

No. 617,629.

Patented Jan. 10, 1899.

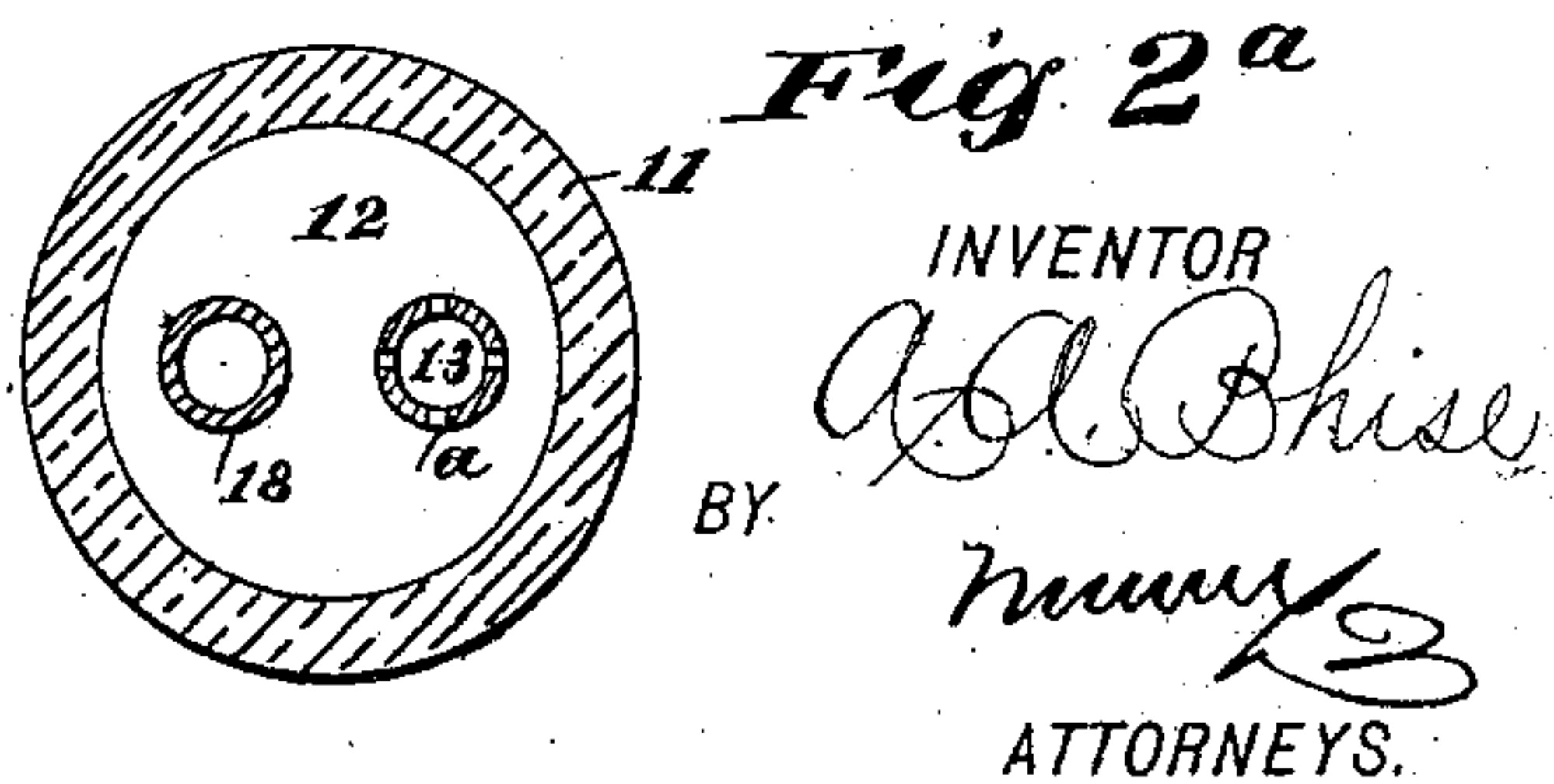
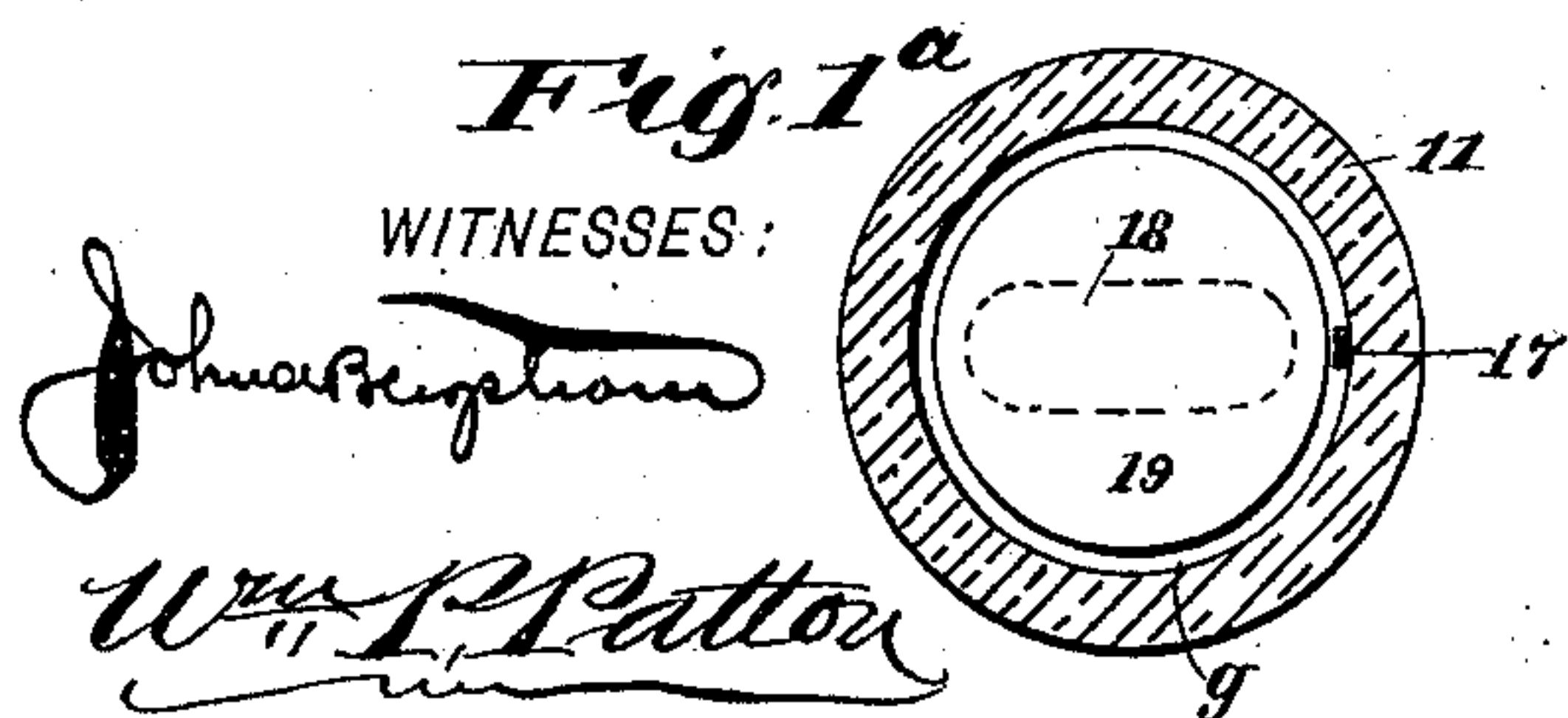
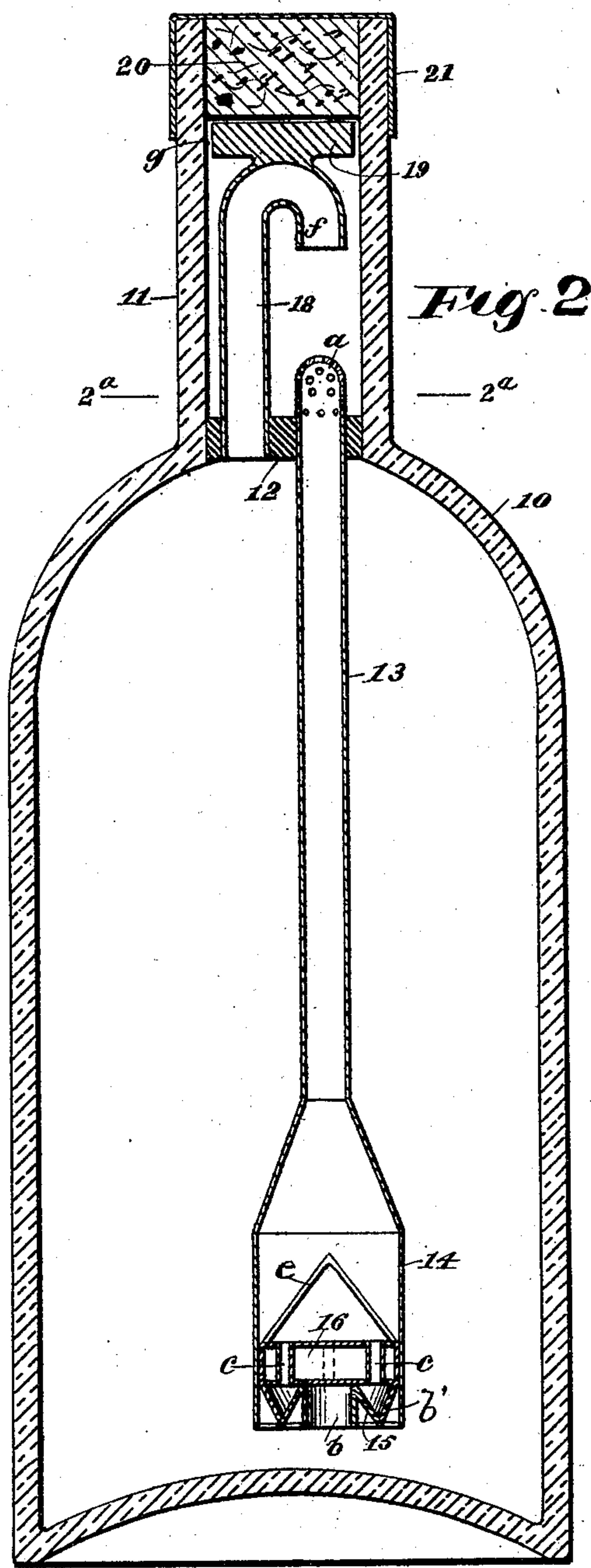
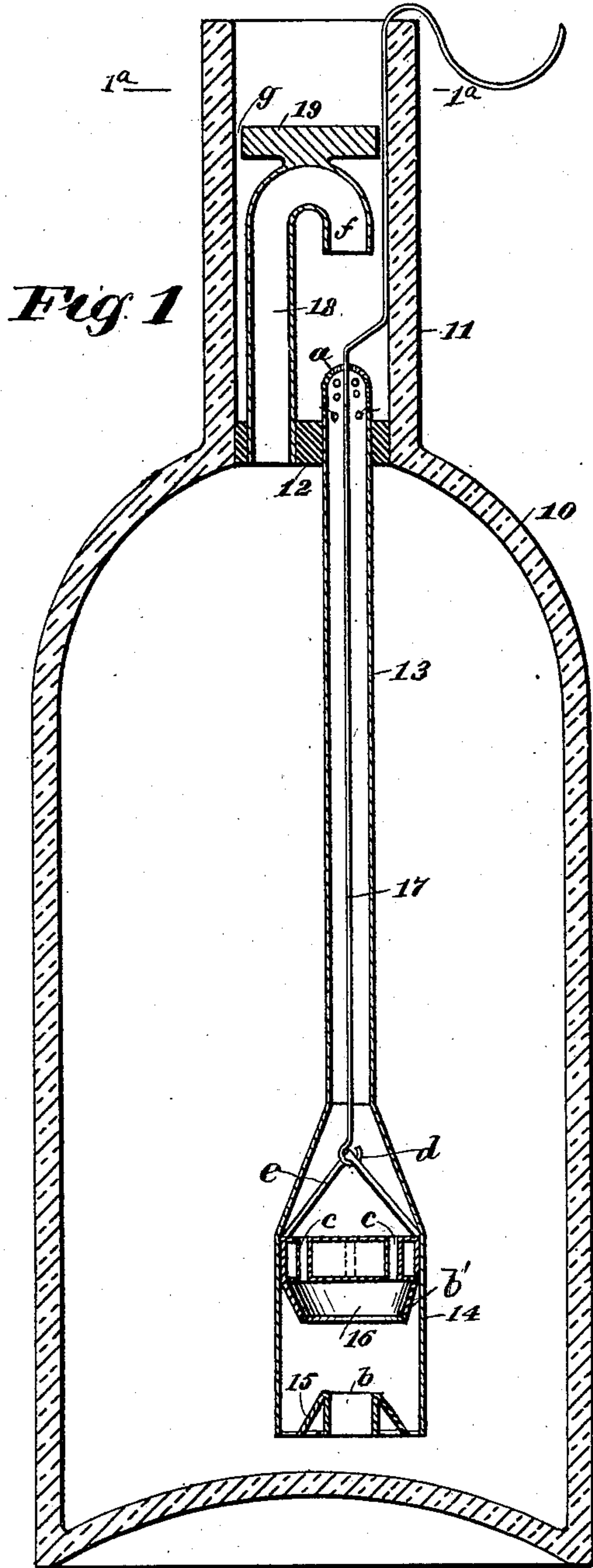
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CLOSURE FOR PREVENTING REFILLING OF BOTTLES OR OTHER LIQUID HOLDING
RECEPTACLES.

(No Model.)

(Application filed Mar. 28, 1898.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 3.

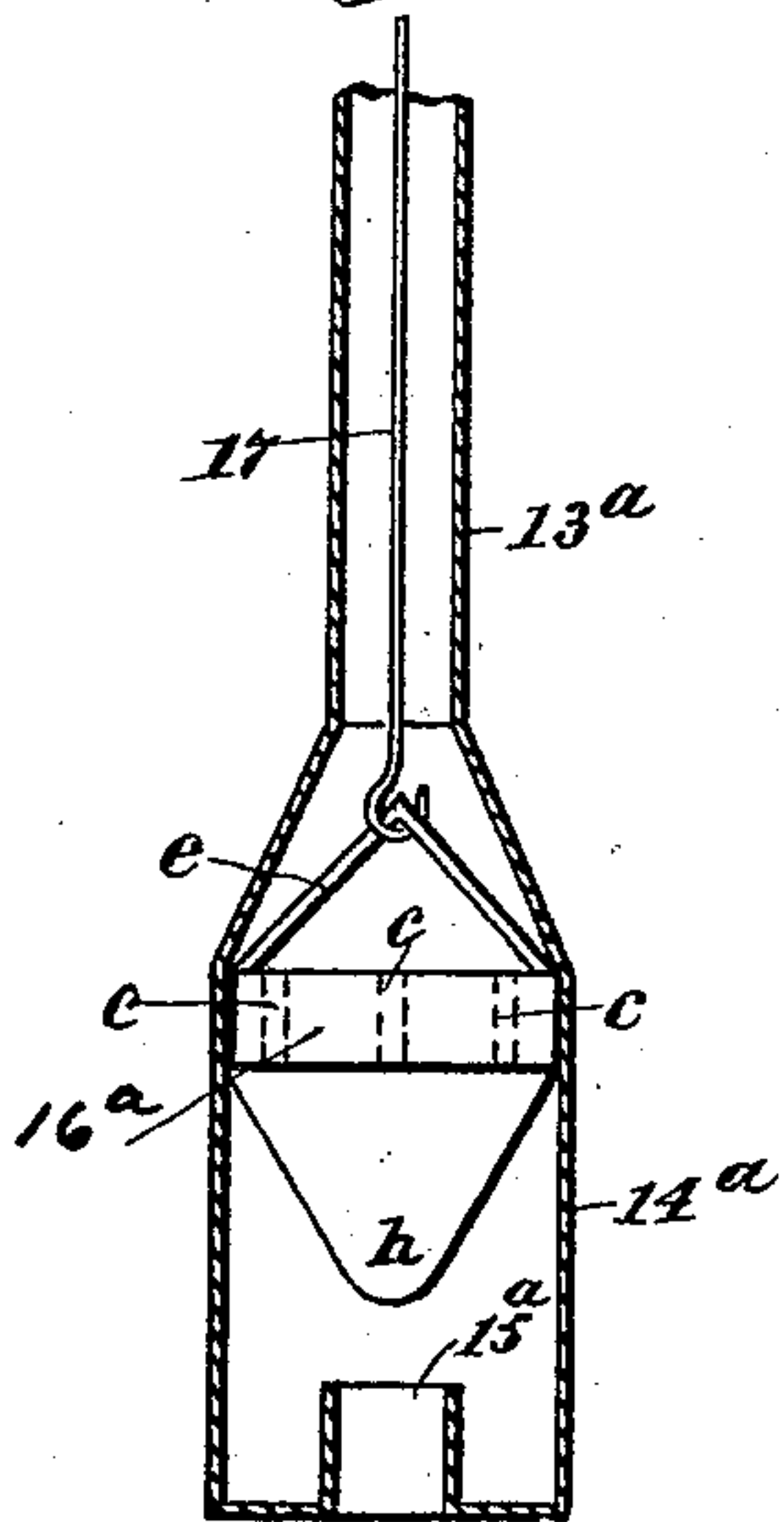


Fig. 4.

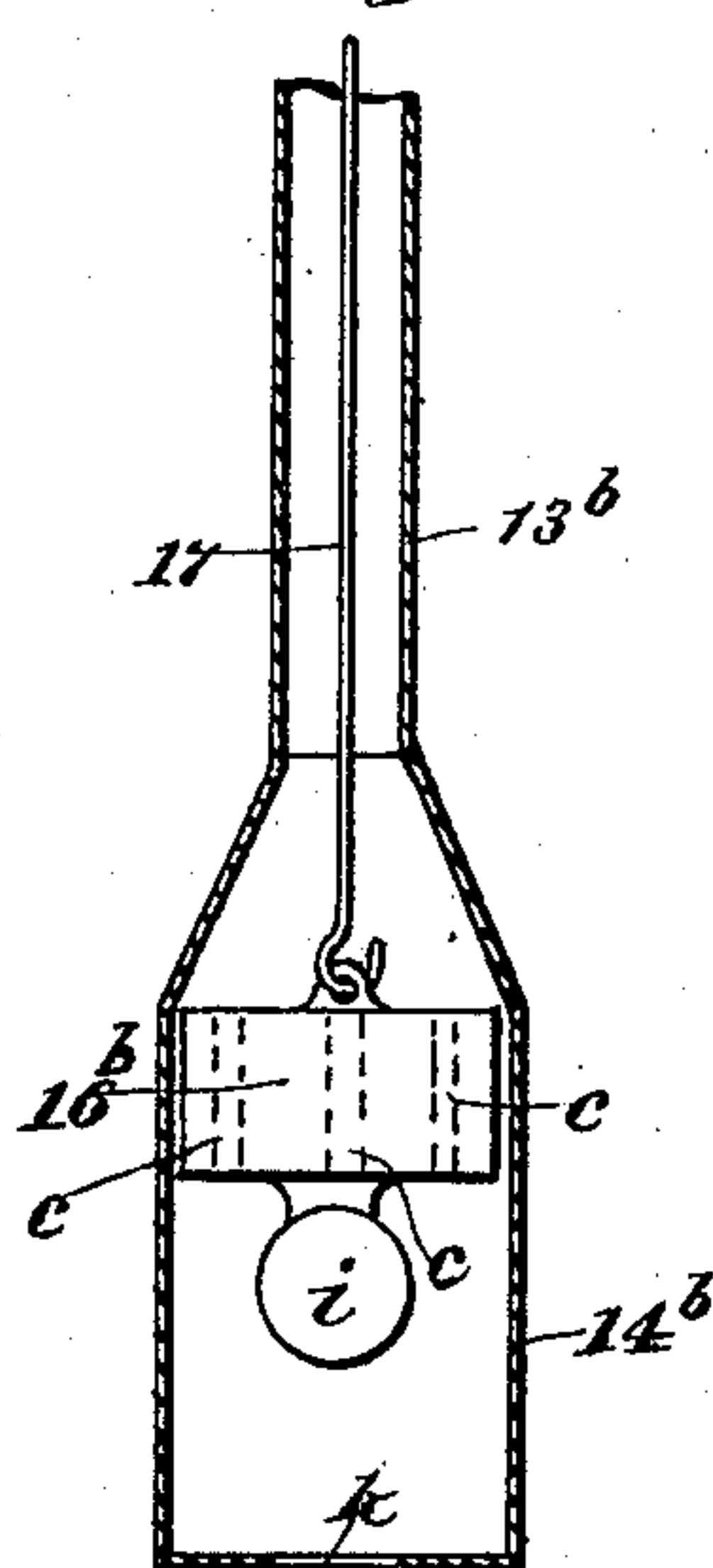


Fig. 5.

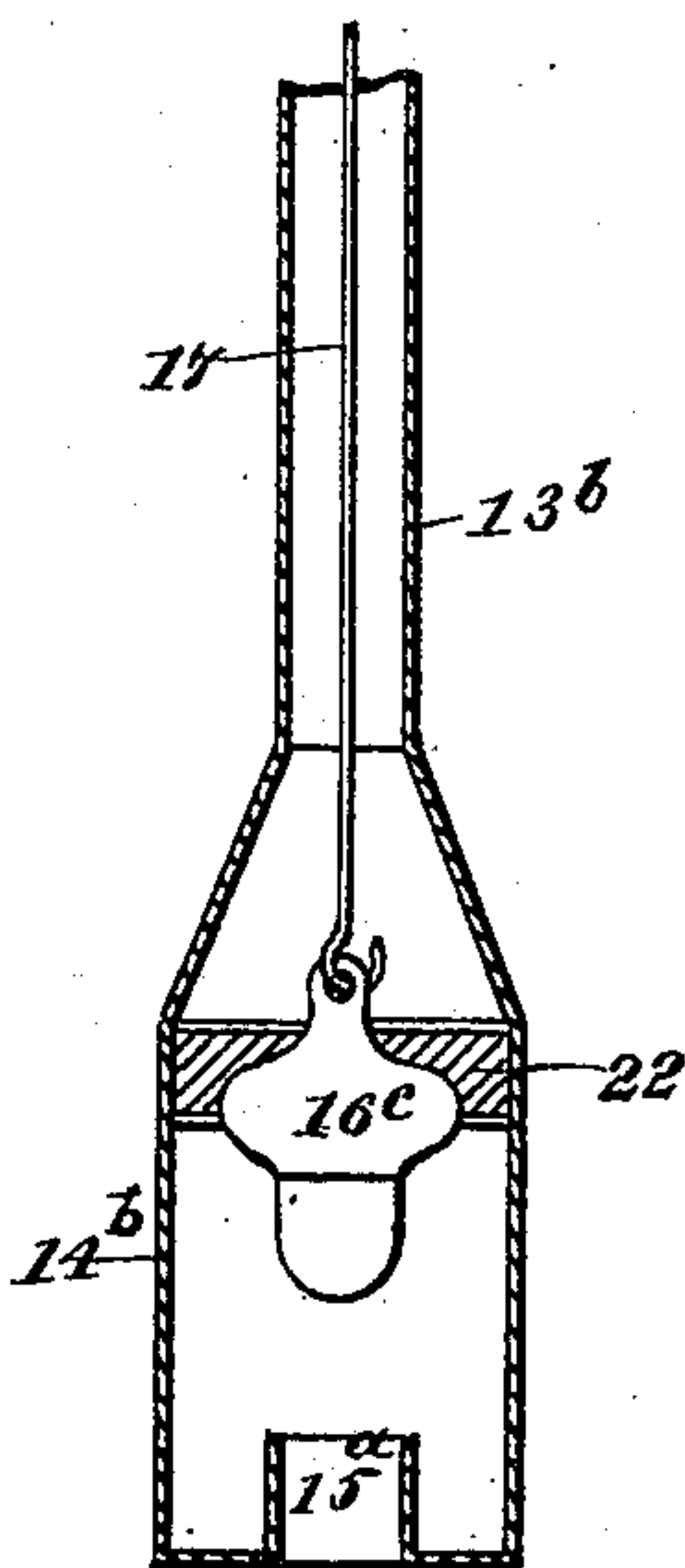
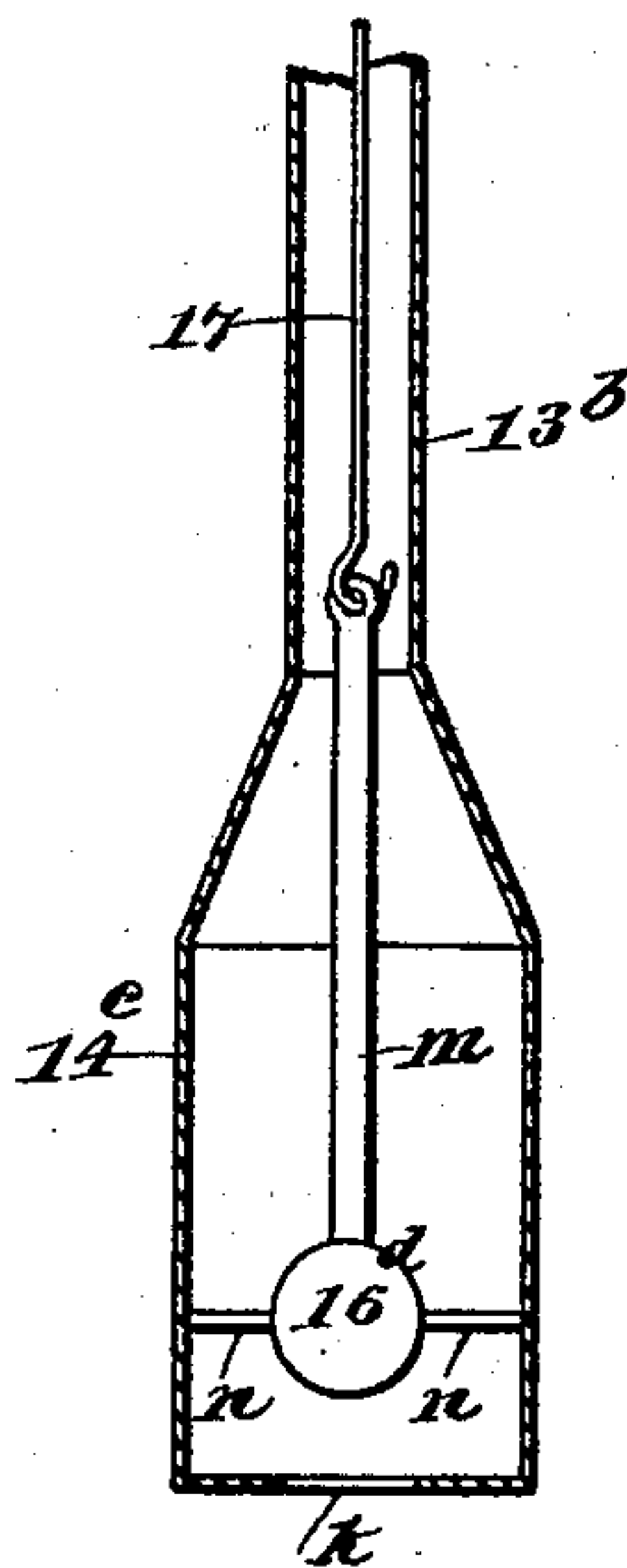


Fig. 6.



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CLOSURE FOR PREVENTING REFILLING OF BOTTLES OR OTHER LIQUID-HOLDING RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 617,629, dated January 10, 1899.

Application filed March 28, 1898. Serial No. 675,432. (No model.)

To all whom it may concern:

Be it known that I, ATMARAM ABAJI BHISE, of Bombay, India, have invented a new and Improved Closure for Preventing the Refilling of Bottles and other Liquid-Holding Receptacles, of which the following is a full, clear, and exact specification.

This invention relates to a class of bottles, cans, tins, boxes, or other vessels used for trade purposes as an original package to hold in a sealed condition liquid goods of various kinds—such as alcoholic, malt, and effervescent liquors or proprietary medicines, oils, scents, syrups, preserves, varnishes, paints, petroleum, &c.

The object of my invention is to provide a novel device of the indicated character which is of simple construction and cheap of manufacture and that will prevent the pouring of any liquid into the bottle or vessel after it has been opened and the contents partially or entirely removed therefrom.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of a bottle illustrating one form of the invention, parts being arranged to permit filling of the receptacle with liquid. Fig. 2 is a view similar to Fig. 1, but showing the interior parts adjusted differently after the bottle has been filled with liquid, the bottle being shown corked to seal the contents. Fig. 1^a is a transverse sectional view of the neck of the bottle, taken substantially on the line 1^a 1^a in Fig. 1. Fig. 2^a is a transverse sectional view of the bottle-neck essentially on the line 2^a 2^a in Fig. 2. Fig. 3 is a sectional side view of a modified form of the improved closure. Fig. 4 is a sectional side elevation of a somewhat different form of the improvement, and Figs. 5 and 6 are sectional side views of other modifications of the device.

The improvement hereinafter described is preferably employed in connection with a bottle to prevent it from being refilled; but

it is to be understood that it may also be applied to any liquid-holding vessel having a neck or spout through which to introduce and decant the liquid contents.

The bottle-body 10 (shown in Figs. 1 and 2 to illustrate the application of one form of the improvement) may be of any convenient size and may be of any preferred design, it being only essential that the neck 11 thereon be of sufficient internal diameter and length to permit the proper location therein of essential details of the improvement. For the easy insertion of important parts the neck 11 may with advantage be rendered cylindrical in its bore, as represented in Figs. 1 and 2.

Within the neck 11 and at or near the point of its junction with the body 10 a disk 12 is secured in place by any suitable means and is vertically perforated at two points for the reception of two essential portions of the improved closure, respectively designated by the reference characters 13 18. The part 13 consists of a straight tube of glass or other available material having its upper end formed with a perforated or reticulated screen *a*, and this end portion of the tube 13 is secured in one of the orifices in the disk 12, so that the screen will project above the disk, it being understood that the tube is affixed in place in the disk 12 before the disk is introduced within the neck 11. The lower portion of the tube 13 is enlarged diametrically, producing a chamber 14 thereon, and at the bottom of said chamber a preferably coniform valve-seat 15 is produced, which encircles an opening *b*, the seat projecting upwardly within the chamber. In the chamber 14 a valve 16 is held to slide, and said valve may be cylindrical in its upper portion and coniform at *b'* toward the lower end—that is, flattened on the lower surface above the coniform portion *b'* to adapt it to seat upon and close the upper end of the valve-seat 15, while the lower edge of the depending coniform portion *b'* encircles and seats at its lower end upon the valve-seat 15. The cylindrical part of the valve-body 16 has vertical bores *c* formed in its periphery, thus providing air or liquid passages from the bottom of the chamber 14 through the valve-body when the latter is raised from the seat 15. A pliable strand 17, preferably

of thin wire, is provided, which is introduced through one of the perforations of the screen *a*, there being a hook *d* bent on the lower end of the wire, which is caused to have a hooked engagement with a bail *e* or other projection on the upper end of the valve-body 16. In the remaining perforation of the sealing-disk 12 the lower end of the return bent tube 18 is secured, said tube having its short depending member *f* positioned above the screen *a* of the tube 13. On the top of the return bent tube 18 a flat-topped circular baffle-plate 9 is formed or secured and which is of such relative diameter as will afford an annular crevice *g* between the edge of the plate and the inner wall of the neck 11.

Assuming that the described closure is in position within the bottle 10 and the neck 11 thereof and that the valve 16 is held elevated from the seat 15 by the wire strand 17, as shown in Fig. 1, it will be seen that liquor may be poured into the bottle through the top portion of the neck 11, that extends above the baffle-plate 9, the liquid after passing through the crevice *g* then passing through the straight tube 13 down into the body 10.

While the operation of filling the bottle is progressing, air will be escaping only from the bent tube 18 until the bottle is filled. When it is desired to seal the bottle, the wire strand 17 is pulled upon with sufficient force to straighten the hook-bent portion *d* of the wire, which will detach it from the valve 16 and permit a free removal of the said wire. The valve-body 16 will now gravitate toward the seat 15 and seal the aperture *b*. A cork 20 is now inserted within the neck 11 above the baffle-plate 9, and a sealing-cap 21 of thin metal or other suitable material may be placed upon the upper portion of the bottle-neck 11, so as to cover the cork, as shown in Fig. 2. When the contents of the bottle are to be partly or entirely decanted therefrom, the cap 21 and cork 20 are first removed, which will permit a free escape of the liquid from the bottle, as air may enter the body 10 through the pipe 13 and chamber 14 when the bottle is tipped to decant the liquid, which will cause the valve 16 to leave the seat 15 in an obvious manner.

The position of the bottle-body 10 being necessarily upright, if it be attempted to pour therein through the open neck 11 this will be found impossible, as then the valve 16 being upon the seat 15 must seal the lower end of the tube 13.

If the aperture *b* in the chamber 14 is closed air-tight and an attempt is made to pour liquid into the bottle-body 10 while the valve is in such a position as to close said aperture, it will not be possible for air to escape from the bottle upon introduction of liquid within the bottle-neck 10. This is evident, as the liquid must rise in the bent portion of the tube 18, so as to fill the depending member thereof, before any of the liquid can pass down through the long leg of said tube into the bot-

tle, and as the closure of the valve 16 upon the seat 15 prevents escape of liquid into the bottle through the tube 13 it will be manifest that under the conditions mentioned no liquid can possibly enter the body of the bottle.

In Figs. 3, 4, 5, and 6 the valve-body and seat are shown somewhat changed in formation; but the function and operation of these valves are identical with that already described.

Referring to Fig. 3, it will be seen that the tube 13^a and chamber 14^a are like said parts in Figs. 1 and 2, but the valve-seat 15^a is in the form of a short upright tube normally open throughout its length. The valve-body 16^a has its upper portion similar to the valve 16, but the lower portion is elongated somewhat, so as to produce a tapered portion *h* thereon, which will enter within and seat upon the top edge of the cylindrical valve-seat 15^a when the valve-body is free to fall toward its seat.

In Fig. 4 the body 16^b of the valve therein shown is cylindric and is peripherally grooved to afford air-passages; but the lower end portion *i* of the valve is given a globular form, which may seat upon the margin of a circular aperture *k*, formed in the lower wall of the chamber 14^b.

The modification shown in Fig. 5 provides an essentially acorn-shaped valve-body 16^c, which is checked from rising too far by the apertured disk 22, the lower end of the valve being rounded, so as to adapt it to seal the opening surrounded by the cylindric valve-seat 15^a, above which it is hung by the wire strand 17.

The tube 13^b shown in Fig. 6 is like the tube 13 in the figures previously described and has the chamber 14^c thereon, which is perforated near the center of its bottom wall to afford a valve-seat *k*. In this construction of the device the valve-body 16^d is globular and has an upward rod-like projection *m* thereon, formed at its upper end with an eye to receive the hook formation on the lower end of the wire strand 17, side bars *n* projecting from the valve-body to loosely contact with the wall of the chamber 14^c, so as to guide the valve toward its seat.

It will be apparent that the several forms of the valve and seat therefor which have been described are all of equivalent formation. Hence I do not desire to limit the construction of this feature of my invention to any particular design for the valve and its seat, it being only essential that a valve-controlled passage be produced in the lower end of the tube 13 and that means be afforded to temporarily hold the valve from its seat during the time that the bottle is being filled with liquid.

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

1. The combination, with a receptacle, and a neck thereon, of a sealing-disk in the neck,

a tube pendent from the disk in the receptacle, a valve controlling an air-opening in the lower end of the said pendent tube, and a bent tube projecting up in the neck of the receptacle and having its pendent end above the top of the hanging tube, substantially as described.

2. The combination, with a receptacle, and a neck thereon, of a disk having two perforations and located in the lower part of the neck, a pendent tube fast at its upper end in one of the perforations in the disk, a chamber on the lower end of said pendent tube, a valve slidable upwardly in the chamber and adapted to control an opening in the lower wall of the chamber, means for temporarily holding the valve off of its seat, and a bent tube in the other perforation in the disk, and having its shortest member located over the upper end of the pendent tube, substantially as described.

3. The combination, with a bottle or the like having a neck, and a disk in the lower part of said neck, of a tube hung from the disk, a chambered enlargement on said tube near the lower end thereof, the bottom of the chamber being perforated and having a valve-seat around said perforation, a valve slidable in the chamber above the valve-seat, and a pliable strand passing down through the pendent tube and adapted to temporarily hold the

valve off the valve-seat, substantially as described.

4. The combination, with a bottle or the like having a neck, of a disk in the lower part of the neck, a tube pendent in the bottle and passing through the disk at the upper end of the tube, a screen on the top of the pendent tube, a chambered enlargement on the lower portion of said tube, a valve-seat around a perforation in the bottom of the chamber, a valve slidable in the chamber over the valve-seat, and a wire extending downwardly through the pendent tube and adapted to engage the valve to hold it temporarily from the valve-seat, substantially as described.

5. The combination, with a bottle or the like having a neck, and a disk in the lower part of said neck, of a depending tube tapping the disk with its upper end, a valve in the lower portion of the pendent tube and adapted to seal an opening therein, and a bent tube projecting up in the neck of the bottle and having a baffle-plate thereon of a diameter to permit a crevice to intervene between said plate and the bottle-neck, substantially as described.

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