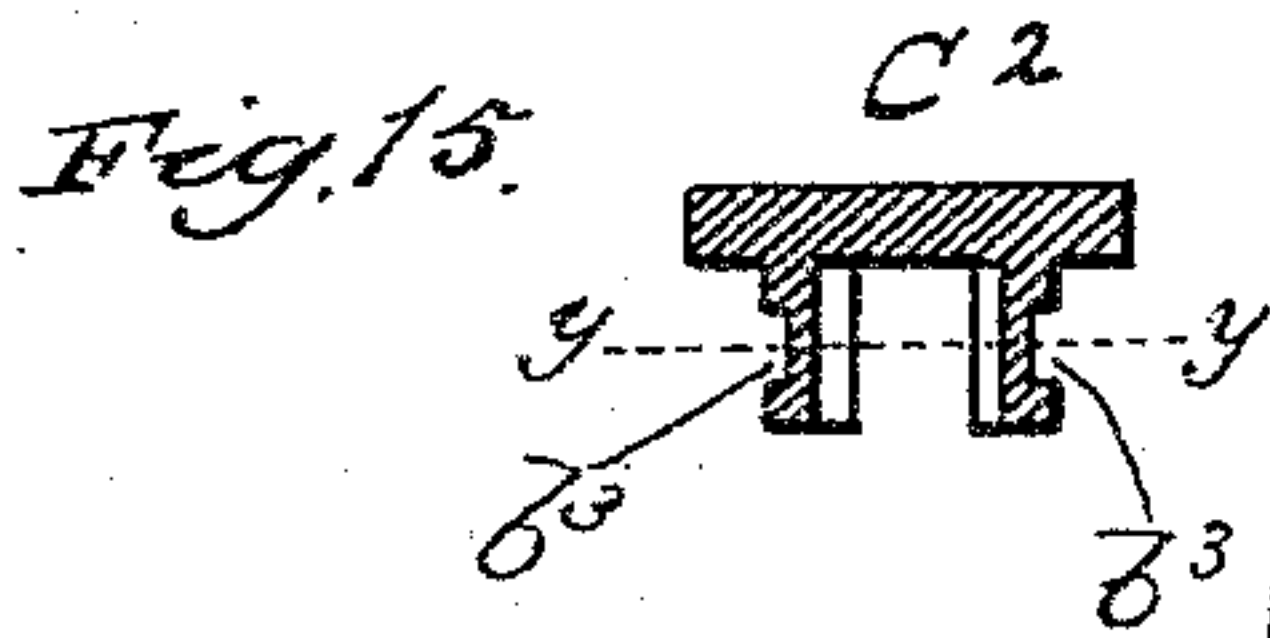
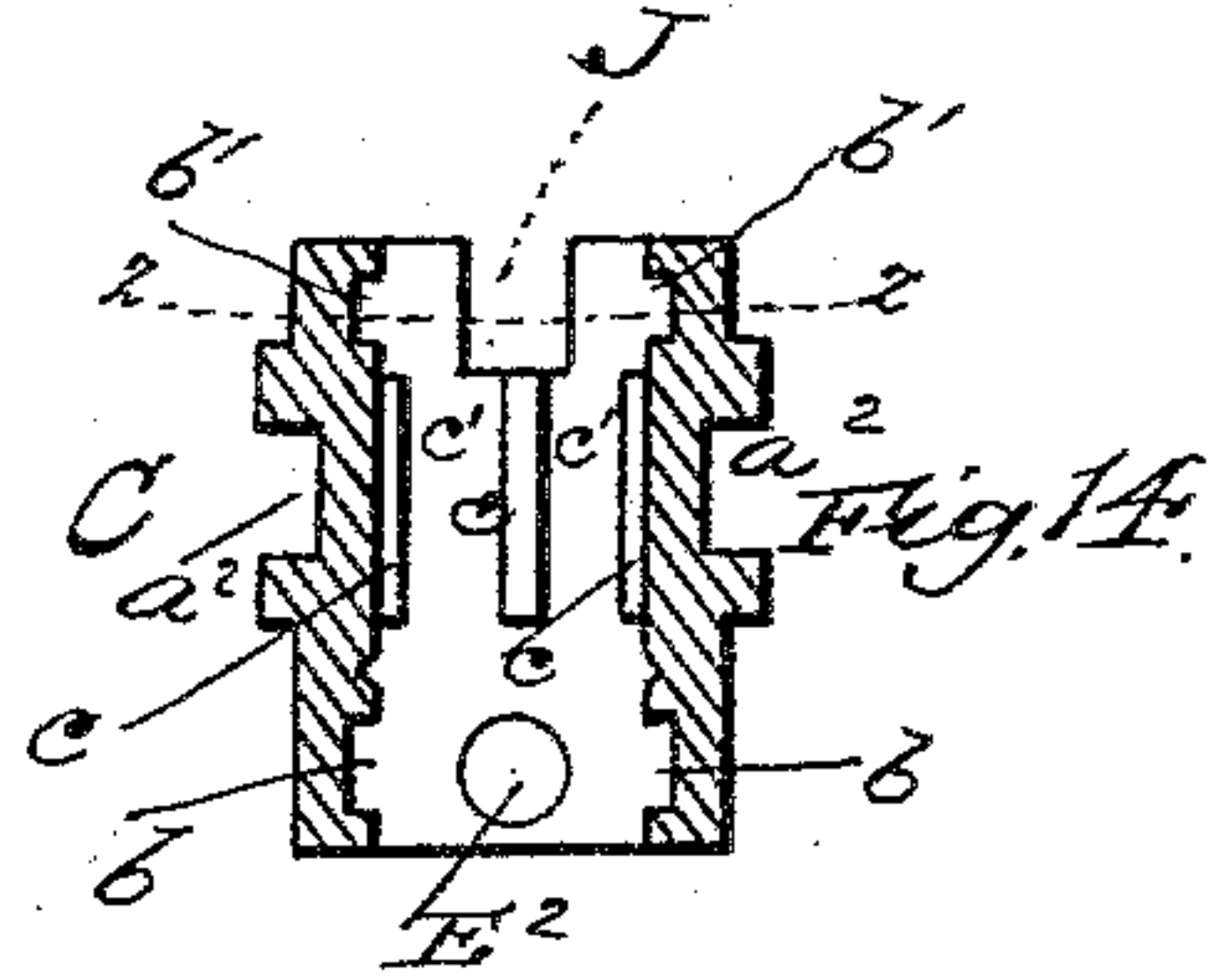
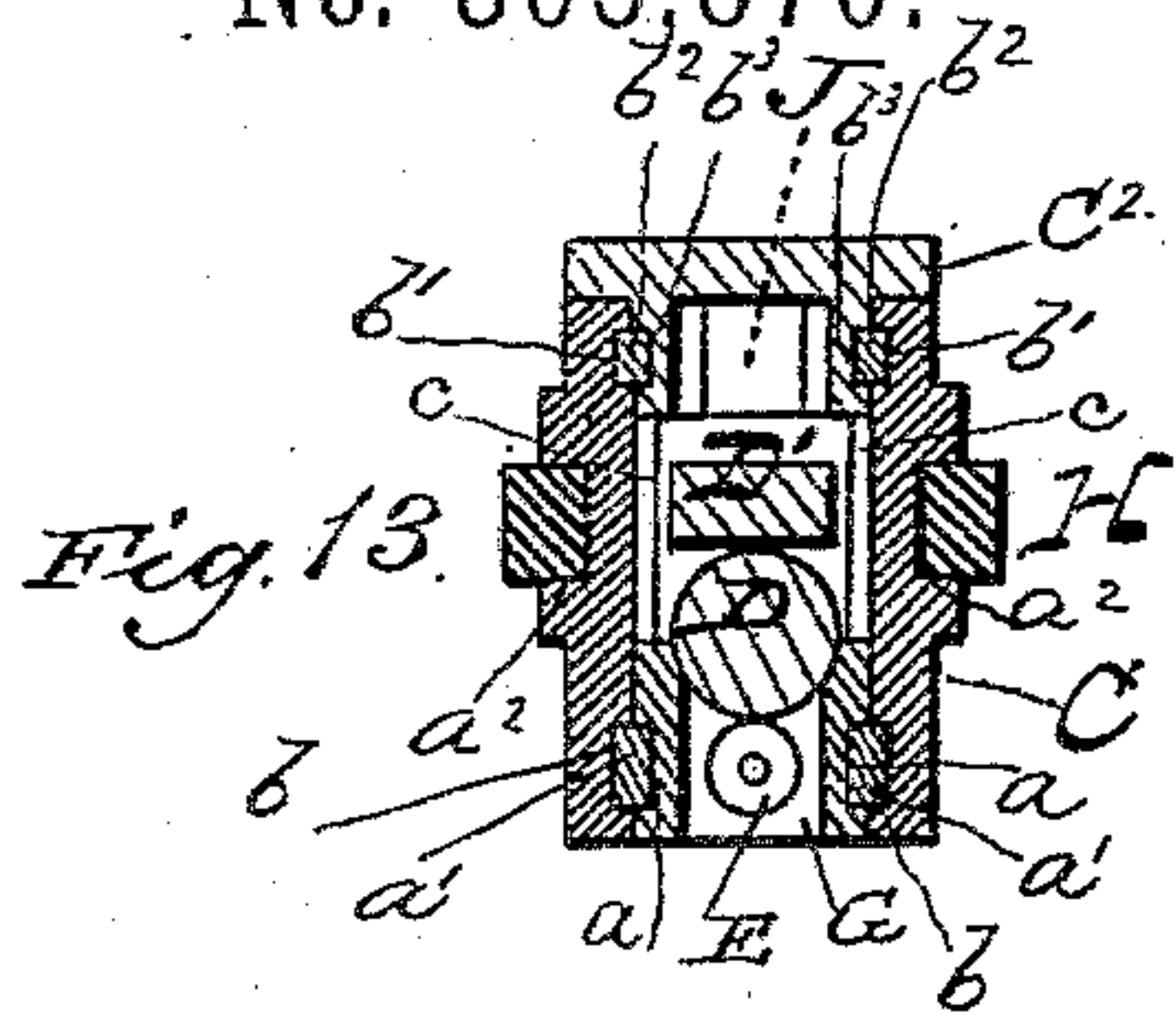
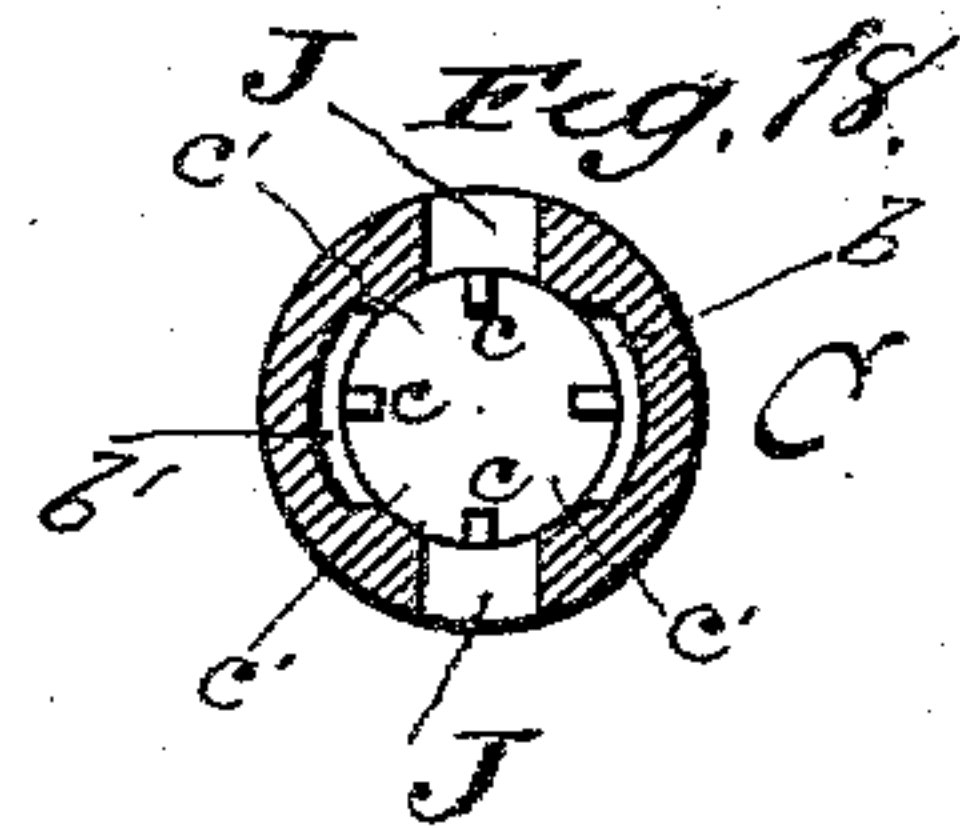
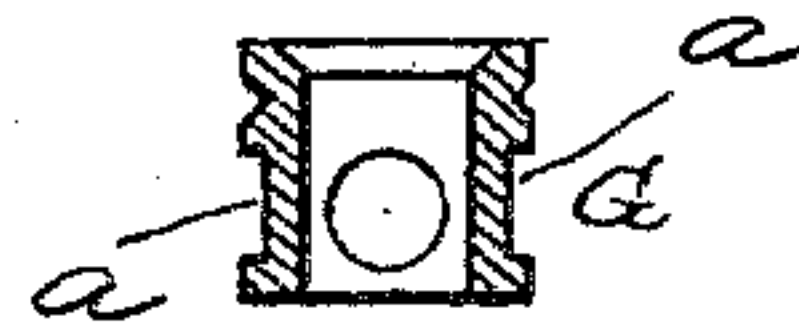


Fig. 16.



WITNESSES

E. H. Boates.
John Morrow

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UNITED STATES PATENT OFFICE.

JOHN EDWARD WATSON, OF LOUISVILLE, KENTUCKY.

ATTACHMENT TO PREVENT THE REFILLING OF BOTTLES.

SPECIFICATION forming part of Letters Patent No. 305,870, dated September 30, 1884.

Application filed January 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN EDWARD WATSON, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Attachments to Prevent the Refilling of Bottles after being once Filled and Emptied; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view of the bottle with its neck and my improvements in vertical section. Fig. 2 is a side view of the valve-chamber. Fig. 3 is a vertical sectional view of the same with the valve and locking-latches. Fig. 4 is a view of the latch-spring. Fig. 5 is a sectional view of the upper portion of the valve-chamber. Fig. 6 is a transverse sectional view taken on the lines *xx* of Fig. 1. Fig. 7 is a vertical sectional view of the lower portion of the valve-casing and valve. Fig. 8 is a bottom view of the valve-casing with the spring-latches applied, and Fig. 9 is a vertical sectional view of a modification of my invention removed from the bottle. Fig. 10 is a view of the elastic washer. Fig. 11 is a view of one of the latches, and Fig. 12 is a side view of a bottle with its neck partly in section to show my improvements. Figs. 13 and 14 are respectively vertical sectional views of modifications of my device; and Fig. 15 is a vertical sectional view of the upper portion of the valve-box, taken through the lines *xx* of Fig. 17. Fig. 16 is a vertical sectional view of a modification of the lower portion, G, of the valve-box. Fig. 17 is a longitudinal sectional view of a modification of the upper portion of the valve-box, taken through the line, *yy* of Fig. 15; and Fig. 18 is a longitudinal sectional view of a modification, taken through the lines *zz* of Fig. 14.

This invention has relation to attachments for preventing the refilling of bottles after once being filled and emptied, and to bottles to which such attachments are attached. It

is designed as an improvement upon an invention for which I have filed an application dated December 15, 1883; and the invention consists in the construction and novel arrangement of devices, as will be hereinafter more fully set forth, and particularly pointed out in the claims appended.

Referring by letter to the drawings, A designates a bottle of any suitable material, but preferably of clear glass, in order to be transparent, having cast, blown in, or otherwise formed in the neck A' cavities or recesses B, directly opposite each other, which serve as receptacles for the points of the spring-bolts, plungers, or hinge-latches E E. These bolts secure the valve box or chamber C on and in the inside of the neck A' of the bottle, being pressed or forced forward into the directly-opposite cavities or recesses by U-shaped or other suitable form of spring, F.

C² designates the upper portion of any suitable form of valve box or chamber, having formed within its interior an inner chamber, C', provided with two or more cylindrical or other suitably-shaped openings, J J J, placed at or near the top of the interior chamber, C', on the sides, and extending directly outward to the exterior circumference of the valve box or chamber C. These openings should have a combined area of not less than the area of the opening K at the bottom of the lower portion, G, of the valve box or chamber C. Loosely fitting within the interior chamber, C', is a light, buoyant, spherical, or other shaped valve, D, made of cork or any suitable elastic material, which rests on the upper edge of the lower portion, G, of the valve-box. On the exterior of the lower portion of the upper part, C², of the valve box or chamber C is cast, pressed, or otherwise formed a screw-thread to engage with a similar screw-thread cast, pressed, or otherwise formed on the inside of the lower portion, G; or the two parts may be slipped one within the other and fastened to each other by means of a pin or rivet passed directly through each, as may be deemed best. Just beneath a shoulder, C³, formed on the outside of the upper portion of the valve box or chamber C², immediately below the openings J, is fitted an elastic washer or band, H, made of rubber, cork, or other

suitable material of an elastic nature, and should be larger in diameter than the internal diameter of the neck A' of the bottle. This elastic washer or band is intended to serve a twofold purpose: first, to make a fluid-tight joint between the neck of the bottle and valve-box; and, second, to make a fluid-tight joint between the two parts C and G, forming the valve box or chamber C. This prevents the passage of any fluid around the outside of the valve box or chamber itself or between the two parts forming the valve box or chamber C, but causes the fluid contents of the bottle, when being drawn off or poured out, to pass through the valve-box by the opening K raising the valve D' through the internal chamber, C'.

The valve box or chamber C may be made of any suitable material of proper strength and freedom from corrosion or contaminating effects on the contents of the bottle; but I prefer making the upper portion of glass, in order that the valve can be seen at all times.

C' indicates the interior chamber, formed on the inside of the upper portion of the valve-box C, and is made of sufficient depth to contain the single buoyant valve or less buoyant valve with its float D'. The buoyancy of this valve should be sufficient, so that it may float with two-thirds or three-fourths of itself submerged beneath any fluid similar to the contents of the bottle in which it is in; or a valve may be used of less buoyancy or no buoyancy at all, provided it has a float above it. Such valve and float is shown in Fig. 13 in section.

The object in having the valve buoyant as well as elastic, or being elastic and not particularly buoyant, but provided with a float above it, is, should any one attempt refilling the bottle by inverting it or turning it mouth downward, to let the valve fall back from its seat 2 2, the fluid could be gently forced by the valve were it too heavy. Now, being buoyant and the fluid entering the mouth while the bottle is in an inverted position, will first fill the chamber C', surrounding the valve; but as the fluid rises sufficiently to cover two-thirds or more of the valve, it floats and rises with the fluid until it closes up the opening K at its valve-seat 2 2, preventing the fluid from entering the bottle.

F designates any suitable form of spring, made of any suitable material, for actuating bolts, plungers, or spring-latches E E, to fasten or secure within the neck of the bottle the valve box or chamber C.

G indicates the lower portion of the valve box or chamber C, having an opening, K, in the center, and having a central portion which extends upward into and is encompassed by the interior chamber, C'.

In the modification, Fig. 13, the valve-box is shown as having an external annular groove, a², to receive the elastic band H, and the lower portion, G, of the valve-seat is made removable and provided in its outer wall with diametrically-arranged recesses a, to receive a

packing, a', which also engages the recesses b in the inner walls of the said lower portion of the valve-box. This valve-box is also provided in its upper inner walls with similar recesses, b', to receive a packing, b², which engages recesses b³ on the outer face of the portion C², whereby the upper and lower portions are respectively secured to the valve-box, as shown. The body C of the valve-box is provided with vertical ribs c, having interspaces c', to form channels for the outer passage of the liquid from the bottles, the ribs forming guides for the raising and falling of the valve or valves therein.

The mode of operation is as follows: After the bottle has been filled in the usual manner, take the upper part of the valve-box C, place the elastic band or washer H on the same, pressing the band well up under the collar or shoulder C³, invert the part C, and drop one of the valves into the inner chamber, C'. Then the lower part of valve-box G is screwed or secured to the upper part, C, pressing well up against the elastic washer or band H. Insert into the opening E² the two bolts or plungers, E E. Take the U-shaped spring and insert one foot into each cavity in the end of the plungers or bolts, press the bolts with the finger and thumb well into their openings, and insert valve box or chamber thus fitted together into the neck of the bottle. The sides of the neck, being smooth, keep the bolts compressed until the valve box or chamber is pushed down into the bottle-neck opposite to the said cavities in the neck, when the springs F force the bolts or plungers E E into the cavities B B, thus preventing the removal of the said valve-box from the bottle-neck. The liquid in the bottle can be poured out, but no liquid can be passed into the bottle, owing to the valve D closing the opening K, and should the bottle be inverted, and an attempt be made to force the liquid into the bottle while the valve has fallen away from the opening K, no better result will be obtained, for just as soon as the chamber C becomes filled the valve D, owing to its buoyancy, will float up to the opening K and close it.

I do not wish to be understood as claiming in this application any of the devices which I have already claimed in my application, No. 114,663, filed December 15, 1883, for a similar device.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An attachment for preventing the refilling of bottles, composed of a valve-box containing an elastic buoyant valve, made in parts with the upper and lower portions connected together, having formed on the outside of the lower end of the upper portion a screw-thread to engage with a like thread on the inside of the outside of the bottom portion, said bottom portion to extend up on the inside of the upper portion to form a valve-seat on its edge, the valve-box with two or more open-

ings directly out to the exterior circumference and above the collar, under which the elastic washer or band is secured, and with two openings or recesses in which slide two
5 spring locking devices for preventing the removal of the valve box or casing, substantially as specified.

2. A valve-box placed in the neck of a bottle, having a stopper or valve and a buoyant
10 float to prevent the refilling of a bottle, substantially as specified.

3. The combination, with a valve-box hav-

ing means for securing it in the neck of a bottle, of an elastic spherical non-buoyant valve and a float of sufficient buoyancy to lift the
15 valve when the float is submerged or partly submerged in fluid, substantially as and for the purposes specified.

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

JOHN EDWARD WATSON.

Witnesses:

C. E. SCHRODT,

SAML. MANLY.