

No. 679,268.

Patented July 23, 1901.

E. TYDEN.

SEAL LOCK FOR CANS OR BOTTLES.

(Application filed Oct. 22, 1900.)

(No Model.)

Fig. 1.

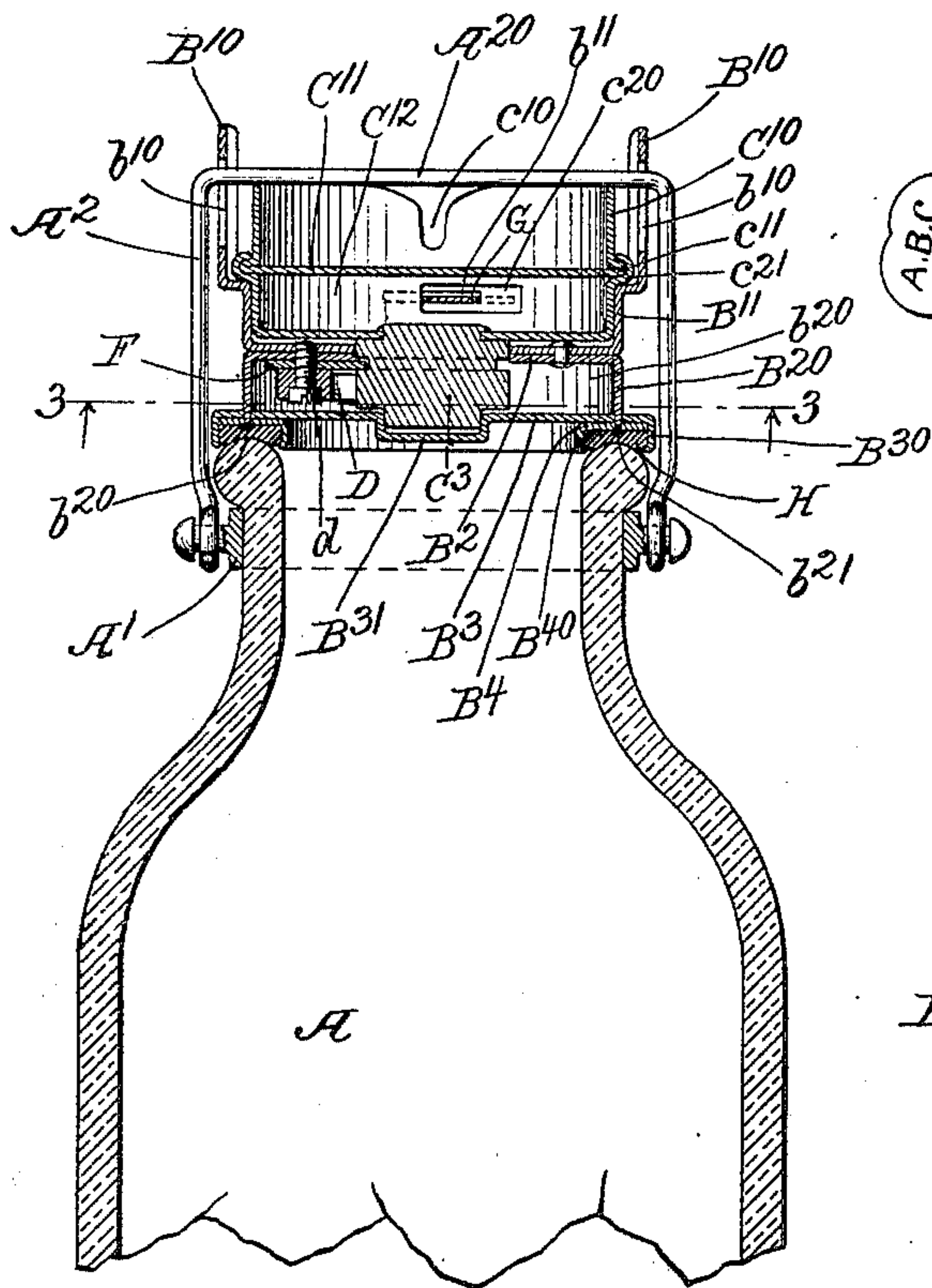


Fig. 2.

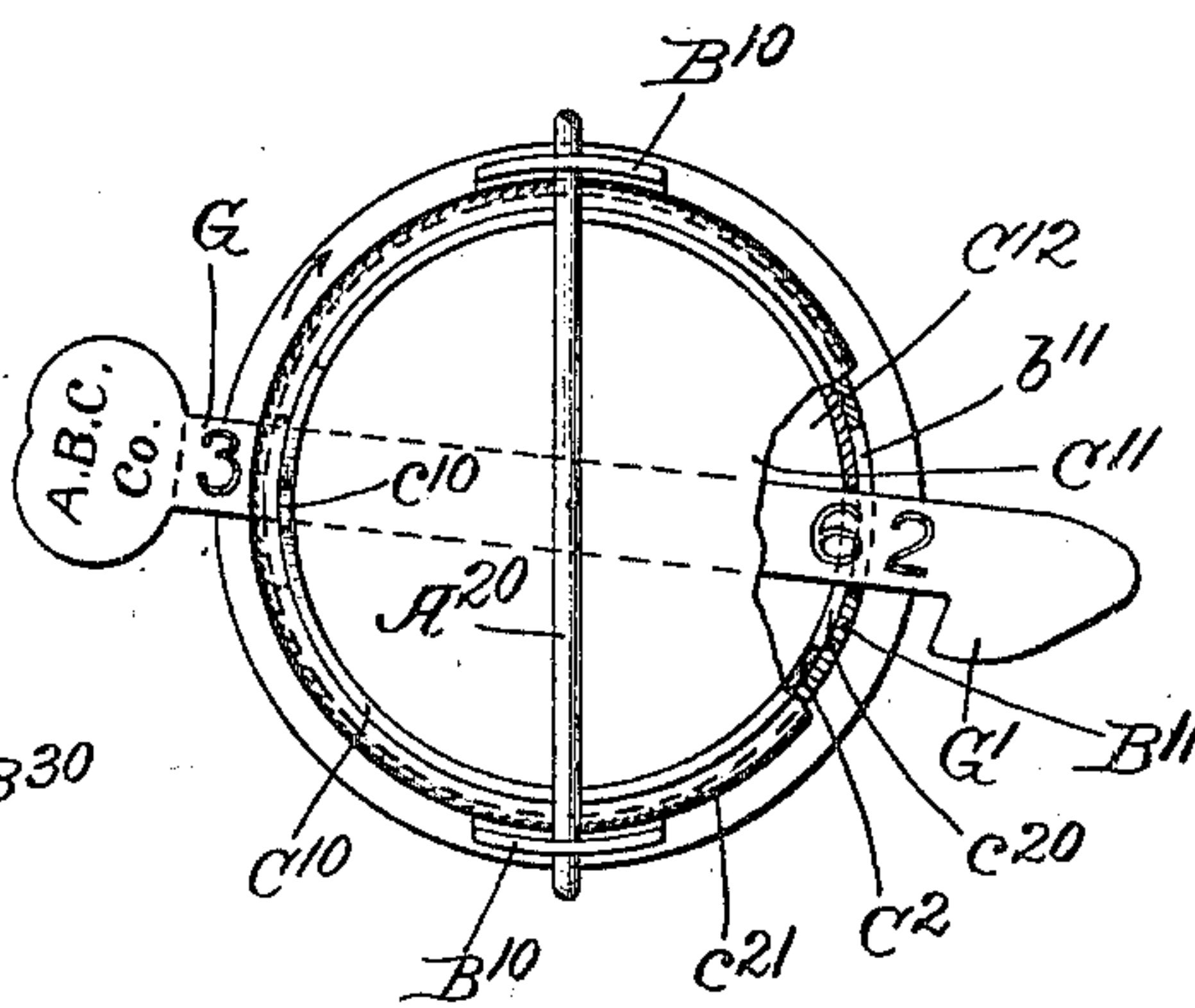


Fig. 3.

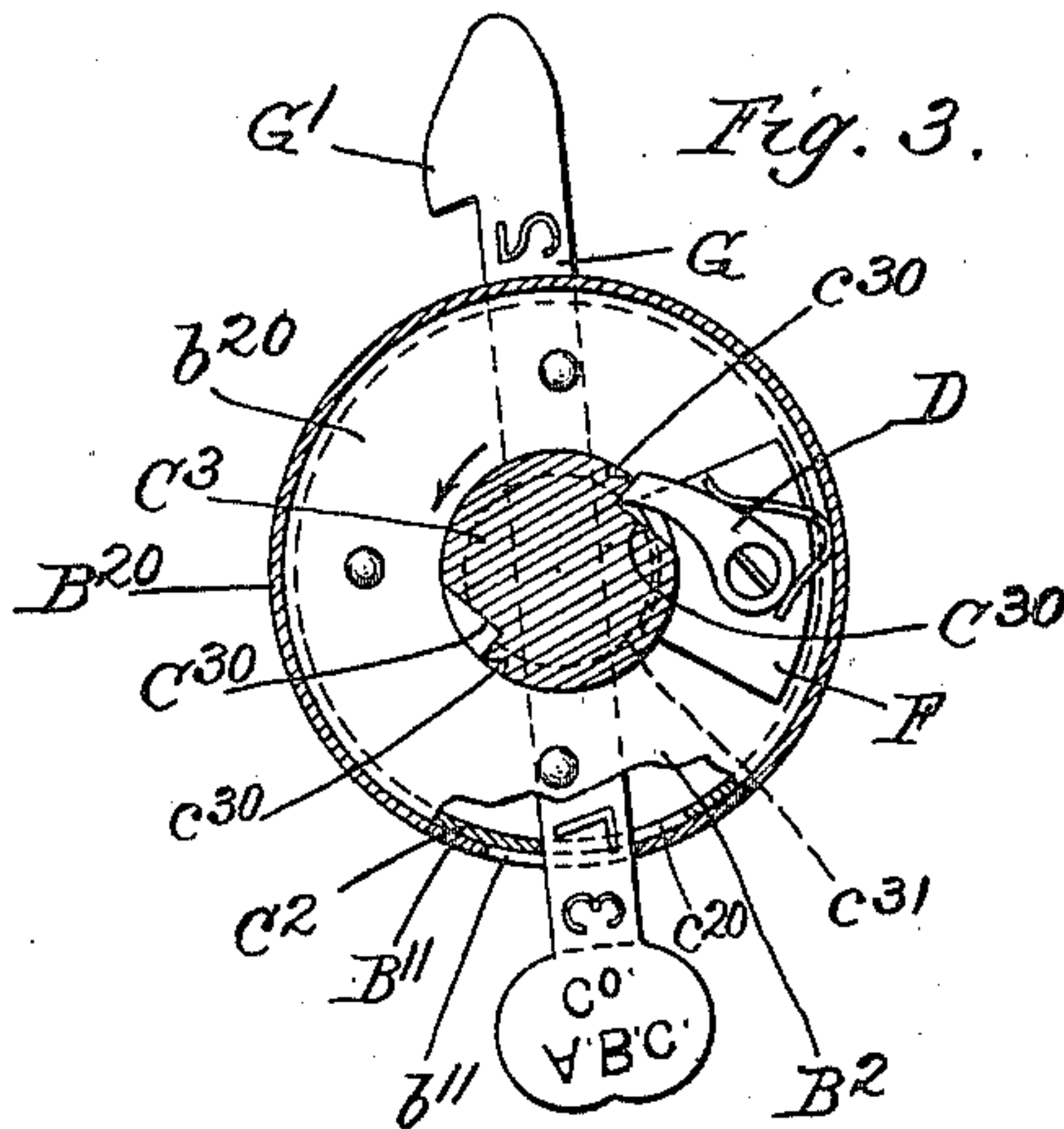


Fig. 4.

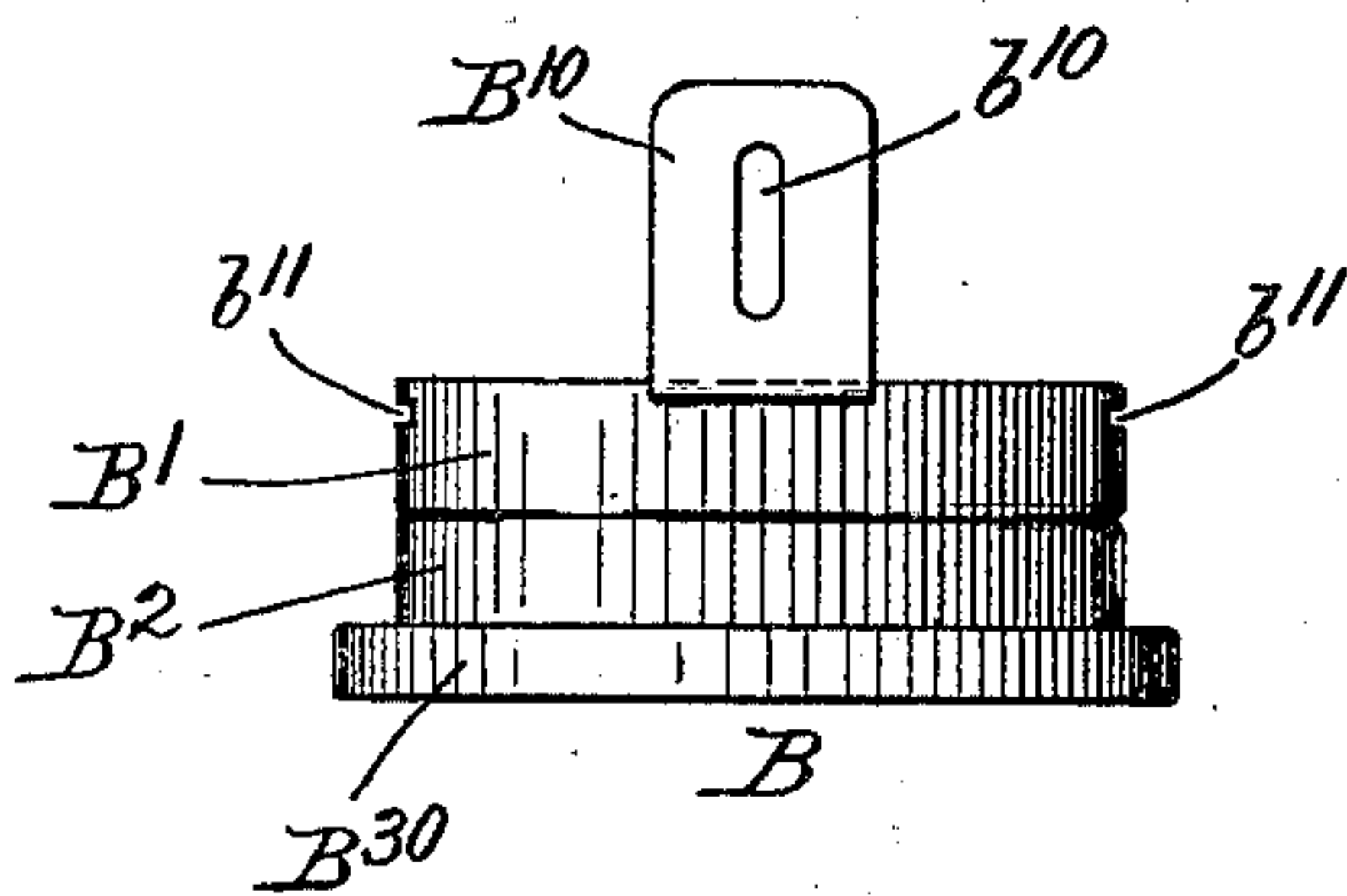
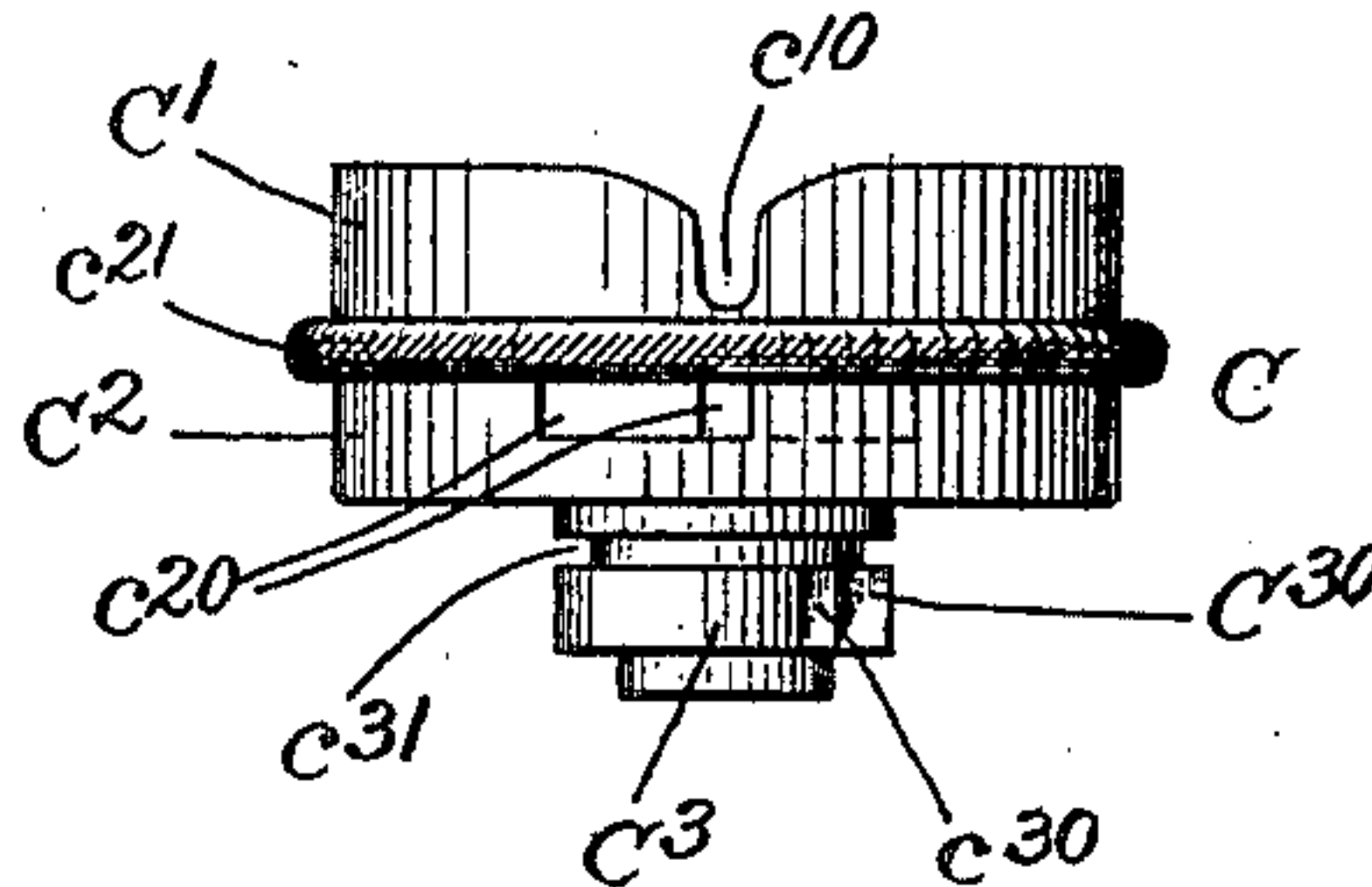


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

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SEAL-LOCK FOR CANS OR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 679,268, dated July 23, 1901.

Application filed October 22, 1900. Serial No. 33,867. (No model.)

To all whom it may concern:

Be it known that I, EMIL TYDEN, a citizen of the United States, residing at Hastings, in the county of Barry and State of Michigan, have invented certain new and useful Improvements in Seal-Locks for Cans or Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved closure for a can or bottle or other receptacle of similar character adapted to be sealed—that is, to be secured against opening by the insertion of an element technically known as a “seal”—whose removal can only be effected by rupture or mutilation and without whose removal the can or bottle cannot be opened or uncovered, the purpose being to insure the delivery to a customer of the identical contents—as, for example, milk or other beverage—with which the bottle is supplied before sealing.

In the drawings, Figure 1 is an axial section of the upper portion of a bottle having my improved seal-lock. Fig. 2 is a top plan of the seal-lock with the seal in position, a portion of the upper element of said lock being broken away at one side to disclose certain interior details. Fig. 3 is a section at the line 3 3 on Fig. 1. Fig. 4 is a side elevation of the lower element, and Fig. 5 is a side elevation of the upper element of the two parts locked constituting my invention.

A is the bottle, to whose neck there is secured a collar A', having pivoted to it a yoke or bail A², adapted to swing up across the mouth of the bottle, so that between its cross-bar A²⁰ and said mouth any suitable closing device may be placed and secured. I employ and secure in this position a two-part closing device comprising two principal elements B and C, with certain accessories hereinafter described. The lower element B has in its lower edge a seat for a packing-gasket H, which rests upon the mouth of the bottle, and at the upper end it has at the opposite side two lugs B¹⁰ B¹⁰, having vertical slots b¹⁰ b¹⁰, through which the cross-bar A²⁰ of the yoke or bail A² extends, thereby retaining the closing device permanently in connection

with the bottle so long as the collar A²⁰ remains clamped upon the neck of the latter. The two elements B and C are connected together, as hereinafter described, and adapted to be relatively rotated. The connection of the element B to the cross-bar A²⁰ by the engagement of said cross-bar in the slots b¹⁰ of course prevents the rotation of said element relatively to the bottle, so that the relative rotation of the two elements B and C is restricted to rotation of the latter element with respect to the former and to the bottle. The element C terminates upwardly in a cylindrical marginal flange C¹⁰, having at diametrically opposite points notches c¹⁰ c¹⁰, adapted to admit the cross-bar A²⁰ of the yoke or bail A² whenever said element C is rotated, so as to bring these notches in line under the cross-bar, and when in this position it will be seen that the entire two-part closing device can be lifted to take it off the mouth of the bottle, the depth of the notches c¹⁰ corresponding to the slots b¹⁰, so that both elements rise together, and the length of said slots and depth of the notches are sufficient to permit the lifting of the device far enough off the mouth of the bottle, so that it may be then swung over as the latter turns at its pivotal connection with the collar A'. To secure the cap consisting of this two-part device tightly upon the mouth of the bottle, it is brought into position above the same, as shown in Fig. 1, and the upper element C is rotated to carry the notches away from the position at which they register with the cross-bar A²⁰, and the edges of the notches are sloped, so that as said element C is thus rotated they operate as cams, engaging the cross-bar and, crowding the entire closing device down tightly upon the mouth of the bottle, compressing the gasket sufficiently for this purpose.

As thus far described the device may be employed without regard to its adaptation to receive a seal, and even when adapted for a seal it may be used without one when it is not necessary to take such precaution. For the purpose of adapting the device to be sealed, so that it cannot be disengaged from the bottle without destroying or mutilating the seal, I provide a pawl-and-ratchet con-

nection between the two elements B and C, preventing rotation except in one direction. This pawl-and-ratchet device is entirely concealed and inaccessible, and I provide also
 5 registering apertures in the two parts, where one rotates within the other, through which a strip of sheet material may be thrust when they are thus registered, such strip being arranged to be engaged by a little further rotation after it is inserted, and then by its
 10 presence to arrest rotation. The pawl-and-ratchet device is arranged to become engaged at this point, preventing rotation in the reverse direction, so that rotation in neither
 15 direction is possible until the seal is removed. The pawl-and-ratchet device is located in a chamber b^{20} , formed in the element B, the upper element C having a central hub or boss C^3 , which protrudes into this chamber from
 20 above and closes the aperture through its protrusion, said hub being formed as a ratchet-disk, and a pawl D being pivoted to the element B in such chamber and adapted to engage the disk, as seen in Fig. 3. In order
 25 to secure the two parts together, with the hub or boss C^3 thus intruded into the chamber b^{20} , I cut a narrow annular groove c^{31} in the boss at a position which will cause such groove to stand just below the upper wall of the cham-
 30 ber b^{20} when the parts are assembled as described, and I make a little key-plate F, of thin sheet-steel, adapted to be lodged in the chamber b^{20} and inserted into the groove c^{30} after the hub is thrust into the chamber.
 35 The plate is then secured by a screw d , which is conveniently made also to serve the purpose of a pivot for the pawl or dog D. In order to provide place for the registering apertures in the two elements through which
 40 the sealing-strip may be inserted, I provide the lower element B with a marginal flange B^{11} , (from the sides of which the lugs B^{10} spring and extend upwardly,) and I form the upper element C so that it seats in the cy-
 45 lindrical seat or cup thus formed when the hub C^3 is inserted through the central aperture, and at opposite points in the flange B^{11} I form horizontal narrow slots b^{11} b^{11} , and in the portion of the element C which seats
 50 within the flange B^{11} at corresponding points I form corresponding slots c^{20} c^{20} . These slots b^{11} and c^{20} are in such position that they register when the element C is turned to the position at which the notches c^{10} c^{10} are in line
 55 approximately at right angles to the cross-bar A^{20} of the yoke or bail A^2 , and the ratchet-hub C^3 and pawl D are so located that when the two parts are in this position the pawl D is lodged near one of the notches C^{30} ready to
 60 drop into said notch upon a little further rotation of the element C. For convenience of indicating this position without requiring close inspection of the slots I provide secondary notches c^{30} c^{30} on the ratchet-hub
 65 C^3 , which will cause a click of the pawl when this position is reached. When in

this position, the seal G, which is a strip of sheet metal whose specific form will be hereinafter described, may be inserted through the slots, protruding at both ends. At the
 70 entering end I make the seal with a lateral projection for the hook or claw G' the entire width, including such hook-claw, being substantially equal to the apertures b^{11} and c^{20} , but the width of the strip back of the hook
 75 or claw being less than the said apertures. At the opposite end of the seal I provide it with a head of any convenient form too large to pass through the apertures. When the seal has been inserted, as described, so that
 80 the hook or claw protrudes from the device at the farther side, the element C is rotated a little farther, bringing the notch c^{30} into position to permit the pawl to engage it, as seen in Fig. 3, and at this position the slots b^{11} and
 85 c^{20} are lapped by each other, as seen in Fig. 3, enough to closely embrace the seal back of the lug or claw, so that it cannot be withdrawn, and at this position its reverse movement is prevented by the engagement of the
 90 pawl and ratchet. The entire device is securely locked and can be unlocked only by breaking off one end or the other of the seal, so that it may be withdrawn longitudinally. When this is done, the element C may be ro-
 95 tated onward in the same direction in which it was first rotated to bring the pawl and ratchet into engagement and the notches c^{10} brought into line under the cross-bar A^{20} , permitting the opening of the bottle. 100

For certain reasons I prefer that the seal should be concealed in a chamber in the device when it extends therethrough, as seen in Fig. 2. For that purpose I interpose above
 105 the level of the slots b^{11} c^{20} a diaphragm C^{11} , inclosing between it and the bottom plate from which the boss C^3 protrudes a chamber C^{12} , which is inaccessible except through the apertures through which the seal is inserted. The principal purpose of this construction is
 110 to permit the employment of a seal having identifying numbers or characters, so that the entire identification cannot be read at any one position of the seal, but shall require a longitudinal movement of the seal first to one
 115 limit and then to the opposite limit of the play, which is permitted by the length of the seal between the head and claw in excess of the diameter of the element B. For example, the entire identifying number consisting
 120 of four figures "3762," as illustrated in the drawings, show the figures "3" and "7" at the end of the seal next to the head and the other two "6" and "2" next to the claw or
 125 lug, the inner figures "7" and "6" being entirely within a distance not materially greater than the diameter of the flange B^{11} , but the distance between the head and claw being greater than that diameter by an amount sufficient to disclose either the two figures at
 130 one end or the two figures at the other end, but not both at the same time. This expe-

dient makes it possible to require inspection of the seal at any point intermediate the point of sealing and the point of delivery to the customer and to prevent evasion of such inspection by the person charged therewith, because the entire number cannot be reported without actually manipulating the seal by thrusting it first to one limit and then to the other of its play, and such manipulation will disclose whether the seal has been cut in two or tampered with in any way.

For convenience in the process of manufacture and for cheapness I prefer to construct this seal-lock in the manner shown in the drawings and particularly in Fig. 1, making it of sheet metal except as to the hub C³. As illustrated, the element C is comprised of three parts, to wit: An upper part C', formed in a die in cup form, with an outwardly-protruding crimp or bead c¹¹ at the lower margin in the plane of the diaphragm C¹¹, which forms the bottom of the cup. The second part C² is also formed as a cup with a central aperture, the upper margin of the cup being shaped as a hollow bead c²¹, which is crimped around the bead c¹¹ as a means of securing the two parts C' and C² of this element together. The bead c²¹ is exteriorly knurled and protrudes slightly beyond the outer circumference of the flange B¹¹ of the lower element B and so constitutes the means by which said upper element may be grasped to rotate it in locking and unlocking the device. The third part of the element C consists of the hub C³, which is riveted at the center of the bottom diaphragm of said element and protrudes therefrom, forming the ratchet, as described. The element B comprises two cup-shaped parts B' and B², secured bottom to bottom with their central apertures registering, through which the ratchet-hub C³ is admitted into the chamber b²⁰, as described. To close the chamber b²⁰ at the bottom and at the same time afford a suitable recess to hold the gasket H, said element B comprising, in addition to the two cup-shaped parts B' and B², the marginally-flanged diaphragm B³ and the annulus B⁴, flanged at its upper margin and lodged within the flange B³⁰ of the part B³, said parts B³ and B⁴ being secured by riveting to the lower margin of the flange B²⁰ of the part B², which is formed in suitable projections b²¹ for that purpose. The flanges B³⁰ and B⁴⁰ are each slightly inturned, so that the gasket H, being crowded or sprung to the seat formed between them, is securely retained thereby. The diaphragm B³ is preferably provided at the center with a sunken seat B³¹, and the end of the hub C³ is reduced in diameter and adapted to enter such seat, thus centering the two elements B and C regardless of other features.

I claim—

1. A seal-lock for a can or bottle, comprising two elements relatively movable in one direction; means by which such movement se-

cures closure of the bottle, and means preventing movement in reverse direction, said elements having lodgment for a seal at position to resist such movement onward from locked position; and a rupturable seal adapted to be so lodged in said elements, and to be engaged preventing its removal by movement of said elements to locked position.

2. A seal-lock for a can or bottle, comprising two elements relatively movable in one direction, and means by which said elements secure closure; said elements having cooperating features affording lodgment for a seal at position resisting movement onward out of securing position; inaccessible automatic means preventing movement in reverse direction, and a rupturable seal adapted to be lodged in said elements and to be engaged preventing its removal by movement of the elements to a securing position.

3. A seal-lock for a can or bottle, comprising two elements relatively rotatable; means by which such relative rotation in one direction secures closure of the bottle; cooperating features in the two relatively rotatable elements, affording lodgment for a seal at position resisting such relative movement onward out of locked position; inaccessible automatic means preventing such relative rotation in reverse direction, and a rupturable seal adapted to be lodged in such elements and to be engaged preventing its removal by the relative movement to securing position.

4. A seal-lock for a can or bottle, comprising two elements connected together and relatively rotatable, one of said elements having a ratchet, and the other a pawl to engage the ratchet, permitting such relative rotation in one direction and preventing it in the opposite direction; apertures in said two elements adapted at one position in such relative rotation to register and constitute together a seal-receiving cavity; a seal adapted to be inserted in such cavity when the recesses are so registering, and to be engaged against removal by partial movement away from such registered position; the pawl and ratchet being adapted to become engaged to prevent reverse movement at the limit of the partial movement which engages the seal.

5. A seal-lock for a can or bottle, comprising two parts connected together and relatively rotatable at such connections, each of said parts having one element of a clutch device, permitting relative rotation in one direction only and having respectively apertures which register at one position of the two parts and together constitute a seal-receiving cavity; a seal adapted to be inserted in such cavity, and to be engaged against removal by partial rotation of the parts away from such registered position in the direction permitted by the clutch, and to obstruct further rotation.

6. A seal-lock for a can or bottle, comprising two parts seated one within the other and

relatively rotatable; means by which such rotation secures the closure of a can or bottle; a clutch device which prevents rotation away from securing position in one direction; said parts having respectively apertures which register and are adapted to receive a seal at one position in the relative movement; and a seal adapted to be inserted at such position, and to be engaged against removal by movement of the parts in the direction permitted by the clutch out of registered position within the range of securing position.

7. A seal-lock for a can or bottle, comprising two parts seated in each other and relatively rotatable; means by which such rotation secures the closure of the can or bottle; a clutch device which prevents rotation away from securing position in one direction, one of said parts having a cylindrical flange and the other having a cylindrical feature which is inclosed by such flange; such flange and cylindrical feature having respectively slots or apertures which are adapted to register at one position in the relative movement, such slots or apertures being extended or having their greater transverse dimension in a plane transverse to the axis of rotation, and being of slight dimension in a direction parallel to said axis; a seal consisting of a strip of sheet material adapted to be inserted through such apertures when registered and present the dimension of its width in the plane of rotation, and to be engaged against removal by partial movement in the direction permitted by the clutch out of registration within the range of said securing position, and to resist further movement in said direction.

8. A seal-lock for a can or bottle, comprising two relatively rotatable parts, and means by which such rotation secures closure; said parts having features for receiving a seal, and having their relative rotation away from secured position prevented thereby; one of said parts having a hub or projection, and the other having a chamber into which such hub intrudes and which is closed by such intrusion; the wall of the chamber and such intruded hub having cooperating elements of a clutch, preventing rotation away from secured position except in one direction; and a seal adapted to be engaged against withdrawal by rotation in such direction.

9. A seal-lock for a can or bottle, comprising two relatively rotatable parts, and means by which their rotation to a certain position secures closure; means preventing their rotation back from such position; one of said elements having a cylindrical flange, within which the other element is seated, the flange having opposite apertures, and the seated element having a passage inaccessible except through and in line with such apertures at one position; and a seal having two enlargements in the course of its length, adapted to be thrust through the apertures and passage and protrude at both ends, and to be engaged

between such enlargements by partial rotation of elements.

10. In a seal-lock for a can or bottle, two relatively rotatable elements, B and C, having the registering seal-apertures, the element B comprising two cupped parts, B' and B², secured together bottom to bottom, and the disk B³ secured over the mouth of the part B² inclosing a chamber, the element C having a ratchet-hub intruding into such chamber, and the pawl mounted in the chamber to engage the same.

11. In a seal-lock for a can or bottle, two relatively rotatable elements, B and C, the former having a ratchet-chamber b²⁰ and the latter having rigid with it a ratchet intruded into such chamber, said latter element being composed of two cupped parts, C' and C², the first exteriorly beaded at the bottom and the second having its margin at the top crimped around such bead securing such parts together and forming a chamber between them, the wall of such chamber having the seal-apertures of said element.

12. In a seal-lock for a can or bottle, two relatively rotatable elements, B and C, the first comprising two cupped parts secured together bottom to bottom, and a disk closing the mouth of the lower one to form a ratchet-chamber, the second having an upper part adapted by rotation of said element to effect closure of said bottle, and comprising a lower cupped part secured by the margin of its flange to the bottom of the upper part, forming a closed chamber, such chamber being seated in the upper cupped part of the first element; said cupped part and said seated part having registering seal-apertures.

13. In a seal-lock, two relatively rotatable elements having surfaces adjacent in such rotation provided with registering seal-apertures; one of said elements being adapted to be seated at the mouth of the receptacle to be sealed, and having a clutch-chamber and one member of a clutch mounted therein; the other element having a hub protruding in such chamber and having therein the second member of the clutch; said second element having a chamber inclosed by a wall which is provided with the seal-apertures.

14. In a seal-lock, two relatively rotatable elements and means by which rotation to a certain distance secures closure; the first element having a bottom plate completely closing it, and above such bottom plate a clutch-chamber; the second element having a hub protruded down into the clutch-chamber, and a retaining plate or key let into the hub within the clutch-chamber, said elements having, at their upper part, seal receiving and engaging features.

15. A seal-lock for a can or bottle, comprising two relatively rotatable elements and means by which such rotation to a certain position secures closure of the bottle; said elements having respectively seal-apertures

which register and admit the seal at such securing position; and a seal adapted within the registering apertures and when thus inserted to prevent relative rotation of the elements away from secured position, and to be secured against withdrawal.

In testimony whereof I have hereunto set

my hand at Hastings, Michigan, in the presence of two witnesses, this 20th day of October, A. D. 1900.

EMIL TYDEN.

In presence of—

KITTIE F. BEADLE,
T. W. STEBBINS.