

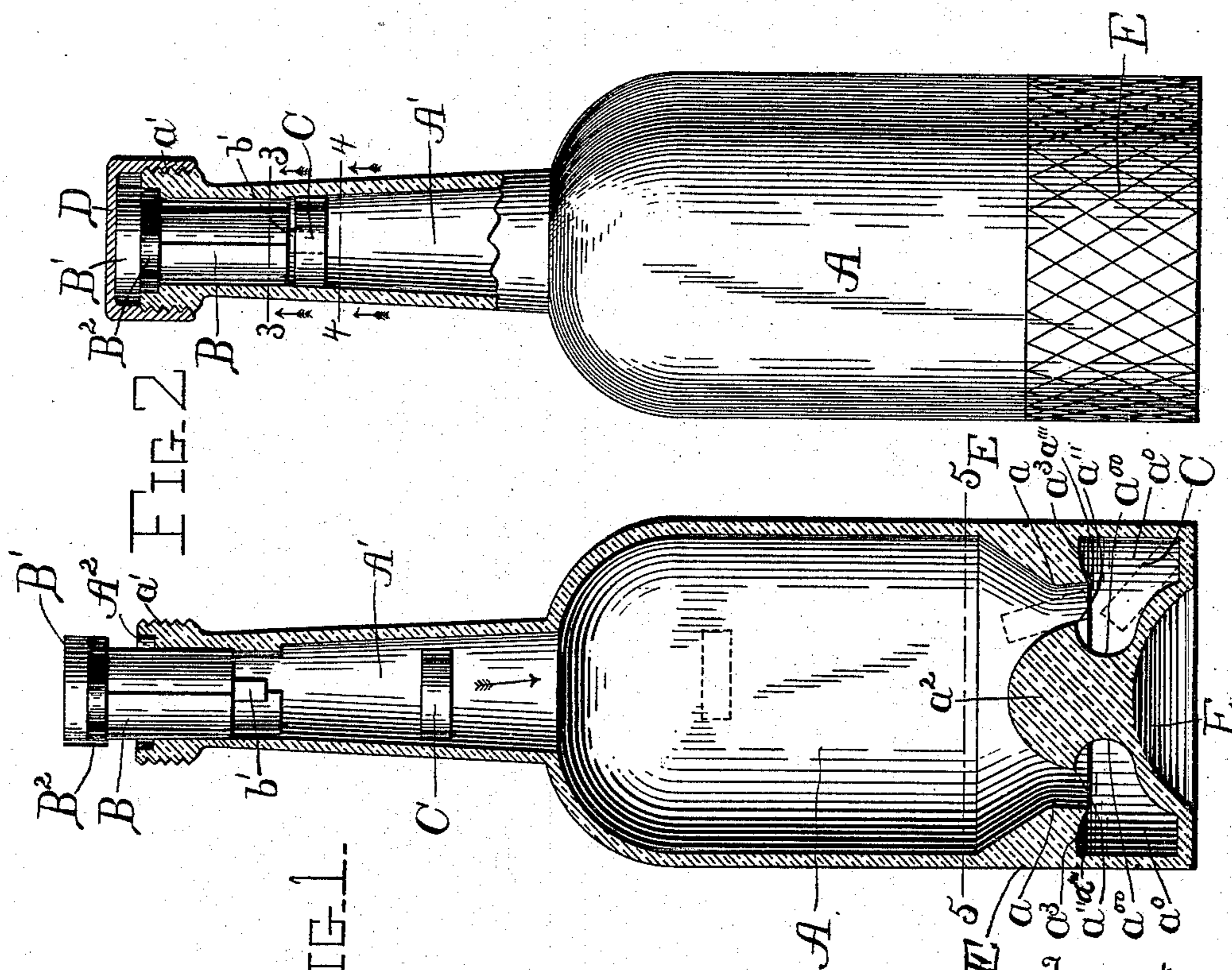
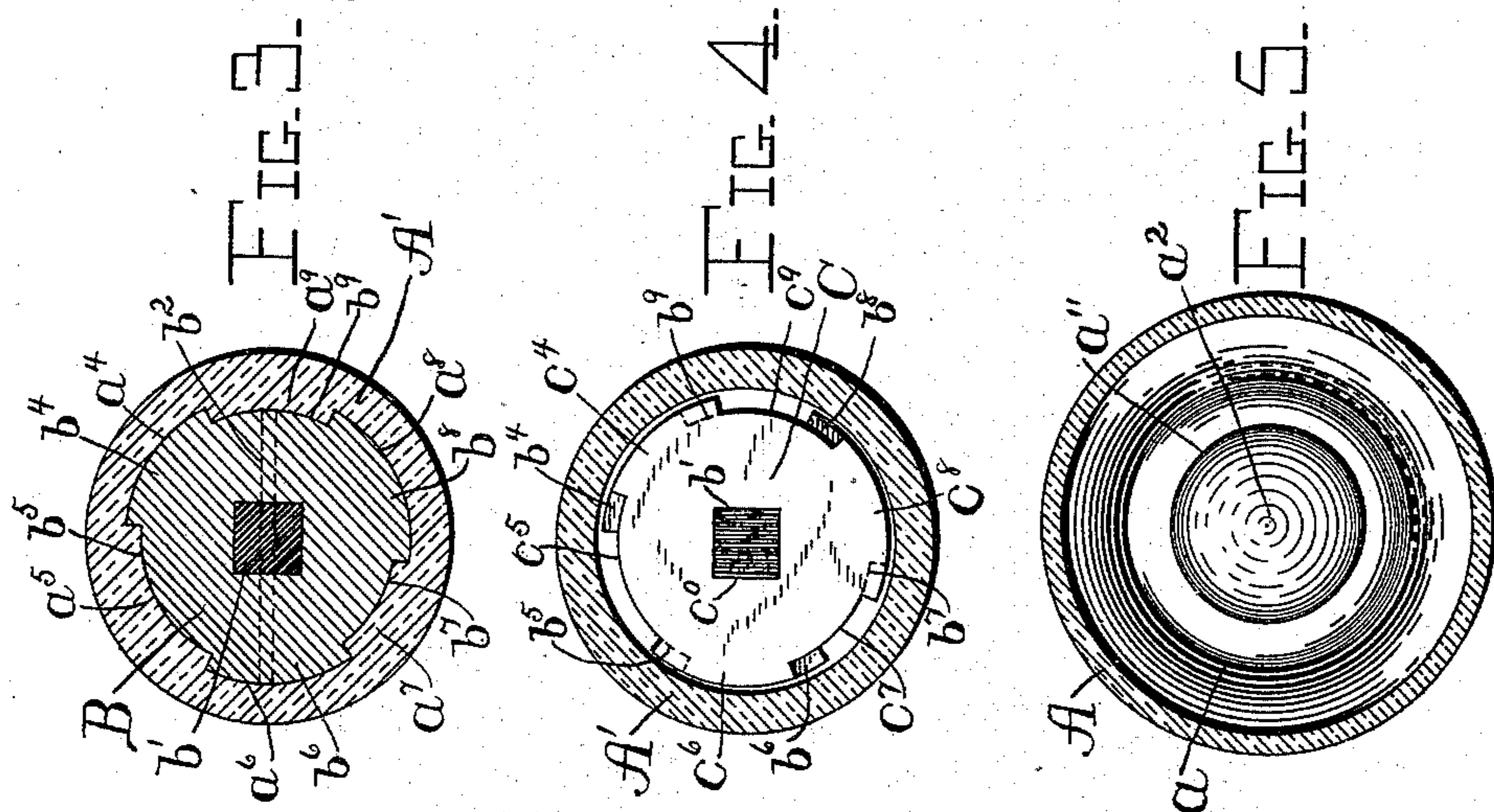
(No Model.)

2 Sheets—Sheet 1.

LE ROY C. WEBSTER.
BOTTLE OR JUG.

No. 573,373.

Patented Dec. 15, 1896.



Witnesses
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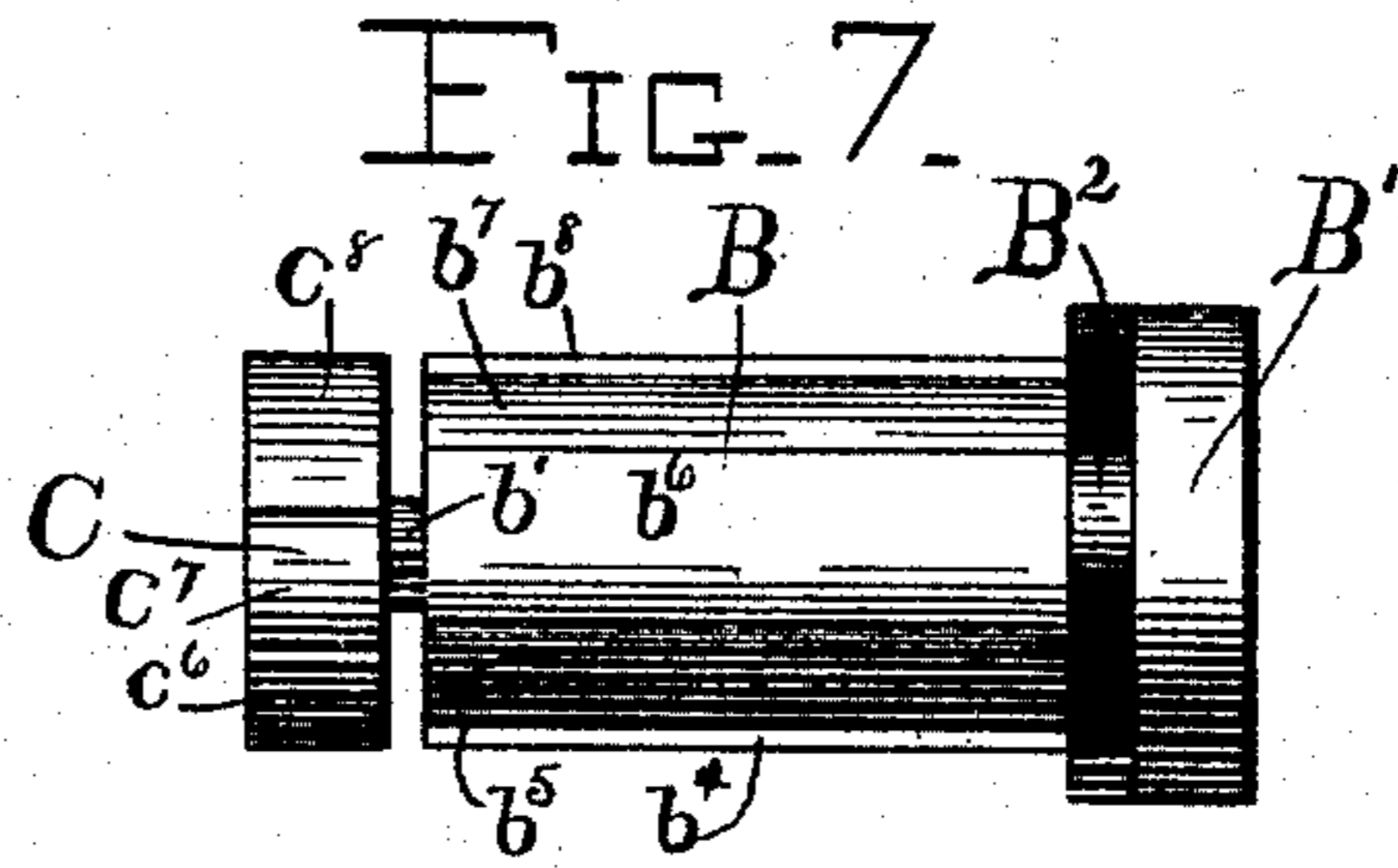
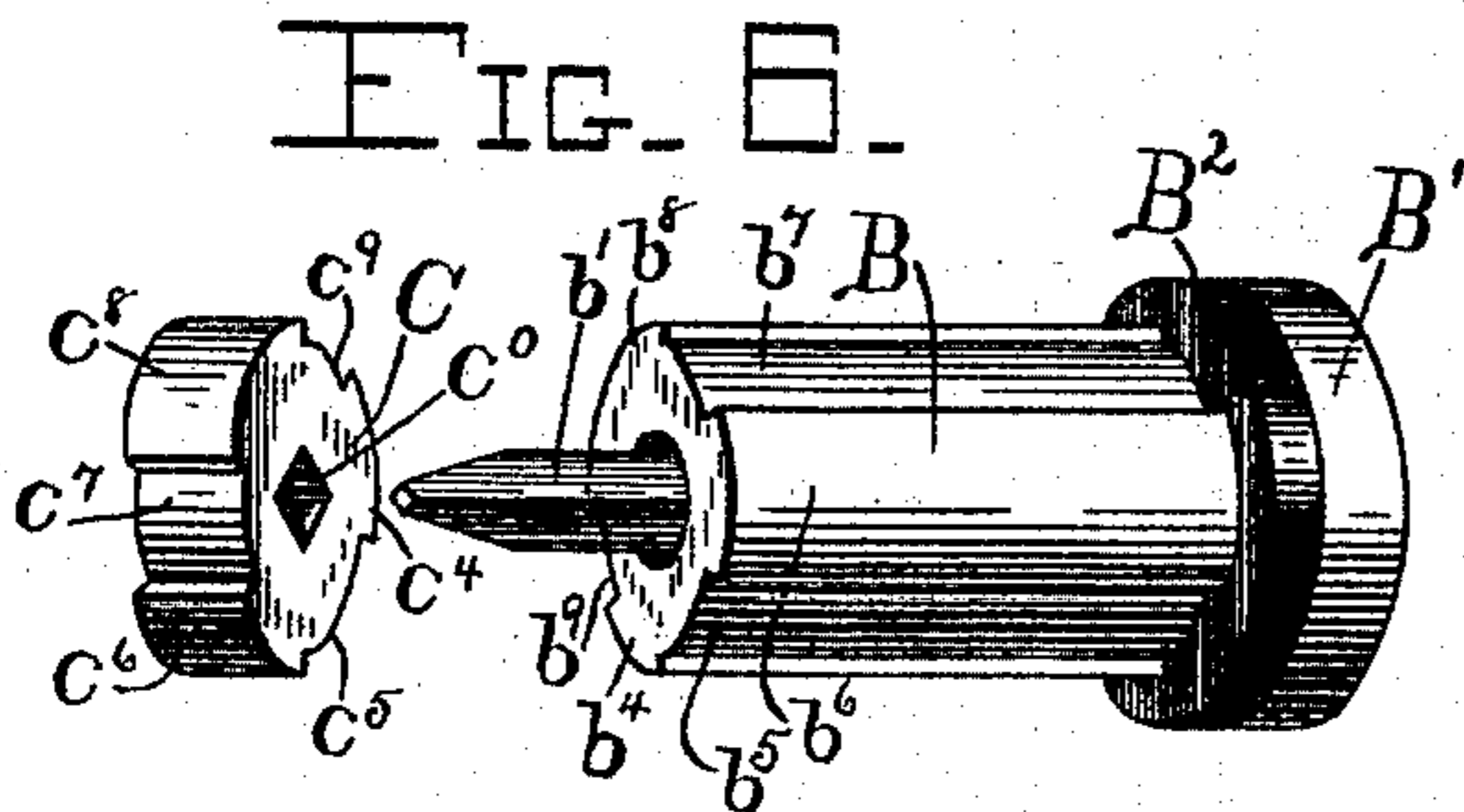


FIG. 5.

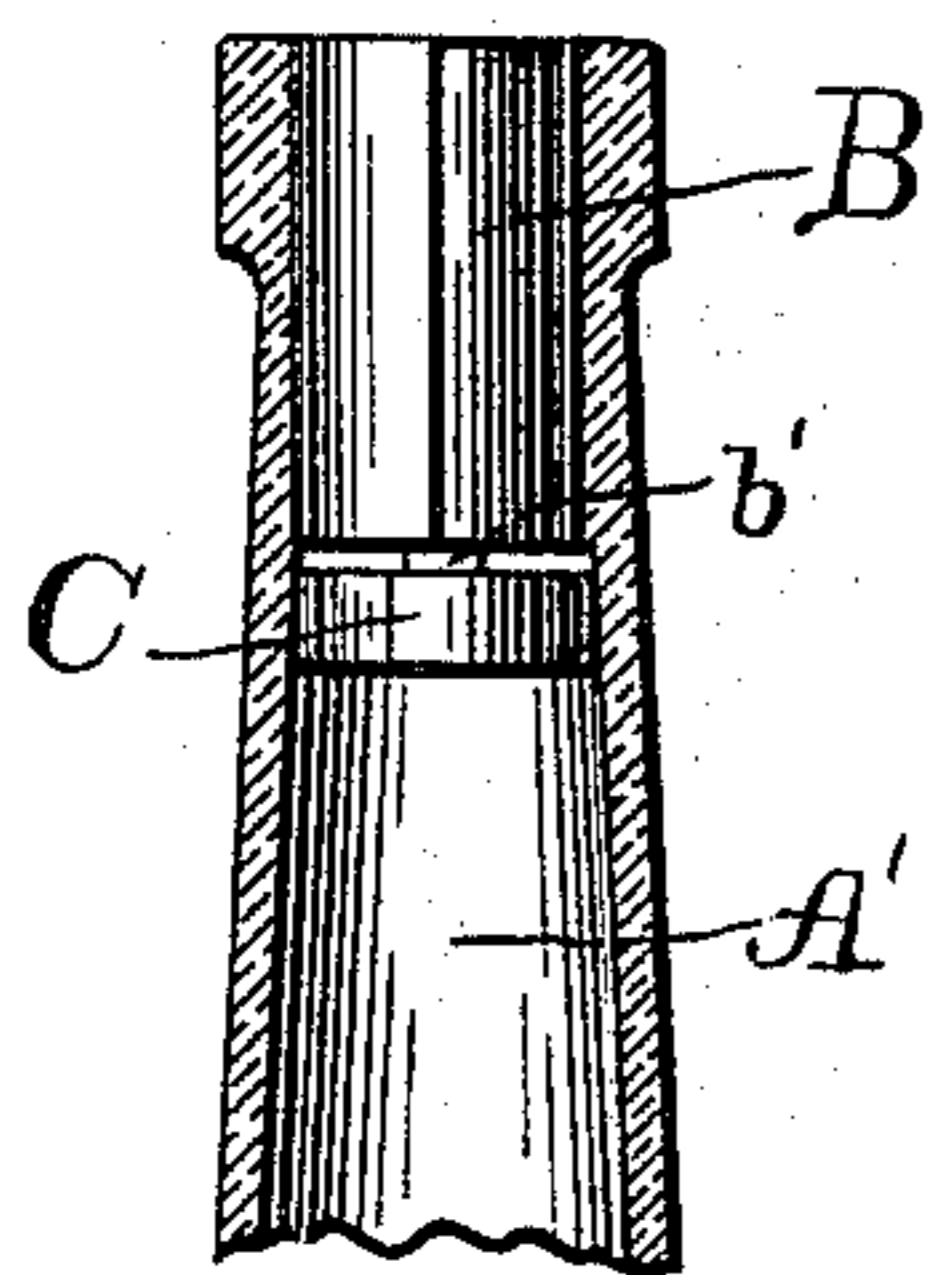


FIG. 8.

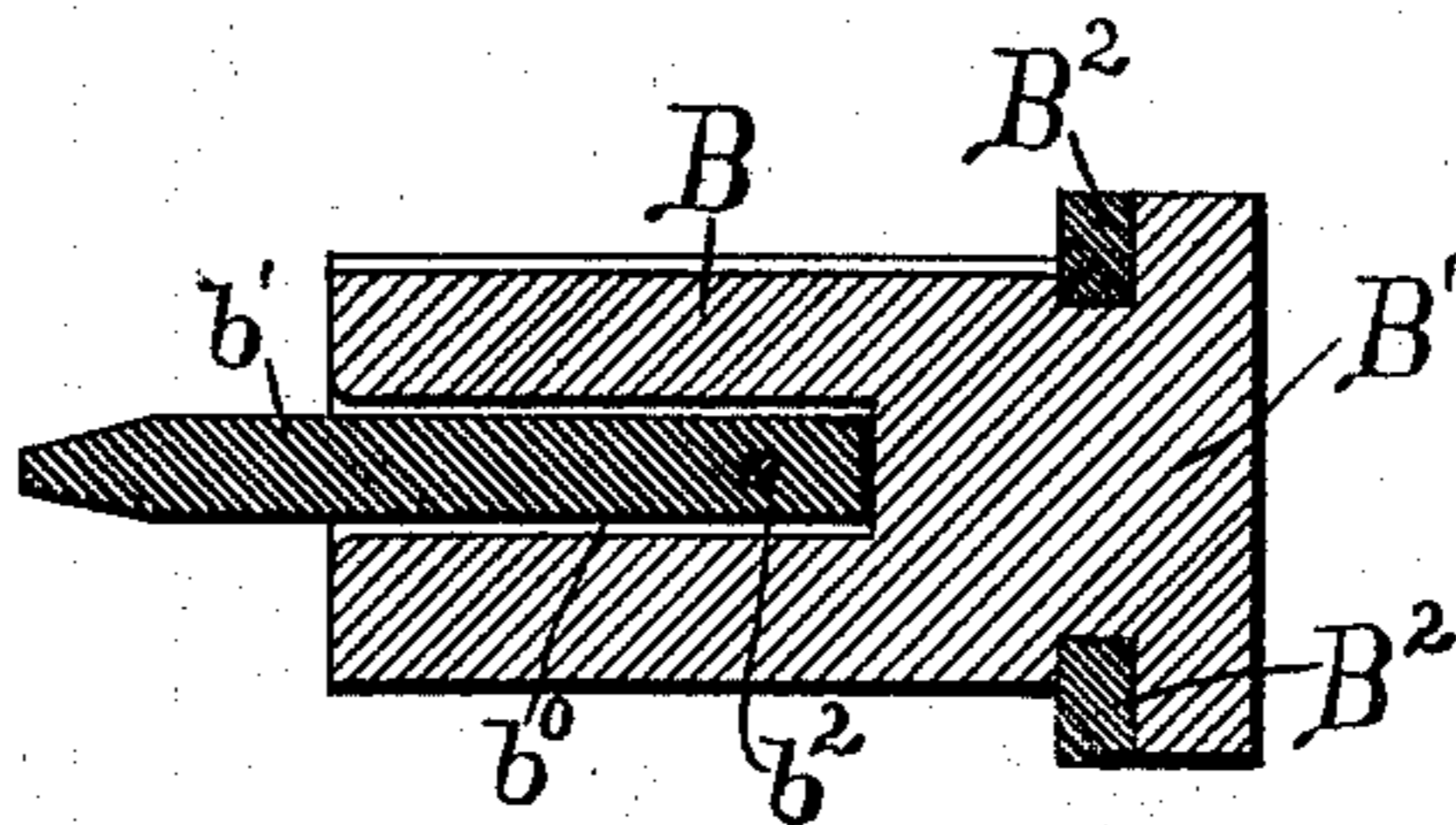


FIG. 10.

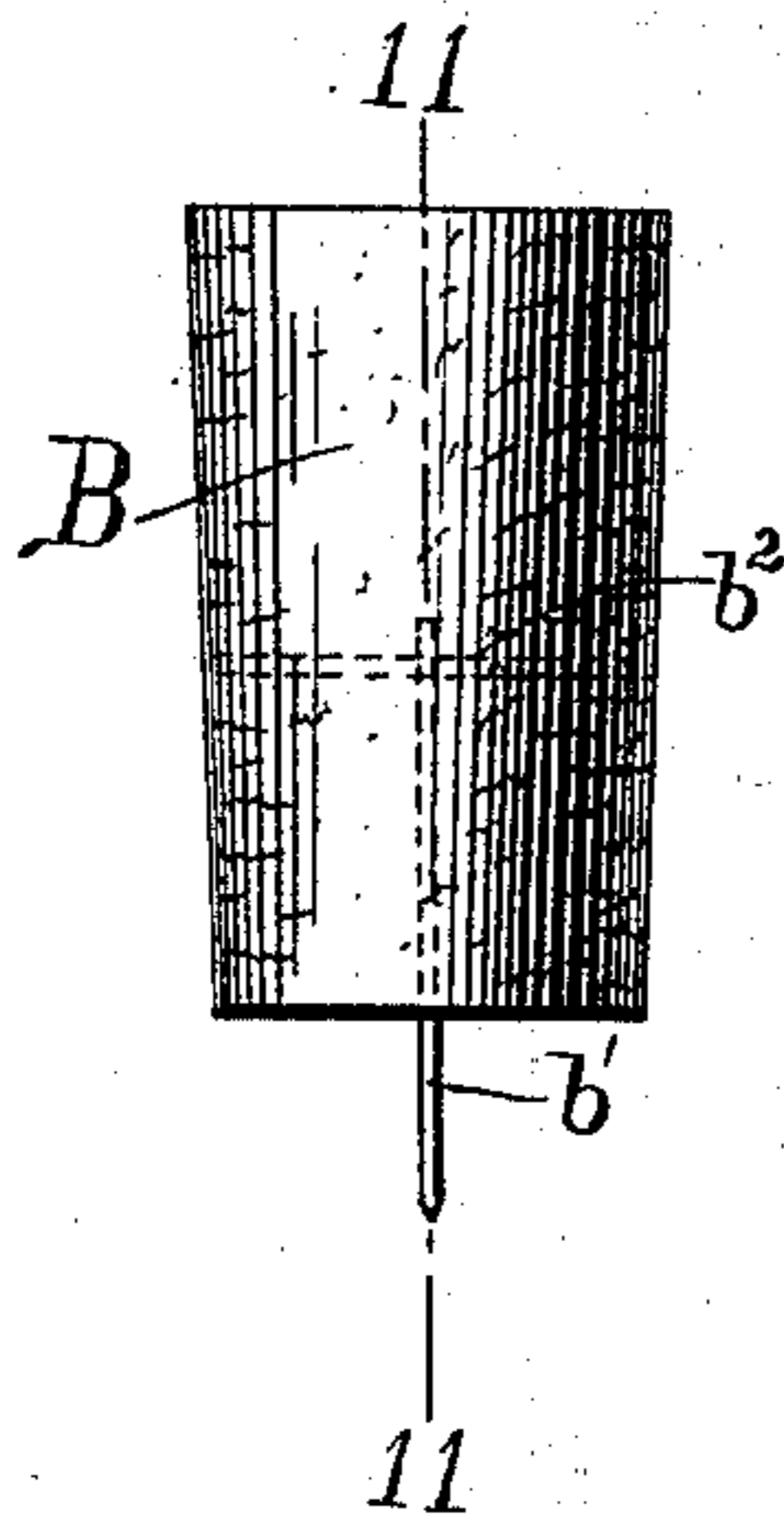
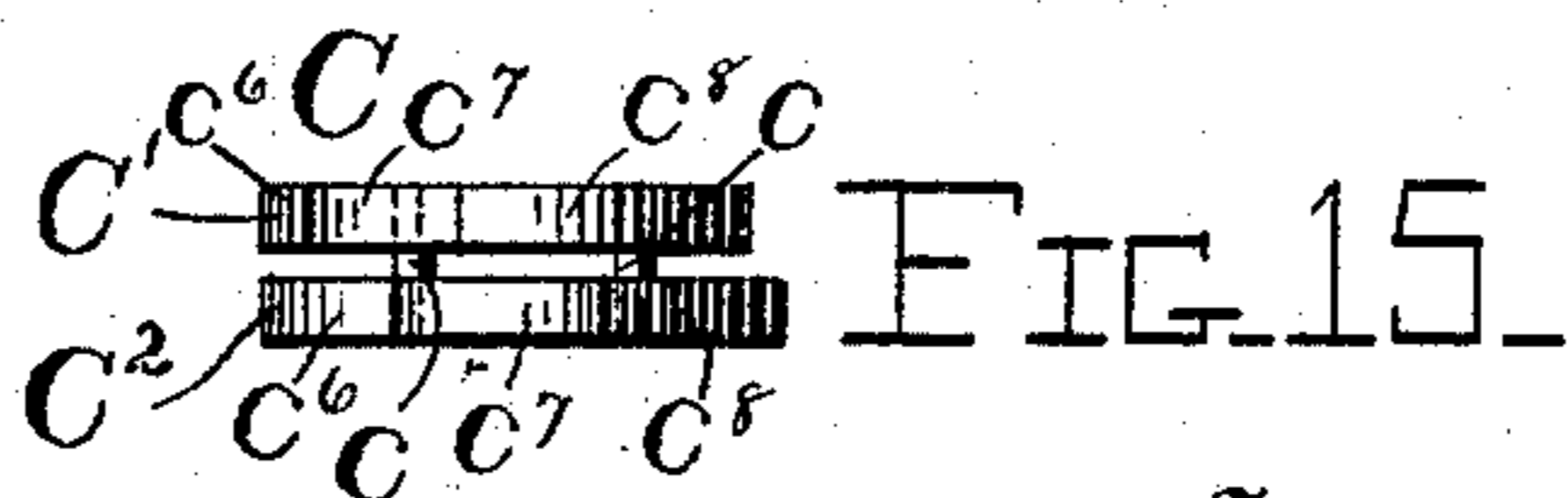
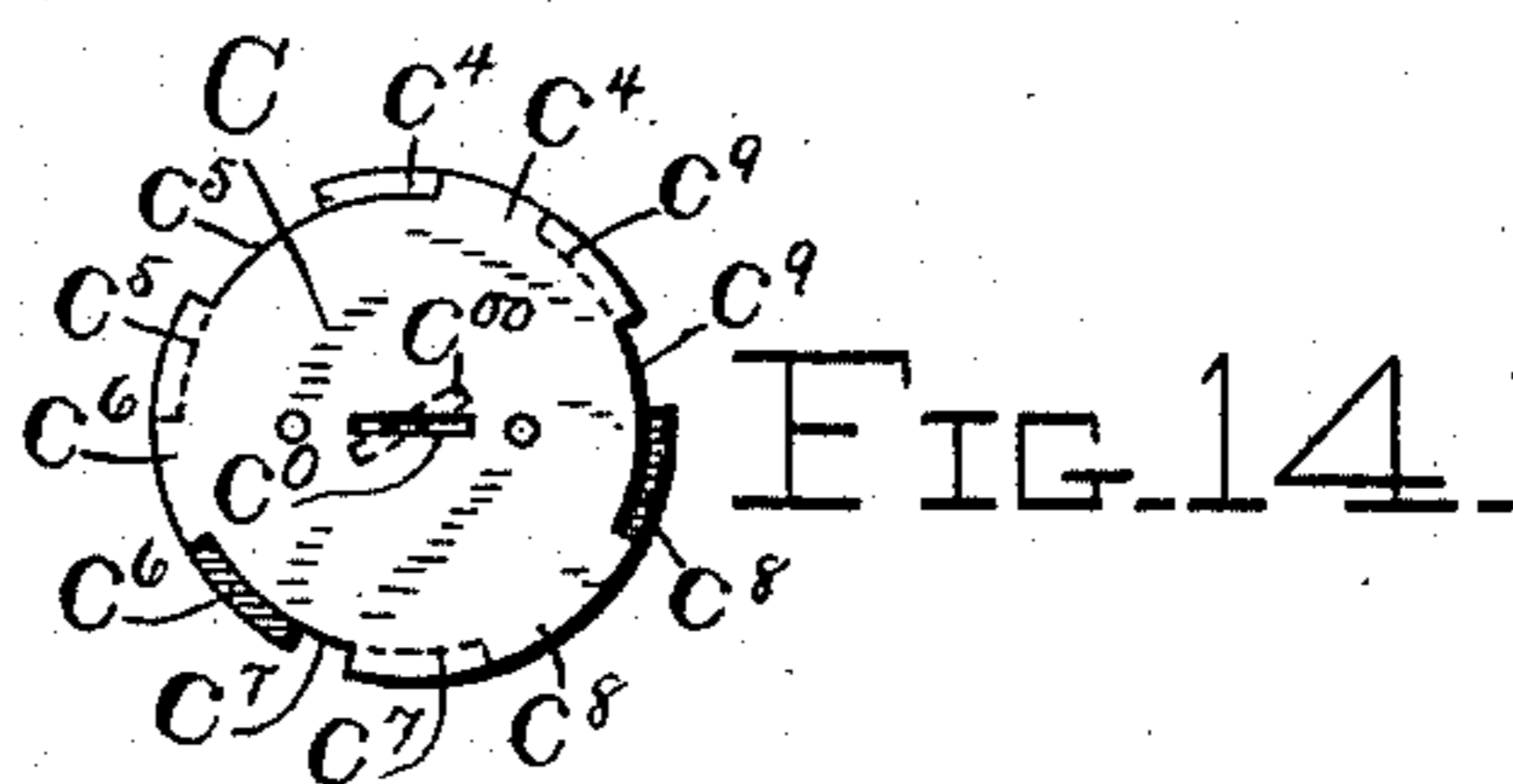
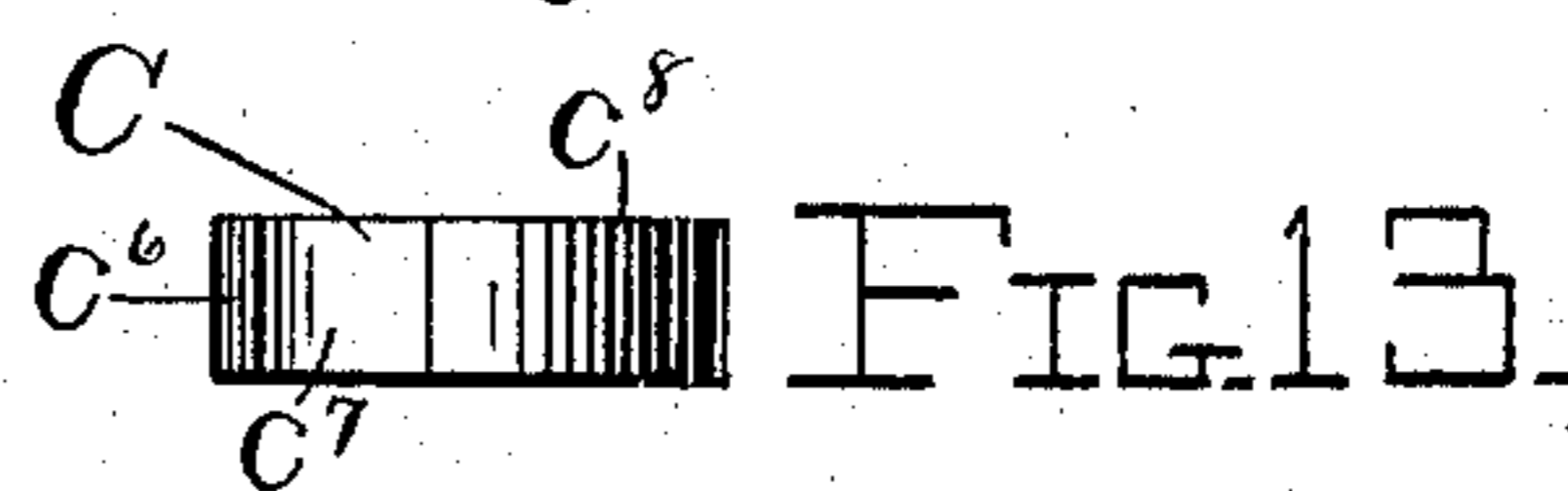
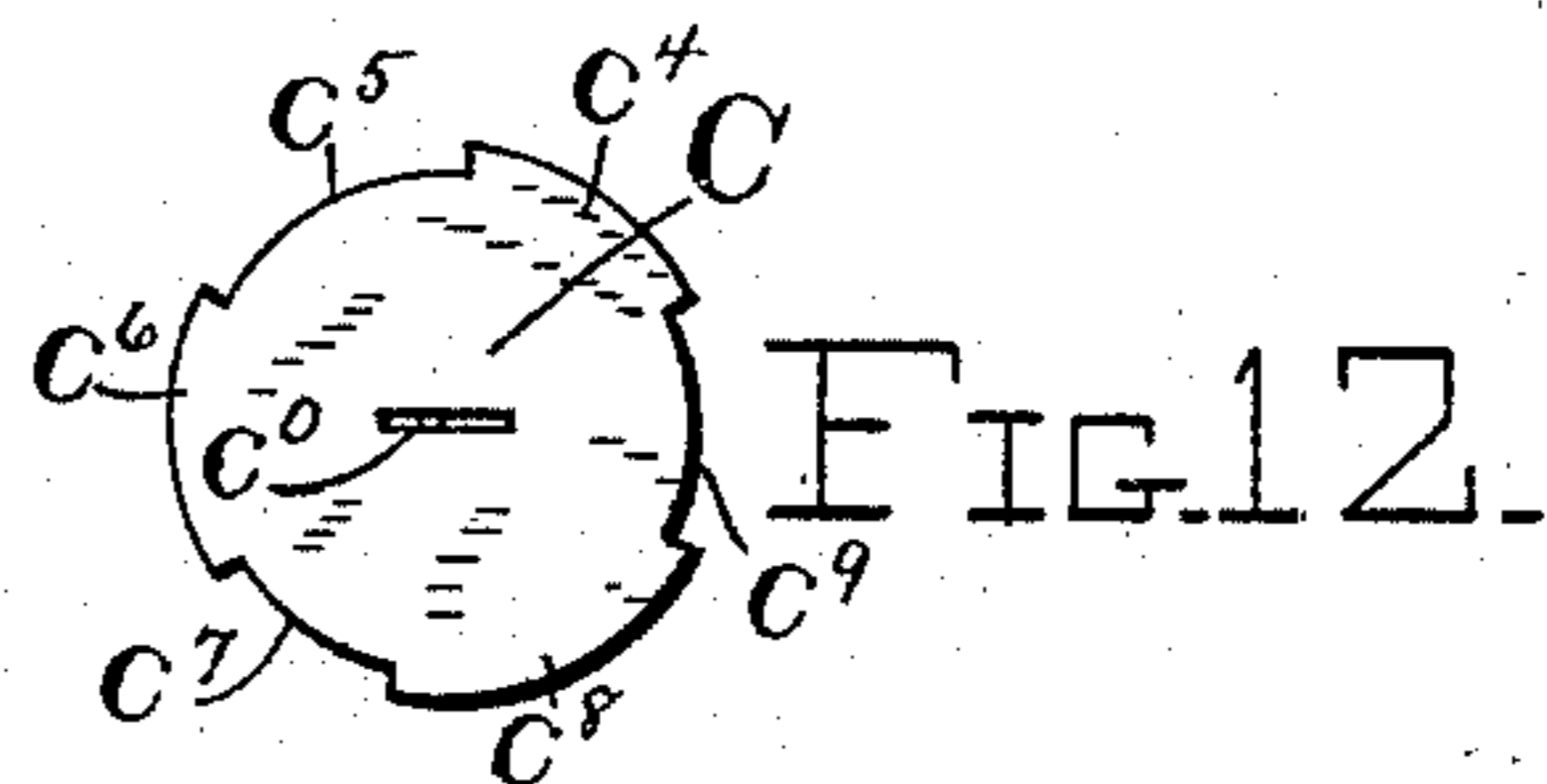
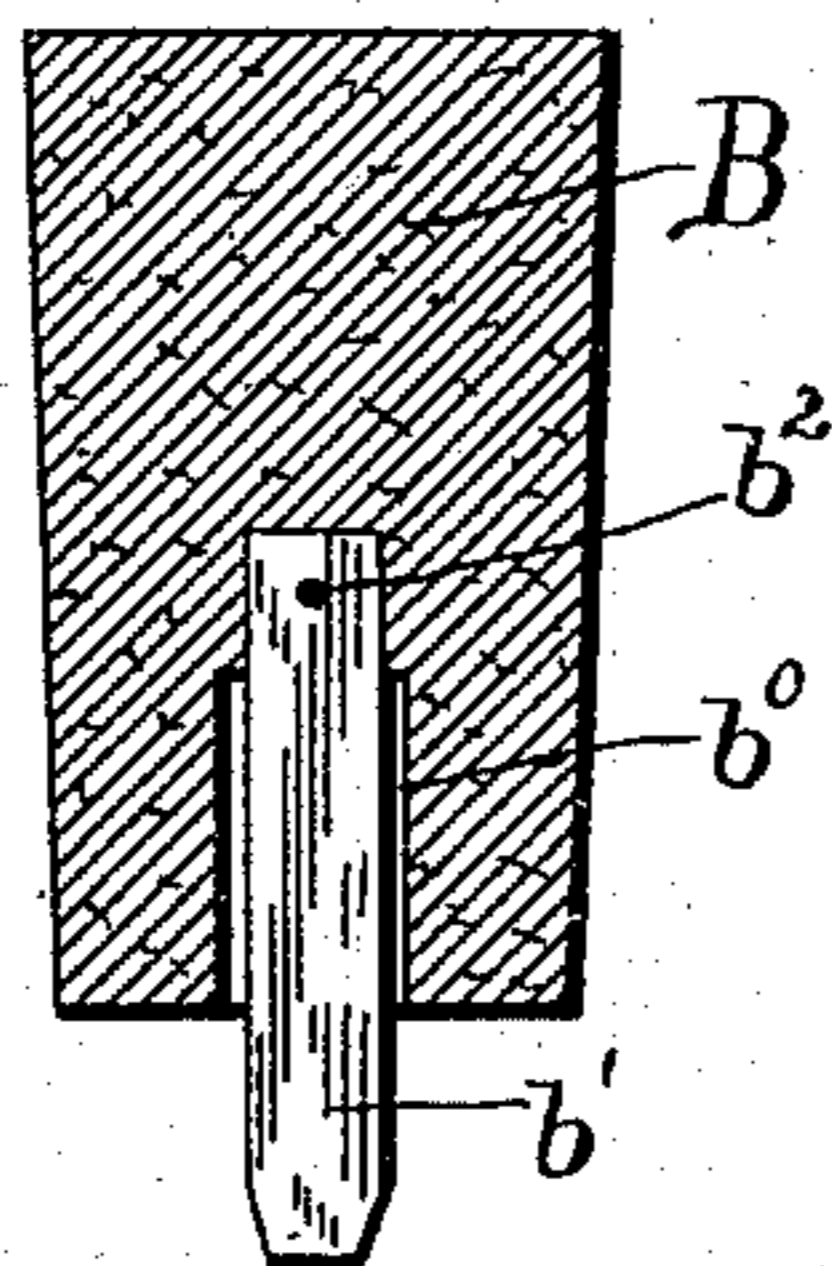


FIG. 11.



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UNITED STATES PATENT OFFICE.

LE ROY C. WEBSTER, OF THE UNITED STATES NAVY.

BOTTLE OR JUG.

SPECIFICATION forming part of Letters Patent No. 573,373, dated December 15, 1896.

Application filed April 20, 1896. Serial No. 588,326. (No model.)

To all whom it may concern:

Be it known that I, LE ROY C. WEBSTER, captain United States Marine Corps, a citizen of the United States, stationed at Sitka, Alaska Territory, have invented certain new and useful Improvements in Bottles or Jugs; and I do hereby 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.

My invention relates to improvements in bottles, jugs, and the like, and has for its object to provide a bottle, jug, or other glass or earthenware vessel with stoppering devices which will show at sight whether or not the said bottle or jug has been opened after first being closed, thus preventing fraud in the bottle or jug being refilled.

My invention consists in the novel devices hereinafter described and claimed.

Reference is had to the accompanying drawings, wherein similar parts are indicated by the same letters throughout the several views.

Figure 1 is a central vertical section through a bottle provided with my invention, showing the stopper as partially removed and the telltale-disk as detached therefrom and falling to the bottom of the bottle. Fig. 2 is a sectional view of the bottle, showing the stopper in the closed position before the disk has become detached. Fig. 3 is an enlarged section taken on the line 3 3 of Fig. 2 and looking in the direction of the arrow. Fig. 4 is an enlarged section taken on the line 4 4 in Fig. 2 and looking in the direction of the arrow. Fig. 5 is a section taken on the line 5 5 of Fig. 1, looking down. Fig. 6 is an enlarged perspective view of the form of stopper and disk shown in Figs. 1 and 2 ready for assembling, and Fig. 7 is a side elevation of the same connected together ready for insertion into the neck of the bottle. Fig. 8 is a longitudinal section through the stopper shown in Fig. 6. Fig. 9 is a central vertical section through the neck of a bottle provided with a modified form of stopper. Fig. 10 is an enlarged side elevation of the stopper shown in Fig. 9, and Fig. 11 is a section taken on the line 11 11 in Fig. 10. Fig. 12 is a plan view of a disk similar to that shown in Figs. 6 and 7, with a narrow slot therethrough for use

with the modified form of stopper shown in Figs. 10 and 11; and Fig. 13 is an elevation of the same. Fig. 14 is a plan view of another modified form of a disk composed of two sections, and Fig. 15 is a side elevation of the same.

Referring more particularly to Figs. 1 to 8, inclusive, A represents the body of the bottle, and A' the neck of the same. The mouth of the neck has an inner annular recess A² to receive a packing-ring on the stopper and is externally screw-threaded, as at a', to receive a cap.

An annular rib *a* is formed on the inside of the bottle near the bottom thereof. (See Fig. 1.) The upper side of this rib is made sloping, as shown, and the under side of the said rib is made concave, as shown at *a*³, with downwardly-extending shoulder *a*⁴. Protruding upward from the center of the bottom of the bottle is a rounded knob *a*², having an annular recess *a*⁰⁰ around said knob and an outwardly-projecting shoulder *a*¹. The shoulder *a*¹ on the knob *a*² should be a trifle higher than the shoulder *a*¹ on the annular rib *a*. Thus there will be formed in the bottom of the bottle an annular chamber *a*⁰, for the purpose hereinafter to be described.

The neck of the bottle is provided with a plurality of vertical ribs *a*⁵, *a*⁷, and *a*⁹, of unequal width, having corresponding vertical grooves *a*⁴, *a*⁶, and *a*⁸ between them, as shown in the sectional view, Fig. 3. These ribs and grooves extend from at or near the mouth of the bottle inward for a distance about equal to the length of the ordinary stopper.

B represents the stopper. This stopper is made with longitudinal ribs *b*⁴, *b*⁶, and *b*⁸ and longitudinal grooves *b*⁵, *b*⁷, and *b*⁹. The ribs and grooves on the stopper, as in the case of the ribs and grooves in the neck of the bottle, should be of varying widths, and the ribs and grooves on the stopper should be made to register with the ribs and grooves in the neck of the bottle when in but one certain position, so that the stopper only can be inserted into the neck of the bottle when in that position. The top of the stopper may be provided with the plain annular enlarged portion B' and have a packing-ring or washer of rubber or like elastic material.

b' is a piece of soft-rubber, one end of which fits into a recess in the inner end of the stopper and is held therein by a pin or plug b^2 . (Indicated by dotted lines in Fig. 3.) This piece of rubber protrudes for a short distance from the inner end of the stopper, and should preferably be reduced at its end to facilitate its insertion into the telltale-disk, hereinafter to be described.

C is a disk, which for the purposes of this description I will designate the "telltale-disk," inasmuch as the presence of the disk in the bottom of the bottle will indicate that the bottle has once been filled and emptied of its contents, and the object of this invention is to provide means for so inserting the disk that it will be held by the stopper until the bottle is opened, when the said telltale-disk will fall to the bottom of the bottle and remain, thus showing that the bottle has been emptied of its original contents. This disk is of the same cross-section as the stopper B, and has ribs c^4 , c^6 , and c^8 formed axially thereon, of the same width as the corresponding ribs b^4 , b^6 , and b^8 on the stopper, and has grooves c^5 , c^7 , and c^9 , of the same width as the corresponding grooves b^5 , b^7 , and b^9 on the said stopper. The disk C has a central opening c^0 , adapted to receive the end of the soft rubber piece b' , protruding from the inner end of the stopper B.

Before the stopper B is inserted into the neck of the bottle the disk C is connected thereto by inserting the end of the soft-rubber piece b' into the central opening c^0 in the disk. In doing this the disk should be so attached to the stopper that its ribs and grooves will be considerably out of line with the corresponding ribs and grooves on the stopper. The telltale-disk is first inserted into the neck of the bottle, its ribs, which are of differing widths, fitting into grooves of corresponding widths in the neck of the bottle. It will then be necessary to turn the stopper somewhat in order to bring the ribs thereon to the corresponding grooves in the neck of the bottle. This is readily done on account of the elasticity of the rubber piece b' which connects the disk with the stopper. The disk and stopper are then forced down into the neck of the bottle, as shown in Fig. 2. As soon as the disk passes the ends of the ribs in the neck of the bottle the tension on the rubber connecting-piece b' will cause the said disk to turn around to the position it occupied with relation to the stopper before being inserted into the neck of the bottle, thus bringing the ribs on the said disk out of line with the corresponding grooves in the neck of the bottle. The said disk will then remain suspended in the neck of the bottle until the stopper is withdrawn, when the ribs in the neck of the bottle will engage the ribs on the disk, and the disk will be held until the rubber piece b' is pulled out of its central opening c^0 , when the disk will fall of its own weight to the bottom of the bottle. When the telltale-disk has

fallen, the inclined face of the rib a in the bottle will guide the said disk down through the opening between the shoulder a'' on the knob and the shoulder a''' on this rib, and the disk will fall into the annular chamber a^0 in the bottom of the bottle. After the disk has fallen into this chamber it will be practically impossible to shake it out, as it will be held by the shoulders a'' and a''' . Should the bottle be refilled, the telltale-disk will indicate that the contents are not the original contents thereof.

The stopper shown in Figs. 1 to 8 is made preferably of wood and the disk preferably of solid glass, so that the disk will have sufficient weight to cause it to fall to the bottom through whatever liquid is in the bottle.

In Figs. 9, 10, and 11 I have shown a modified form of stopper which is an ordinary cork stopper having a recess b^0 in its smaller end, into which is fitted a strip b' of hard rubber or similar material, and held therein by a pin b^2 . This form of stopper is intended for use with a telltale-disk similar to the disk shown in Figs. 1 to 7, except that the opening c^0 therethrough is in the form of a slot to receive the flat end of the strip b' . A disk of this sort is shown in Figs. 12 and 13. In inserting this form of stopper the disk is first inserted as before, and then the stopper is turned somewhat to create a tension on the flexible strip b' , when the stopper is then forced into the neck of the bottle until the telltale-disk passes the inner ends of the ribs therein, as before, when the tension on the flexible strip b' will cause the disk to turn as before and become locked.

The diameter of the cork stopper should be great enough so that after the said cork stopper has been inserted into the ribbed and grooved portion of the neck of the bottle the sides of the said stopper will fit snugly into the grooves therein, thus rendering it impracticable to turn the stopper, and yet not interfering at all with its removal in a line parallel to the direction of the ribs and grooves in the bottle-neck.

In Figs. 14 and 15 I have shown another modified form of disk. This disk is composed of two similar sections C' and C^2 , held together, as shown in the drawings, by means of two plugs or strips of soft rubber c , the corresponding ribs and grooves on the two sections of the disk and the central openings c^0 and c^{00} being normally held out of alignment with relation to each other, as shown in Fig. 14. When this form of disk is used, the two sections must first be turned to coincide, and then the strip b' on the stopper is inserted. The two sections being thus brought into coincidence and attached to the stopper, the said disk and stopper are inserted as before. When the connecting-strip b' is withdrawn, as will occur in removing the stopper from the bottle, the two sections of the disk will turn slightly relative to each other, and the said disk will thus be more securely

locked. This latter form of telltale-disk may be used with a bottle having or not having the chamber in its bottom for receiving and holding the same after being detached, as the said disk will be doubly locked, as will be obvious.

Instead of the rubber strips or plugs used for connecting the two sections of this double disk I may, if preferred, use metal springs or any other material suitable for the purpose.

I also do not wish to limit myself to the use of rubber plugs or strips for connecting the disk to the stopper, as I may use besides rubber either wood or metal in any form suitable for the purpose.

I also do not wish to limit myself to the combinations herein shown, as any one of the several forms of disks might be used with any form of stopper, the principle involved in every case being the same.

In order to prevent a hole being bored into the bottom or side of the bottle for the purpose of removing the disk, I may have a wire web or mesh embedded into the outside of the bottle by placing a piece of such web or mesh in the form of a cylinder closed at one end in the bottom of the mold in which the bottle is made, so that when the bottle is blown or pressed the wire will unite firmly with the body of the bottle, as shown at E in Figs. 1 and 2.

It will be seen that many modifications of my herein-described invention might be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves; of a stopper adapted to fit into said ribbed and grooved portion, and a disk detachably connected to said stopper, and adapted to be inserted through said ribbed and grooved portion under tension with said stopper, and to become detached from said stopper and fall into the bottle when said stopper is withdrawn, substantially as described.

2. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves; of a stopper adapted to fit into said ribbed and grooved portion, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper, and adapted to be inserted through said ribbed and grooved portion under tension with said stopper, and to become detached from said stopper and fall into the bottle when said stopper is withdrawn, substantially as described.

3. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves; of a stopper adapted to fit into said ribbed and grooved portion, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the

neck of the bottle, detachably connected to said stopper by a flexible connection, and adapted to be inserted under tension through said ribbed and grooved portion with said stopper, and to become locked against withdrawal with said stopper as soon as it passes the inner ends of said ribs and grooves, substantially as described.

4. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves, and having an annular chamber with a reduced opening leading thereto in the bottom thereof; of a stopper adapted to fit into said ribbed and grooved portion in the neck, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper, and adapted to be inserted with said stopper through said ribbed and grooved portion, and to become detached from said stopper and fall into said annular chamber in the bottom of said bottle when the stopper is withdrawn, substantially as described.

5. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves, and having an annular chamber with a reduced opening leading thereto in its bottom; of a stopper adapted to fit into said ribbed and grooved portion in the neck, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper by means of a flexible connection, and adapted to be inserted under tension through said ribbed and grooved portion with said stopper, and to become detached from said stopper when the said stopper is withdrawn, and fall into said annular chamber in the bottom of the bottle, substantially as described.

6. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs of varying width; of a stopper adapted to fit into said ribbed portion, and a disk provided with axial grooves corresponding with the ribs in said bottle-neck, the said disk adapted to be connected to said stopper and inserted under a torsional strain relative thereto through said ribbed portion of the neck of the bottle and to be relieved from said torsional strain and return to its normal position relative to said stopper upon passing the ends of said ribs in the neck of the bottle, substantially as described.

7. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs therein of varying width; of a stopper provided with axial grooves corresponding to the ribs in the said bottle-neck, and a disk provided with axial grooves similar to those on the stopper, and a flexible connection between said stopper and disk, whereby the two may be inserted under a torsional strain relative to each other through the said ribbed portion of the bottle-neck, and be relieved of the said torsional strain as soon as

the said disk passes the ends of said ribs, substantially as described.

8. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs therein of varying width; of a stopper provided with axial grooves corresponding to the ribs in said bottle-neck, and a disk provided with axial grooves similar to those on the stopper, and having a central opening therein; a flexible projection on said stopper adapted to engage in said opening in said disk and allow of the said stopper being turned relative to said disk; the said disk and stopper being adapted to be inserted through the ribbed portion of the neck of the bottle under tension on said flexible projection, whereby the said disk will turn and relieve said tension as soon as it passes the ends of said ribs in the neck of the bottle, substantially as described.

9. The combination with a bottle or jug having a neck provided internally with a plurality of vertical ribs; of a stopper adapted to fit into said ribbed portion; a disk composed of two similar sections, each provided with axial grooves corresponding to the ribs in the bottle-neck and connected together by a flexible connection in a superposed position so that the grooves on one are out of line with the grooves on the other, and means for detachably connecting said disk to said stopper, and allowing said disk to be inserted through

said ribbed portion of the bottle-neck and be held by said stopper in a suspended position until said stopper is withdrawn, substantially as described.

10. The combination with a bottle or jug having a neck provided internally with a plurality of vertical ribs; of a stopper adapted to fit into said ribbed portion; a disk composed of two similar superposed sections each provided with axial grooves corresponding to the ribs in the bottle-neck a flexible connection between said sections normally holding the grooves thereon out of coincidence; a flexible blade carried by said stopper adapted to engage in openings in said sections when the same are in coincidence and to lock them in that position; the said disk being adapted to be inserted in this position through the ribbed portion of the neck of the bottle and be held by said stopper in a suspended position, but to become detached from said stopper and return to its normal position when the said blade is withdrawn therefrom in removing the stopper from the bottle, substantially as described.

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

LE ROY C. WEBSTER.

Witnesses:

W. G. JACK,

JOHN S. BUGBEE.