

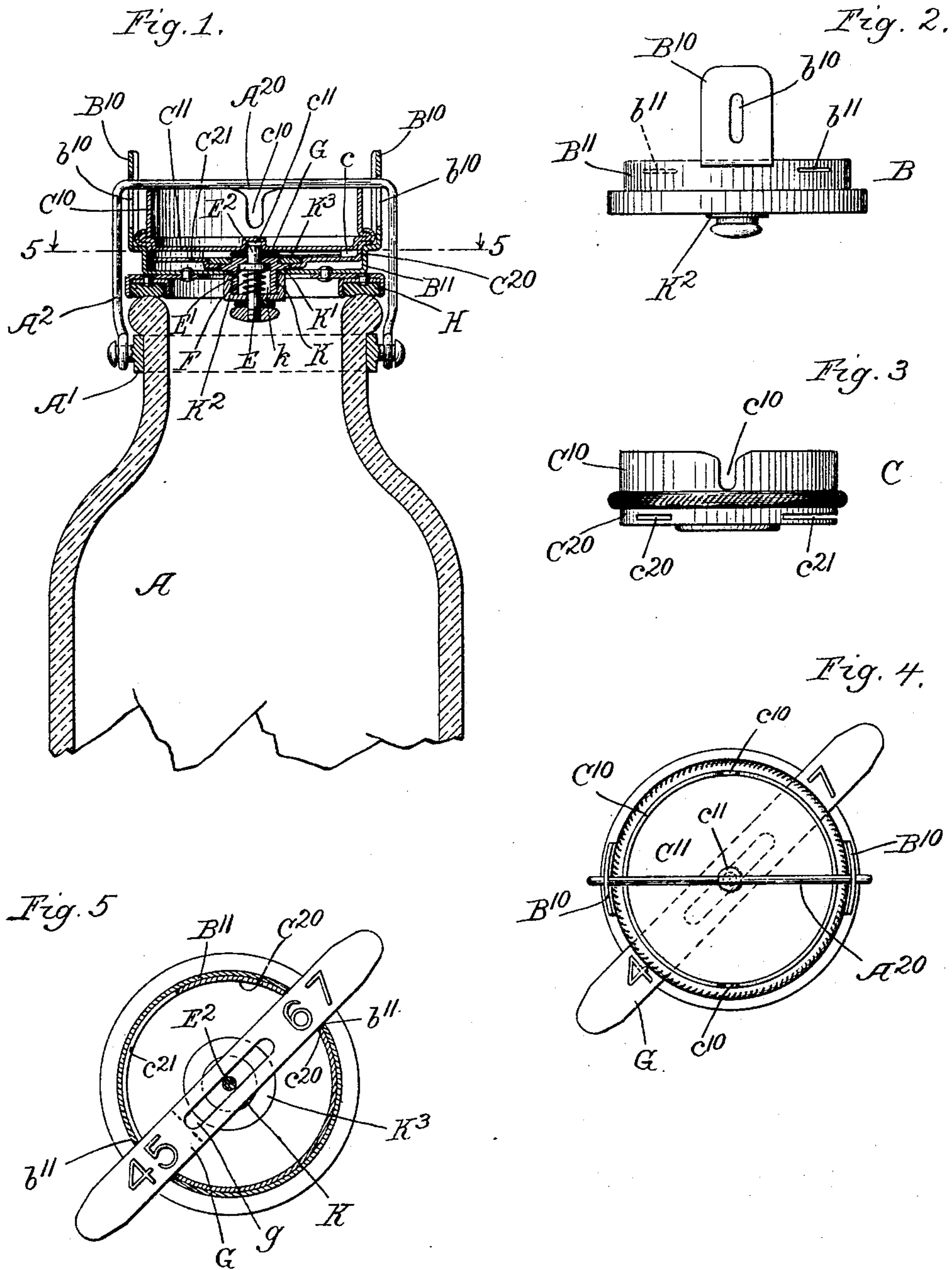
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Patented June 25, 1901.

E. TYDEN.
SEAL LOCK FOR CANS OR BOTTLES.

(Application filed Nov. 23, 1900.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

EMIL TYDEN, OF HASTINGS, MICHIGAN.

SEAL-LOCK FOR CANS OR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 677,047, dated June 25, 1901.

Application filed November 23, 1900. Serial No. 37,426. (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, which are fully described in the following specification, reference being had to the accompanying drawings, forming a part thereof.

10 In the drawings, Figure 1 is an axial section of the upper portion of a can or bottle having my improved seal-lock for closing it. Fig. 2 is a side elevation of one of the principal elements comprising said lock. Fig. 3 is a side elevation of the other principal element. Fig. 4 is a top plan of the device. Fig. 5 is a section at the line 5 5 on Fig. 1.

The purpose of this invention is to provide an improved device for effecting closure and securing the mouth of the can or bottle or other receptacle, such closing device being adapted to be secured by an element conventionally known as a "seal"—that is to say, a piece of material which is adapted to be inserted in some manner through the device after it is brought into secured position or condition and which being thus inserted is itself unremovable without rupture and so long as it remains prevents movement of the parts which would be necessary to unclo-

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se the bottle, so that when the bottle has been thus closed and secured by the seal at the place where the bottle is filled the customer receiving the bottle with the seal unbroken can be assured that he receives the identical contents which were placed therein before it was sealed.

My improved bottle-lock comprises two relatively rotatable parts associated with features of or attached to the bottle by which such rotation to a certain position effects and secures closure of the bottle. Said two relatively rotatable parts have cooperating features adapting them to have a seal consisting of a strip of sheet material thrust through them to prevent their rotation away from securing position, but so constructed that the seal being partly inserted will permit the rotation from unsecuring to securing position, a catch-bolt being provided adapted to engage the seal when the latter is thrust entirely through in position to secure the parts, such

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catch being accessible from the inner side of the device, and therefore only before it is applied over the mouth of the bottle, and being adapted therefore to be withdrawn sufficiently to permit the insertion of the seal part way, the seal being when thus inserted part way adapted to stop the catch-bolt without being engaged by it, but being constructed so that when it is thrust through into securing position it becomes engaged by the action of the catch, which is then inaccessible if in the meantime the device has been applied in position to close the bottle.

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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 my seal-locking device may be placed to close the mouth of the bottle and be secured by proper seal.

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My two-part closing device above described in general terms comprises the principal elements B and C. The lower element B has in its lower end a seat for a packing-gasket H, which rests on the mouth of the bottle. At the upper end it has at the two opposite sides 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 perfectly in connection with the bottle so long as the collar A' remains clamped on the neck of the latter. The two elements B and C are connected together, as herein- after 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 prevents the rotation of said element B relative to the bottle, so that the relative rotation of the 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 with 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 from the mouth of the bottle, the depth of the notches c¹⁰ corresponding to the length of the slots

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b^{10} , so that both elements rise together, and the length of said slots and depth of said notches is 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 the pivotal connection of 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 A^{20} , and the edges of the notches are sloped, so that as said notches are 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 securing B and C together in such manner that they may be relatively rotated and also for the purpose of providing a seat or chamber for the catch-bolt which is to engage the seal I employ a hollow stud K , having a flange K' near one end and threaded over the greater part of its length from the opposite end toward such flange to receive the threaded sleeve or nut K^2 , by which it may be clamped tightly to the element B at a central aperture provided in the same. The element C has also a central aperture whose diameter is equal to the diameter of the flange K' and in which the same may be seated, the thickness of the flange being also equal to or very slightly greater than the thickness of the metal comprising the element C around said central aperture, so that by applying a washer K^3 on the end of the stud-bolt K at the opposite side of the slots from that which is inserted through the central aperture in the element B and riveting down the stud onto the washer the element C is securely retained on the stud, and thereby retained in proper relation to the element B , while free to rotate with respect to the latter element. The central chamber k of the stud-bolt K is adapted to receive the catch-bolt or plunger E , which is reduced at the upper end and protrudes through the central aperture of the stud-bolt K at that end, being stopped by the shoulder back of said reduced end. The catch-bolt is also reduced from the other end toward said shoulder, leaving standing only a flange E' ; and on the reduced portion back of said flange within the chamber k the spring F is coiled, reacting against the flange at one end and at the other end against the cap-plate which closes the cavity k , as hereinafter described, thus tending to cause the catch-bolt to thrust its reduced end E^2 upward into the element C . The element C has a horizontal diaphragm C^{11} secured at a very

little distance above the bottom diaphragm of said element, and at the center of said diaphragm there is located a socket adapted to receive the reduced end of the catch-bolt, which is long enough to be thrust entirely across the chamber c , which is inclosed between said diaphragm C^{11} and the bottom of said element C .

In order to provide a place for the registering apertures through which 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 cylindrical seat or cup thus formed when the two parts are pivotally secured together by the stud-bolt K , as above described. At diametrically opposite points in the flange B^{11} , I form thereon horizontal slots b^{11} , which are immediately above the plane of the upper surface of the bottom diaphragm C^{21} of the element and substantially as wide vertically as the depth of the chamber c . The slots b^{11} are preferably in line at an angle of about forty-five degrees to the line of the center of the lugs B^{10} , and in the cylindrical wall C^{20} of the chamber c of the element C , I form at one side a similar aperture c^{20} about forty-five degrees around from the center of the notches c^{10} , and commencing at a diametrically opposite position I form a slot c^{21} , of similar width, also opening into the chamber c , extending from such commencing-point about ninety degrees around said element C toward the side at which the more remote notch is located.

In the use of my improved seal-lock for bottles, after the bottle is filled and ready to be closed and before the closing device is swung up into position over the mouth of the bottle, the part C being in position at which the notches c^{10} are engaged by the cross-bar A^{20} , a seal G , consisting of a strip of thin sheet material whose width is the length of the slots b^{11} and c^{20} , will be inserted through one of the slots b^{11} , which at that position stand registered with the end portion of the extended slot c^{21} , the operator at the same time pulling down the catch-bolt E , so that its upper engaging end is withdrawn out of the chamber c , the seal being inserted past the point through which the catch-bolt extends into said chamber, and upon the operator releasing the catch-bolt it will grasp the inserted end of the seal, holding it up against the upper wall of the chamber c . The device will now be brought into position closing the mouth of the bottle and the element C rotated about ninety degrees—that is, until the opposite end of the slot c^{21} reaches the inserted end of the seal, which will stop such rotation. At this position the other slot c^{20} laps on the opposite aperture b^{11} of the element B , and the seal may now be thrust entirely through and caused to protrude from the opposite side through the element B at

the aperture b^{11} . The seal has a slot g extending longitudinally at the middle portion of its length in position to be engaged by the end of the catch-bolt E when the slot reaches the catch-bolt as the seal is thus thrust through, and the catch-bolt thus is protruded entirely through the seal and its upper end becomes engaged in the recess c^{11} at the center of the diaphragm C^{11} . The seal occupying the entire width of the aperture b^{11} and of the aperture c^{20} and being now extended through both those apertures locks the two parts B and C together against their relative rotation, and the ninety-degree revolution given to the element C causes the cross-bar A^{20} of the yoke or bail A^2 to be lodged across the upper edges of the flange C^{10} at a distance ninety degrees removed from the notches c^{10} , and the device is thus held securely bound onto the mouth of the bottle and cannot be released except by rotating the element B back to the position at which the notches c^{10} again coincide with the cross-bar A^{20} . Such rotation being prevented by the seal, the bottle cannot be opened until the seal is withdrawn; but the seal cannot be withdrawn so long as its slot g is engaged within the catch-bolt E, and the catch-bolt E being inaccessible it cannot be disengaged from the seal. The only method, therefore, by which the seal can be released and the device put into condition to be opened is to rupture the seal in some manner, permitting its withdrawal longitudinally. In order that this may be done conveniently and in such manner as not to leave fragments of the seal within the cavity c , I preferably make the slot g of such length that the seal may be moved longitudinally to bring one end of the slot close to but not beyond the outer surface of the flange B^{11} at the aperture b^{11} , and I perforate or score the seal crosswise at the end of the slot, so that it may be readily broken off when it is brought to this position, thus opening the slot and permitting the feature of the seal to be withdrawn. The elongation of the slot g serves another purpose—to wit, that identifying-marks, consisting of several figures, (for example, as "4567,") can be placed on the seal in such position that part of them are concealed within the device, so that it is necessary to move the seal longitudinally first to one limit and then to the opposite limit of the range of movement permitted by the length of the slot g in order that part of the figures may be read at one position and the remainder at the opposite position. This makes it possible to require inspection of the package at any desired point between that at which it is sealed and shipped and its delivery to the customer and to prevent evasion of such requirement, because the report of inspection cannot be made without fully reporting the identifying character or number, and this cannot be reported without manipulating the seal in the manner described in a manner to see all the figures, and

such manipulation will disclose whether the seal has been cut or in any manner tampered with.

I claim—

1. A seal-lock for a can or bottle, comprising two relatively movable elements; means by which such relative movement secures closure of the bottle; said elements having seal-apertures occupying relative positions such as to admit the seal when the elements are in such securing position; a seal adapted to be inserted therein and when in place to prevent movement of the elements out of securing position; a catch which normally stands in the path along which the seal is inserted and is accessible for withdrawing the catch to permit the insertion of the seal only when the device is removed from bottle-closing position; the seal being formed to be engaged by the catch when the latter is free to take its normal position and the seal is inserted to position preventing unclosing movement of the parts.

2. A seal-lock for a can or bottle, comprising two relatively movable elements and means by which such relative movement secures closure of the bottle; said elements having apertures admitting the seal when they are out of securing position, and permitting movement to such position; and other apertures which permit further insertion of the seal after the securing position is reached; a seal adapted to be inserted through both sets of apertures, and when entered in the latter apertures to prevent movement out of securing position; a catch which normally stands in the path along which the seal is entered, at a point reached by the seal before the latter apertures are entered; and means accessible only when the device is removed from bottle-closing position, for withdrawing the catch to permit the insertion of the seal, the seal being formed to be engaged by the catch when the latter is free to take its normal position and the seal is entered in the latter apertures.

3. A seal-lock for a can or bottle, comprising two relatively rotatable elements and means by which relative rotation secures closure of the bottle, said elements having seal-apertures which occupy relative positions such as to admit the seal when the elements are in said securing position; a seal adapted to be inserted therein, and when inserted to prevent rotation of the element out of securing position; a catch which normally stands in the path along which the seal is inserted, and means accessible only when the device is removed from bottle-closing position for withdrawing the catch to permit the insertion of the seal, the seal being formed to engage the catch when the latter is free to take its normal position and the seal is fully inserted.

4. A seal-lock for a can or bottle, comprising two relatively rotatable elements, and means by which such relative rotation se-

cures closure of the can or bottle; said elements having apertures admitting the seal when said elements are out of securing position, and permitting rotation to such position; and other apertures which admit the seal after securing position is reached; a seal adapted to be inserted through the first apertures and to emerge through the latter apertures, and when thus lodged to prevent rotation of the parts away from securing position; a catch which normally stands in the path along which the seal is inserted; and means accessible only when the device is removed from bottle-closing position, for withdrawing the catch to permit the insertion of the seal, the seal being formed to be engaged by the catch when the latter is free to take its normal position and the seal is inserted through the latter apertures.

5. A seal-lock for a can or bottle, comprising two relatively rotatable elements, and means by which such relative rotation secures closure of the bottle, said elements having cylindrical features which seat one within the other and having apertures which lap when such elements are out of securing position and are of such circumferential extent that they continue to lap throughout partial rotation to securing position, and having other apertures which become registered only at securing position; a seal adapted to be inserted through both sets of apertures, and when inserted in the latter apertures to prevent movement out of such position; a catch which normally stands in the path along which the seal must be inserted to reach the latter aperture; and means accessible only when the device is removed from bottle-closing position, for withdrawing the catch to permit the insertion of the seal, the seal being formed to be engaged by the catch when the latter is free to take its normal position, and the seal is inserted through the latter apertures.

6. A seal-lock for a can or bottle, comprising two relatively rotatable elements, and means by which such relative rotation secures closure of the bottle, such elements having seal-apertures which occupy relative positions such as to admit the seal when the elements are in said securing position, such apertures having their greater transverse dimension in a plane transverse to the axis of rotation, and being of slight dimension in direction parallel to said axis; a seal consisting of a strip of sheet material adapted to be inserted through such apertures and present the dimension of its width in the plane of rotation,

and when in place to prevent rotation of the elements out of securing position; a catch which normally stands in the path along which the seal is inserted to reach the latter position; and means accessible only when the device is removed from bottle-closing position for withdrawing the catch to permit insertion of the seal, the seal being formed to be engaged by the catch when the latter is free to take its normal position, and the seal is inserted to said latter position.

7. A seal-lock for a can or bottle, comprising two relatively rotatable elements, B and C, and means by which such relative rotation secures closure of the bottle; said elements having corresponding cylindrical features seated one within the other, the element B having a flange, B^{11} , forming an upwardly open cup, and the element C seated in such cup and having a chamber encompassed by the flange B^{11} , said flanges having opposite apertures, b^{11} , b^{11} , in the plane of the chamber c , and the wall of said chamber having apertures, c^{20} and c^{21} , the latter being extended in the plane of rotation to lap one of the apertures b^{11} while the parts are relatively rotated from unsecuring to securing position, the aperture c^{20} being registered with the other aperture b^{11} ; only at the limit of such movement; a seal adapted to be inserted through the apertures, having itself the aperture g ; a catch which normally stands in the path along which the seal is inserted, and adapted to engage the aperture g of the seal; means accessible only when the device is removed from bottle-closing position for withdrawing the catch to permit the insertion of the seal into the chamber c .

8. A seal-lock for a can or bottle, comprising the elements B and C, having corresponding cylindrical features seated one within the other, and provided with seal-apertures registering to admit the seal; the hollow stud K connecting said elements at the center; the catch-bolt lodged in such stud and thrusting up through it into the path of the seal, and having its stem accessible through the bottom of the element B.

In testimony whereof I have hereunto set my hand, at Hastings, Michigan, in the presence of two witnesses, this 31st day of October, A. D. 1900.

EMIL TYDEN.

In presence of—
A. C. BROWN,
NORA COOPER.