

N. Thompson,

Stopper Lock,

N^o 40,293.

Patented Oct. 13, 1863.

Fig: 1.

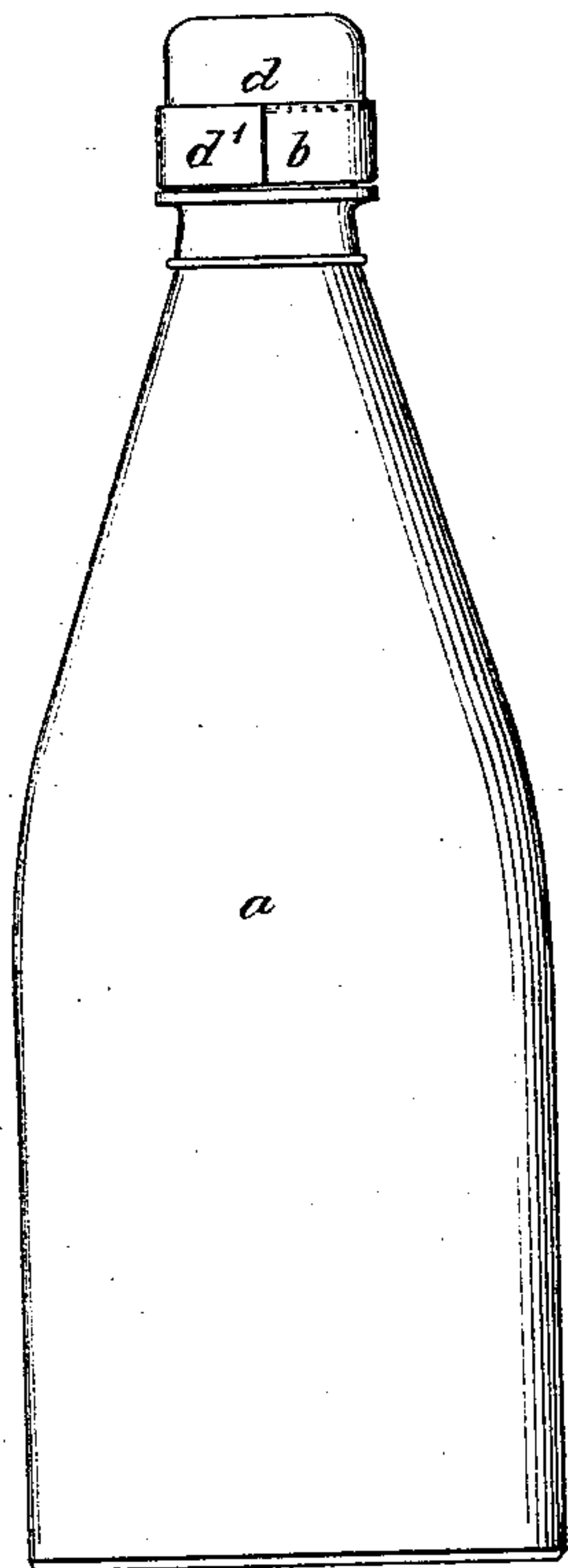


Fig: 3.

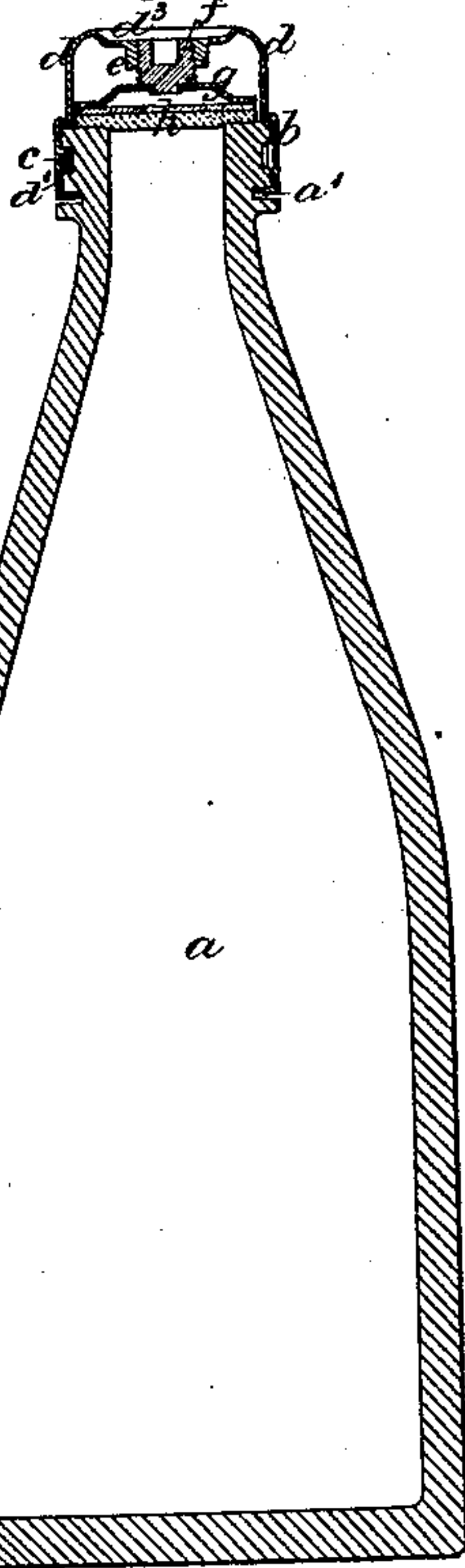
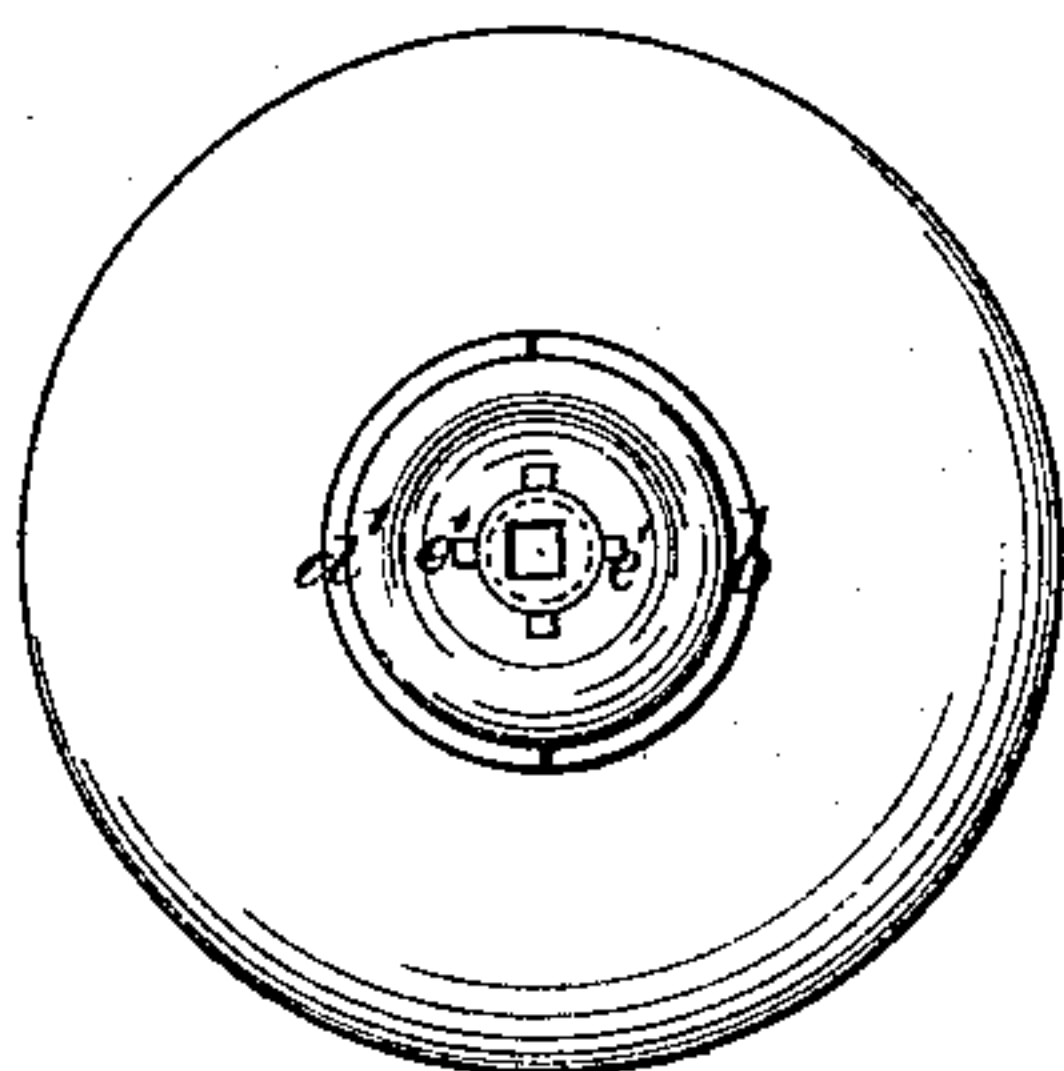
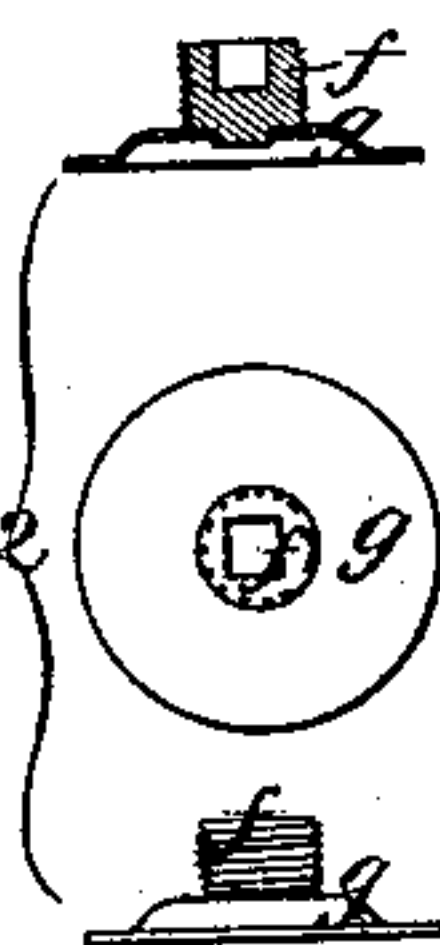


Fig: 2.



Figs: 12



Figs: 13.



Witnesses;
Geo. Pitt
Chas. Black

Inventor;

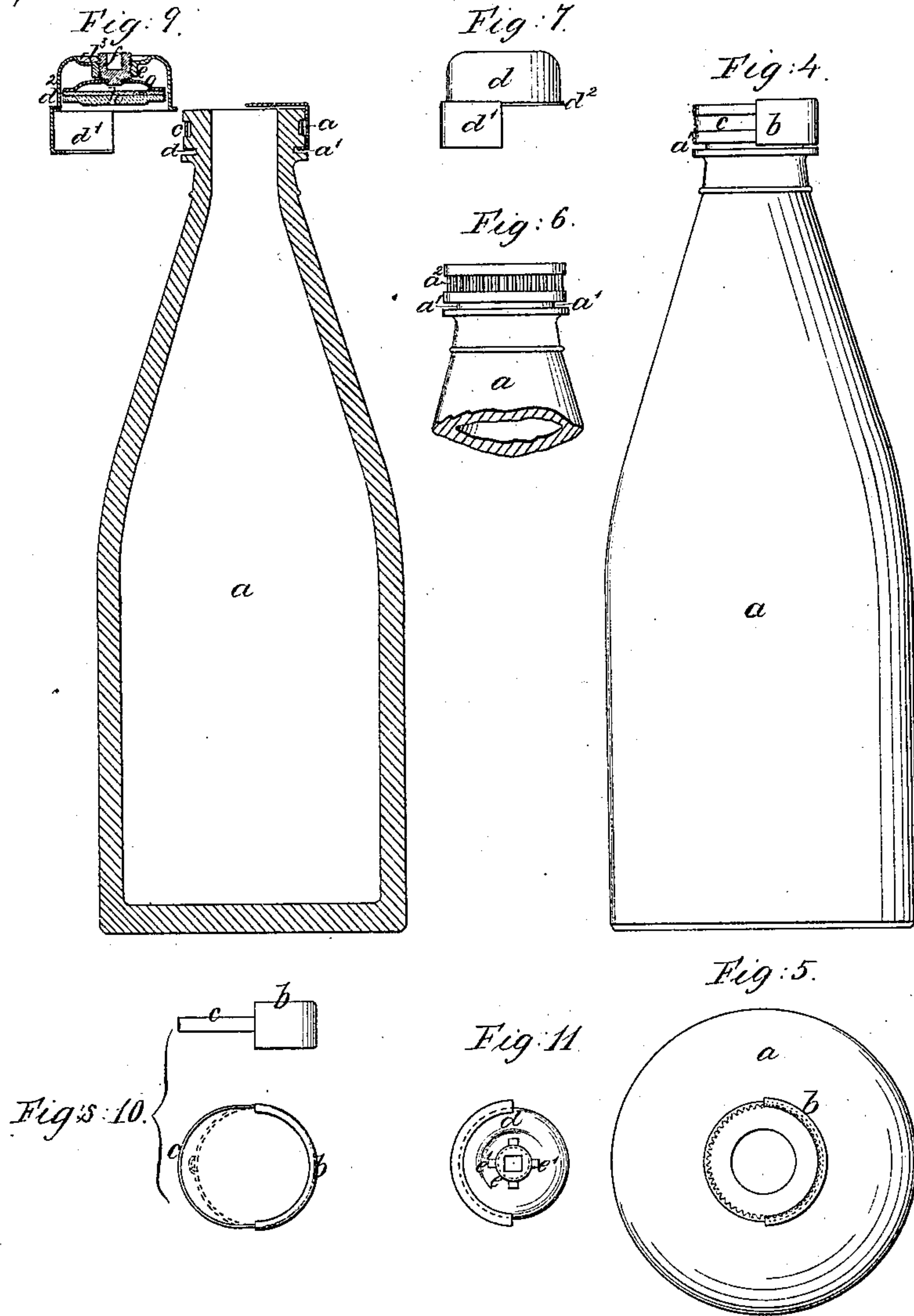
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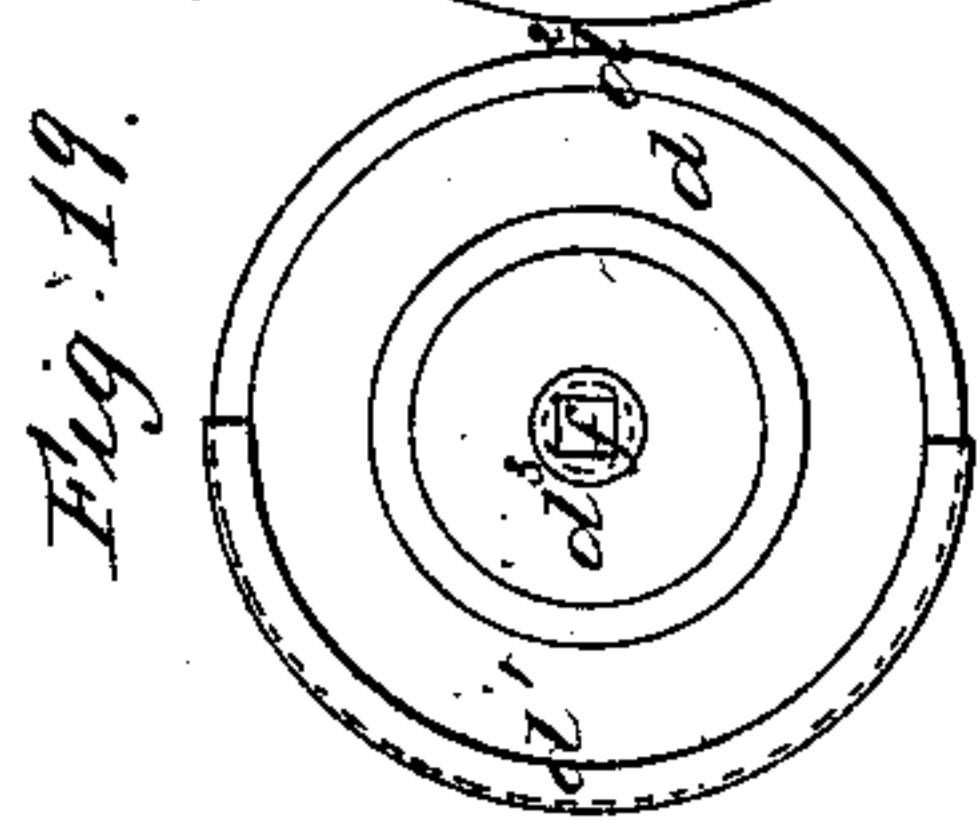
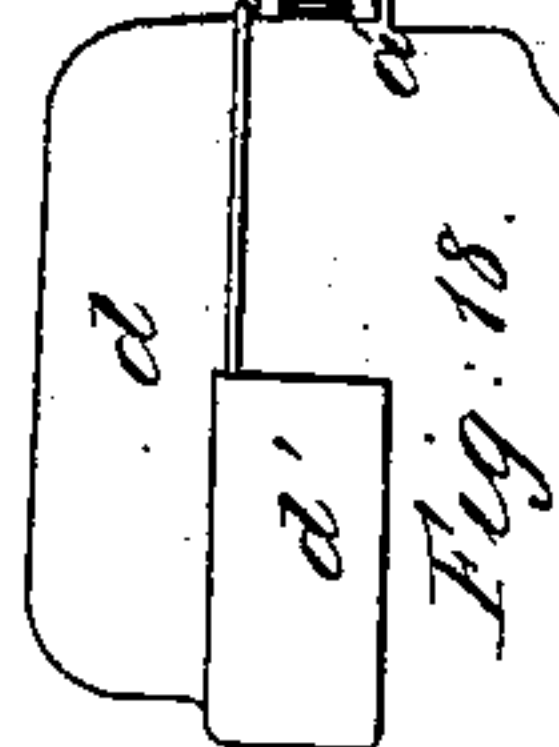
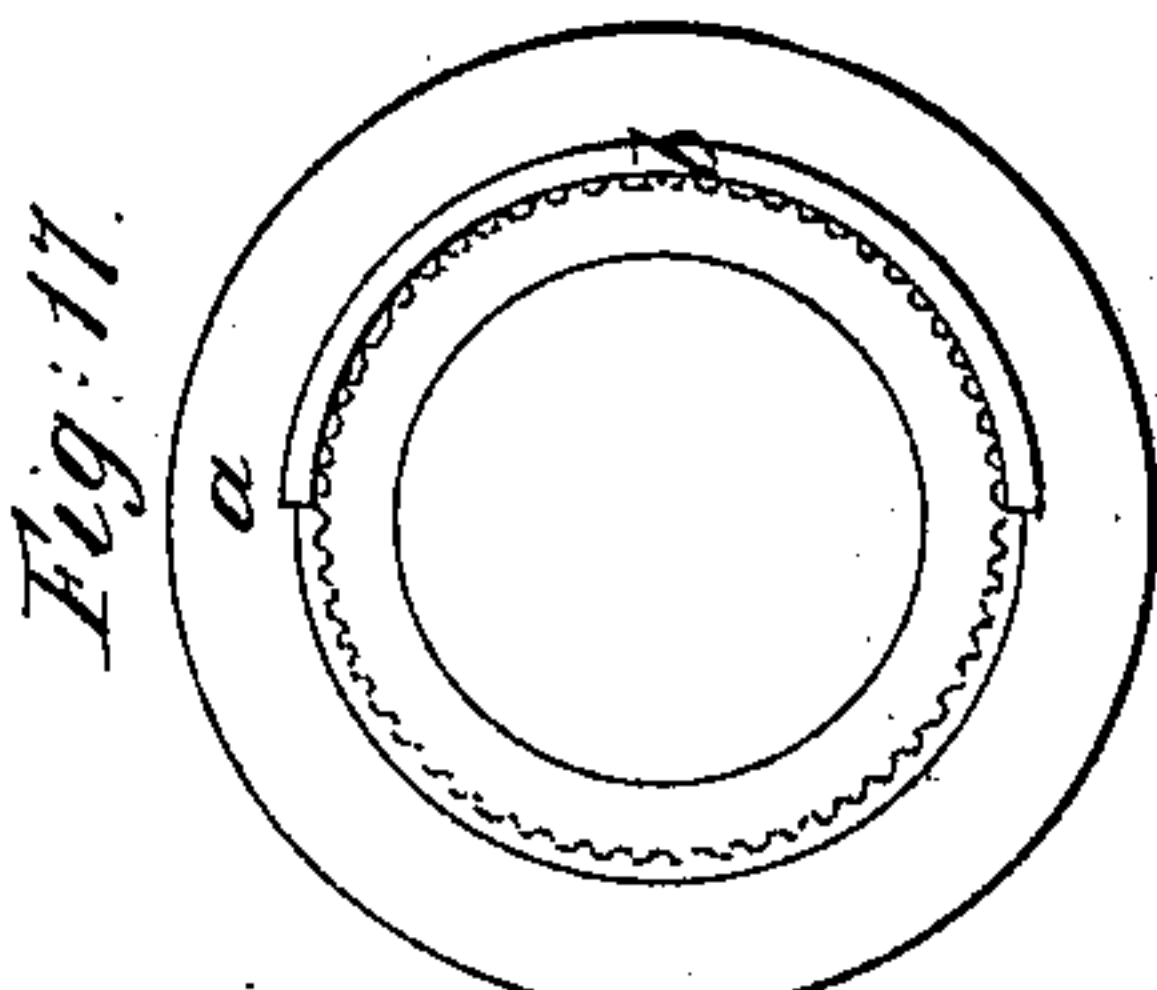
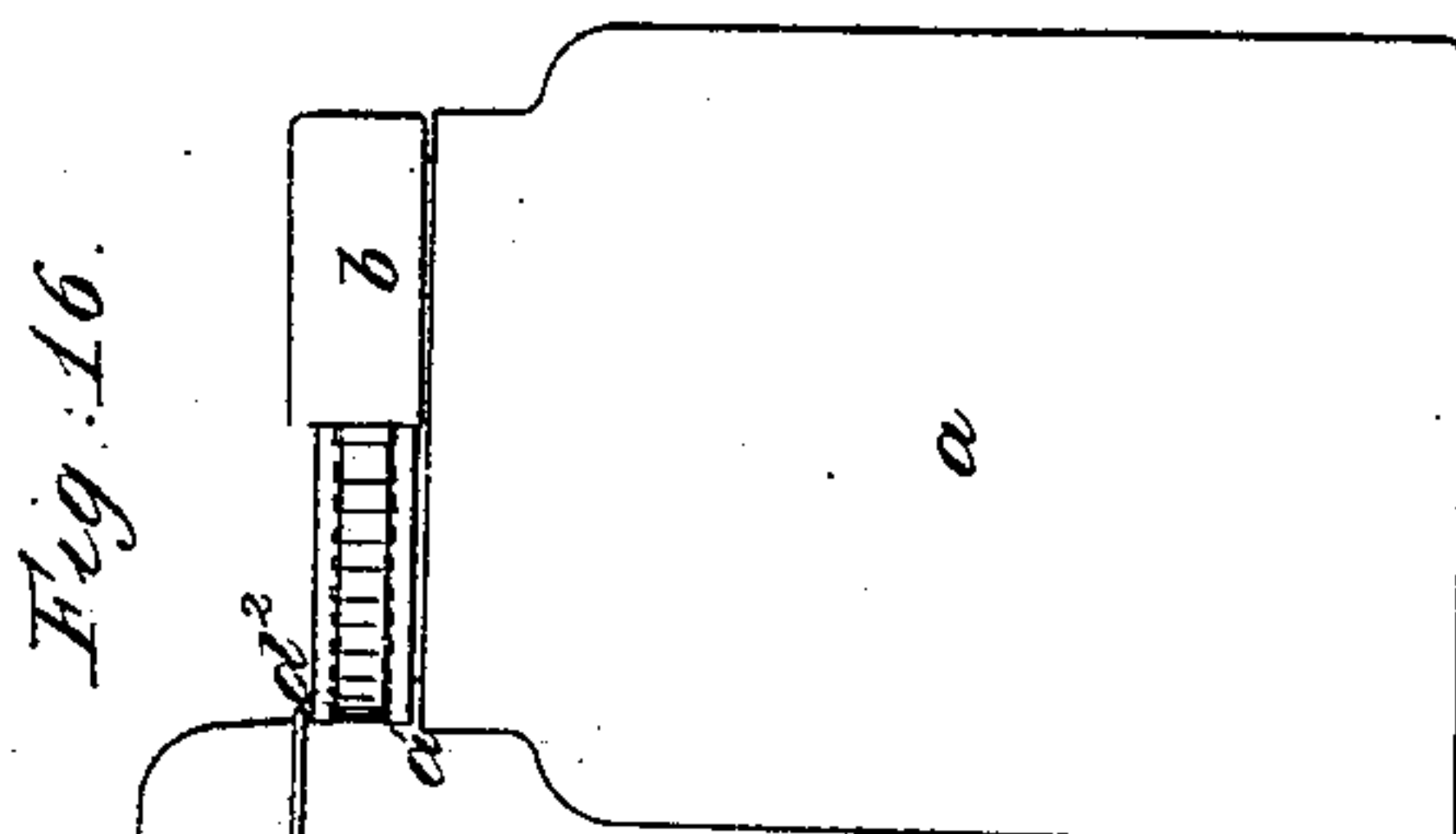
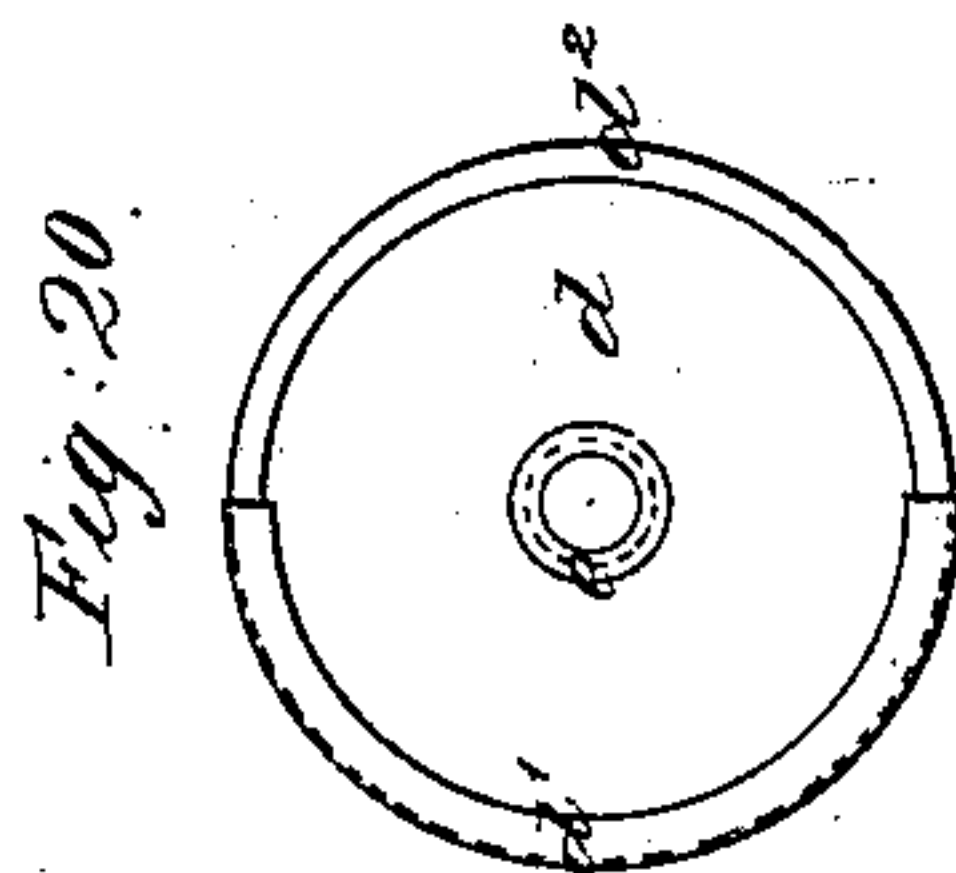
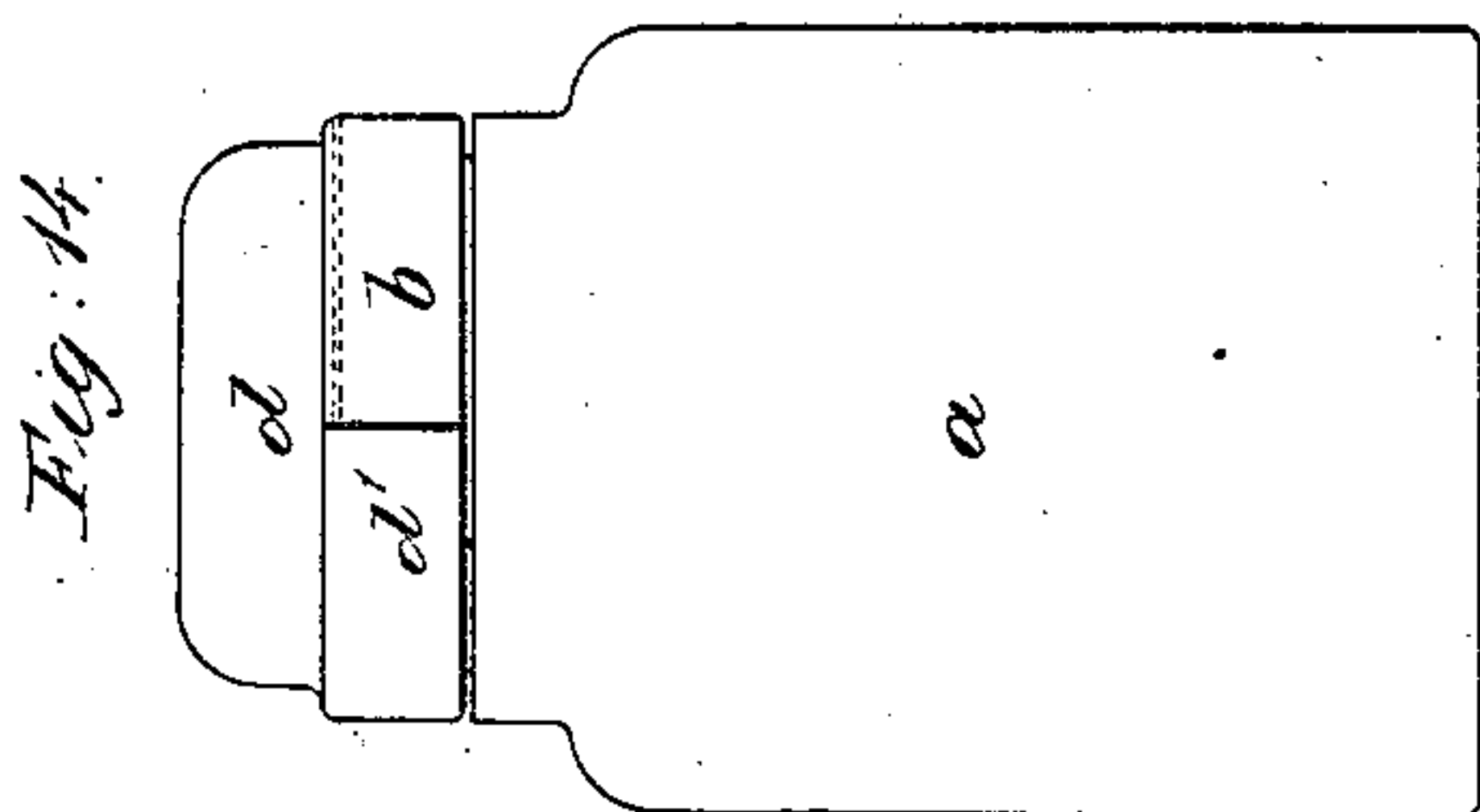
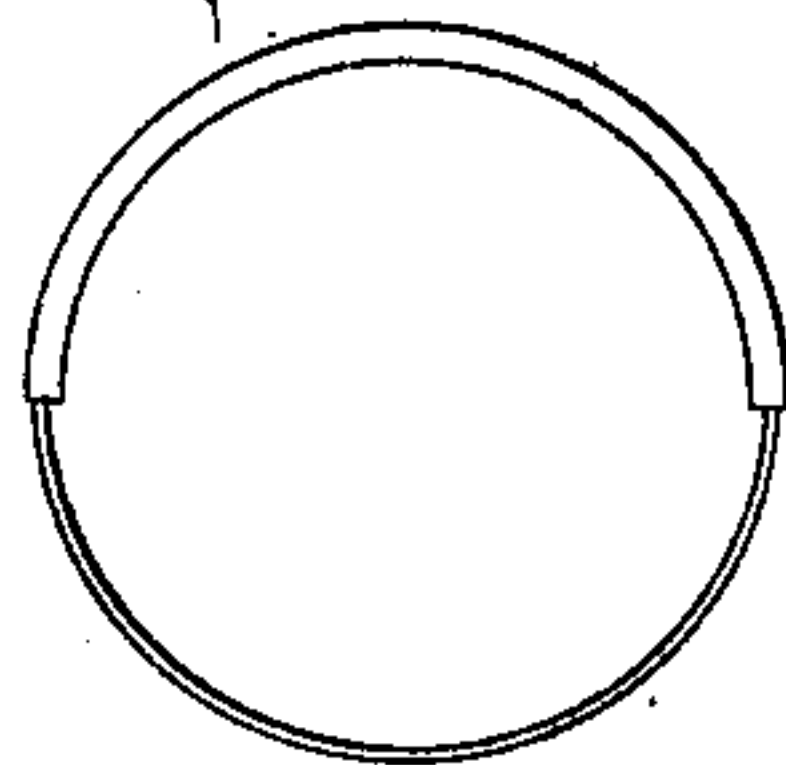
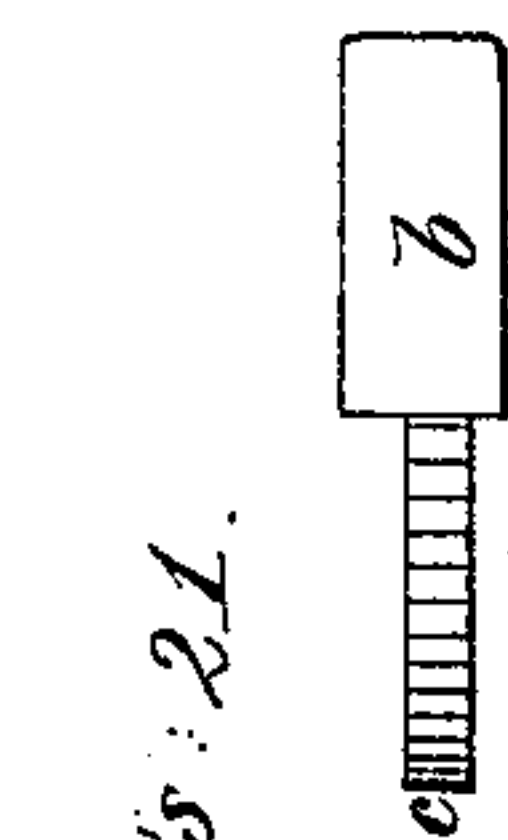
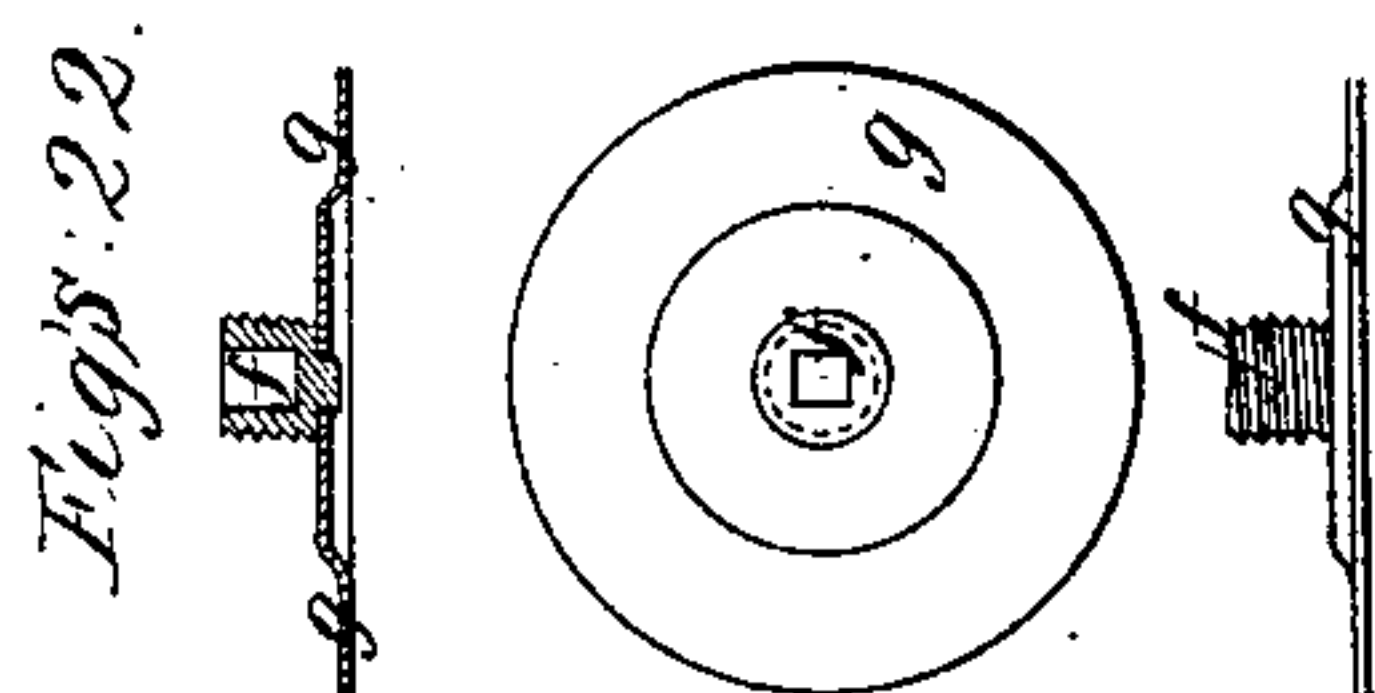
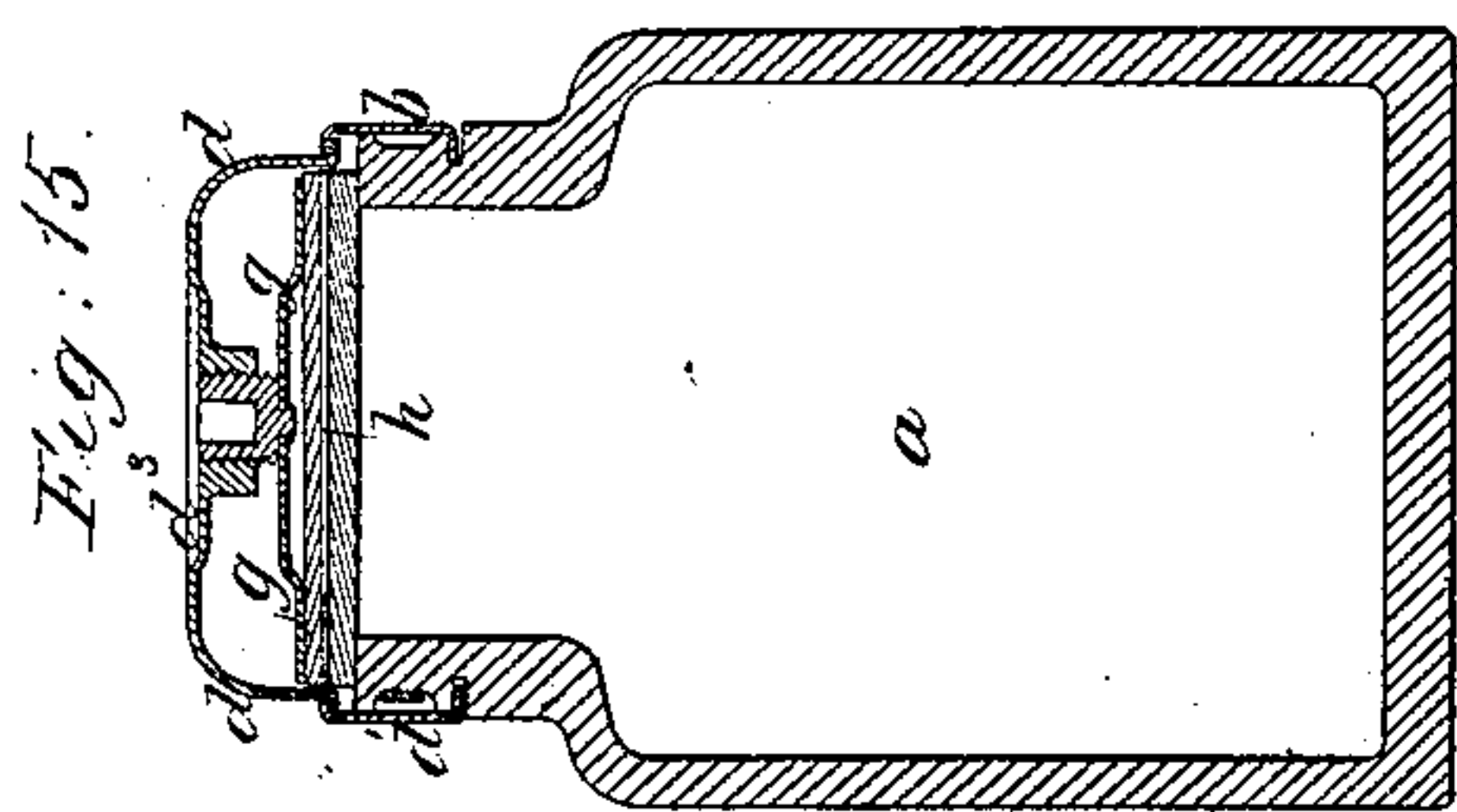
N. Thompson

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Storner Lock,

N^o 40,293.

Patented Oct. 13, 1863.



Witnesses;
Geo. Pitt
Jas. Marsh

Inventor;
N. Thompson

UNITED STATES PATENT OFFICE.

NATHAN THOMPSON, OF ABBEY GARDENS, ST. JOHN'S WOOD, COUNTY OF MIDDLESEX, ENGLAND.

IMPROVEMENT IN CLOSING BOTTLES, &c.

Specification forming part of Letters Patent No. 40,293, dated October 13, 1863.

To all whom it may concern:

Be it known that I, NATHAN THOMPSON, of 15 Abbey Gardens, St. John's Wood, in the county of Middlesex, England, a citizen of the United States of America, have invented or discovered new and useful Improvements in Apparatus for Stopping Bottles, Jars, and other Vessels; and I, the said NATHAN THOMPSON, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

This invention has for its object improvements in apparatus for stopping bottles, jars, and other vessels. For this purpose I employ a plate or disk of metal or other rigid material, which by a screw is forced down onto the top of the neck of the bottle, jar, or vessel, a disk of some suitable compressible material being, however, interposed between the two surfaces. The neck of the vessel is made by preference cylindrical exteriorly for a short distance down, and in this portion of the neck a groove it made all round. To the neck thus formed a piece of sheet metal is applied, so as to extend half round the neck, and this strip of metal has its upper and lower edges turned inward so as to form flanges. The lower flange of the strip of metal enters the groove in the neck of the bottle, while the upper flange comes just above the top of the neck. This flanged strip of metal is secured to the vessel by another narrower strip of metal soldered or attached to it at the two ends, so as to form a ring encircling the neck, and this ring is lodged in another groove in the neck of the vessel and prevented turning on the neck by teeth or transverse grooves being formed therein, into which portions of the ring are caused to enter, the ring being suitably indented for the purpose. This I do by means of a pair of nippers, the jaws of which are suitably formed to embrace the neck of the vessel and have corresponding teeth within them. The instrument may also be formed so as to produce at the same time the lower flange on the strip. The flanged strip of metal may, however, be secured to the neck of the vessel by means of binding-wires attached to the strip of metal

and twisted together; or it may be otherwise secured. The plate or disk which is used for closing the vessel, and the screw which actuates it, are carried by a metal cap, which, when in its place, covers the mouth of the vessel. This cap on one side (or for half of its circumference) is deeper than on the other side or half of its circumference, and this portion at its lower edge has a flange projecting inward to enter the groove in the neck of the vessel. On its other side, or for the other half of its circumference, the cap does not descend so low, so that when in place it terminates at the top of the neck of the vessel, and it has a flange or horizontal rim projecting outward from it, which, when the cap is in its place, enters under the flange, which, as before mentioned, projects inward from the strip of metal secured to the neck of the vessel. In the center of the cap, at the top, there is a hole, and beneath it a screw-nut is soldered or otherwise fixed to the cap. This nut receives the screw, which, as before mentioned, is employed to force down the plate or disk which closes the vessel, and the said plate or disk is riveted securely to the end of the screw, but in such a manner that the screw can turn freely independently of the plate or disk. For this purpose there is a hole formed in the plate or disk, through which a stud or pin formed at the bottom of the screw passes, and is clinched on the other side of the plate or disk. The hole may, if desired, be closed air-tight by soldering over it a small piece of thin metal. This, however, is not essential, as the packing material is alone sufficient to insure the perfect closing of the vessel. The cap, with the parts in connection therewith, is slid sidewise into its place, so that the flanges on its lower edge enter, the one into the groove in the neck of the vessel, and the other under the flange on the strip of metal attached to the neck. Then by turning the screw at the top of the cap it can be caused to descend through its nut, so as to press the disk or plate at its lower end down toward the top of the neck of the vessel. The compressible material interposed between the disk or plate and the top of the neck of the vessel I prefer to in a thin slice of cork cemented to a disk of pasteboard, the cork

being first saturated with melted wax, so as to completely close its pores.

Figure 1 is a side view of an earthenware bottle fitted with stopping apparatus constructed according to my invention. Fig. 2 is a plan, and Fig. 3 a vertical section, of the same. Fig. 4 is a side view of the bottle, with the parts which remain attached thereto, but with the cap and parts connected therewith removed. Fig. 5 is a plan of the same. Fig. 6 is a side view of the upper end of the bottle. Fig. 7 is a side view of the cap. Fig. 8 is a vertical section of the parts shown at Fig. 4, and Fig. 9 a vertical section of the parts shown at Fig. 7.

a is the bottle. Its neck is made cylindrical and with a groove in it at *a'*. *b* is a strip of metal applied to the neck of the bottle and extending one-half round it. It has flanges at its upper and lower edges. The lower flange enters the groove *a'* in the neck, and the upper stands just above the top of the same. *c* is another strip of metal serving to secure the strip *b* in its place. The strips *b* and *c* are shown separately at Fig. 10. The strip *c* at its ends is soldered to the extremities of the strip *b*. There are several means by which the parts *b* and *c* may be attached to the bottle. One of the most convenient is in the first instance to make the strip *c* of such a length that the parts *b* and *c* may together be dropped over the neck into their places, and then, by means of a pair of pliers, the piece which is in excess in length in the strip *c* is nipped up and doubled, as is shown by dotted lines in the plan and side views, Fig. 10. The parts are then prevented turning on the neck of the bottle by denting the band *c* at intervals into the flutings, recesses, or teeth which are formed around the neck of the bottle at *a''*. The bottle need not be necessarily formed with the fluted or toothed ring at *a''*. In place thereof a single notch or recess may be made in the exterior of the neck of the bottle, which is readily done by means of suitably-formed nippers, and the portion of the strip *c* which is bent over being then lodged in this recess prevents the parts turning; or in place of this arrangement the two strips *b* and *c* may be soldered together when in their places, and the whole made tight and prevented from turning by indenting the strip *c* as before; or the parts *b* and *c* may be placed on the neck of the bottle in the position required, and then, as before mentioned, by means of a pair of nippers with suitably-formed jaws, the lower flange of the strip *b* may be produced by bending inward the lower edge of the strip, and at the same time the strip *c* may be indented so as to secure the parts and prevent them turning; or the strip *c* may be secured by binding-wires. *d* is the metal cap, which, when in its place, covers the mouth of the bottle. This cap is made deeper on one side, at *d'*, for half its circumference than it is on the other side or half of its circumference. The part *d'* of the cap is not by preference

made in the same piece of metal as the part *d* but as a separate piece exactly similar to the strip *b*, and it is soldered to a horizontal flange or rim, *d''*, at the bottom of the part *d*. It will be seen by the drawings that when the cap is in its place the lower flange of the part *d'* enters the groove *a'* in the neck of the bottle, and at the same time for the other half of the circumference of the cap, its horizontal flange or rim *d''* enters under the upper flange of the strip *b* on the bottle, and thus the cap becomes firmly held to resist an upward strain. At the center of the top of the cap is a hole, and immediately beneath it the screw-nut *e* is attached. It may be by solder, or (as is shown in Fig. 11, which represents a plan of the cap,) the screw-nut may have four studs, *e'*, upon it, projecting up through the top of the cap and riveted over on the outside.

f is a screw working within the nut *e*. It has riveted to its lower end the plate or disk *g*, which closes the mouth of the bottle. *h* is the packing of prepared cork and card-board, which is interposed between the plate or disk *g* and the neck of the bottle. The connection between the plate or disk *g* and the screw *f* is such that the screw can turn independently of the plate or disk, and by so turning it the plate or disk and packing can be forced down onto the neck of the bottle, so as to make a tight joint. When this is done it will be impossible to take off the cap without slacking the screw, as when the pressure comes upon it the packing will bulge down and enter to a greater or less extent into the mouth of the bottle.

The screw *f* and the disk *g* are shown separately at Fig. 12. The rivet-hole through the plate or disk *g* may be covered by soldering over it a piece of metal. This, however, I do not consider to be necessary, as the packing *h*, if of good quality, will make a perfect joint. I prefer that the plate or disk *g*, which closes the mouth of the vessel, should be stamped, so as to be hollow in the center at its under side, as is shown. This gives stiffness to the plate or disk, and also prevents the lower end of the screw coming in contact with the packing of card-board and cork. The cap *d* is also formed by stamping up a disk at its sides. It is made cylindrical, or nearly so, in order that the plate or disk and the packing material which it incloses may be able to move up and down freely for a short distance within it. The top of the cap is made with a shallow recess, *d'''*, in it to receive sealing-wax to cover the top of the screw, so that a seal may be applied in such a way that the vessel cannot be opened without destroying the seal. The screw *f* is made with a recess at its upper end to receive a key. The recess is conveniently made square and nearly as deep as the screw is long. I prefer to make this screw by stamping or pressing a disk of soft iron in suitably-formed tools. The edges of the disk are by these tools turned up and contracted

until a cylinder is formed to receive the screw-thread. The tools at the same time form the square recess in the center of the piece.

The key I employ is shown at Fig. 13. It has at one end a solid square, *i*, to fit into the recess in the screw, and at the other it has a point, *j*, suitable for removing the sealing-wax from the recess.

Apparatus for stopping jars I arrange precisely in the manner described as respects bottles, the size and proportion of the parts being, however, somewhat modified.

Fig. 14 is a side view of a jar closed by means of the stopping apparatus. Fig. 15 is a vertical section of the same. Fig. 16 is a side view of the jar as it appears when open. Fig. 17 is a plan of the same. Fig. 18 is a side view of the stopping apparatus or cover of the jar. Fig. 19 is a plan of the same. Fig. 20 is an under side view of the cap and screw-nut. Fig. 21 shows separately the rings *b* and *c*, and Fig. 22 shows separately the cover *g* and screw *f*.

The letters on the several figures correspond with the description hereinbefore given.

In these arrangements it will be seen that when the cap is in its place it has a bearing all round the circumference, so that the strain upon it is continuous and not local. It is also so secured that the cap cannot be turned round. These are important features in the arrangements.

What I claim is—

The combination of a cap carrying a stopper, and a screw acting thereon with the neck or mouth of a bottle or other vessel by means of a flanged strip of metal connected with the bottle or vessel, and under which the edge of the cap enters, and also by means of a flange on the cap which enters a groove or under a projecting ring in the neck or around the mouth of the bottle or vessel, the whole contrivance being substantially such as is described.

NATHAN THOMPSON.

Witnesses:

THOS. BROWN,

JOHN DEAN,

Both of No. 17 Gracechurch Street, London.