A. W. LOSHBOUGH.

SEAL.

APPLICATION FILED AUG. 4, 1909.

943,834.

Patented Dec. 21, 1909.

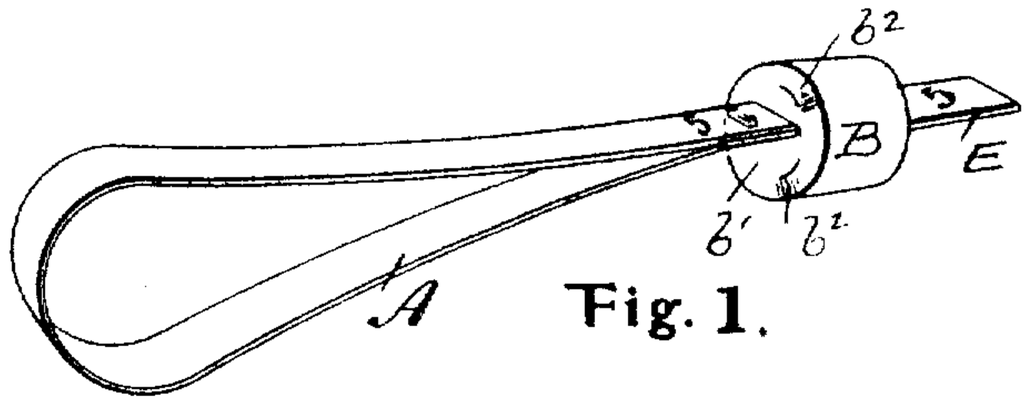

Fig. 1.

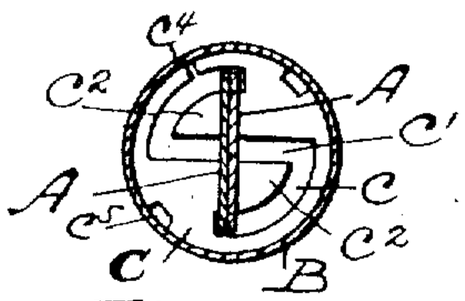

Fig. 5.

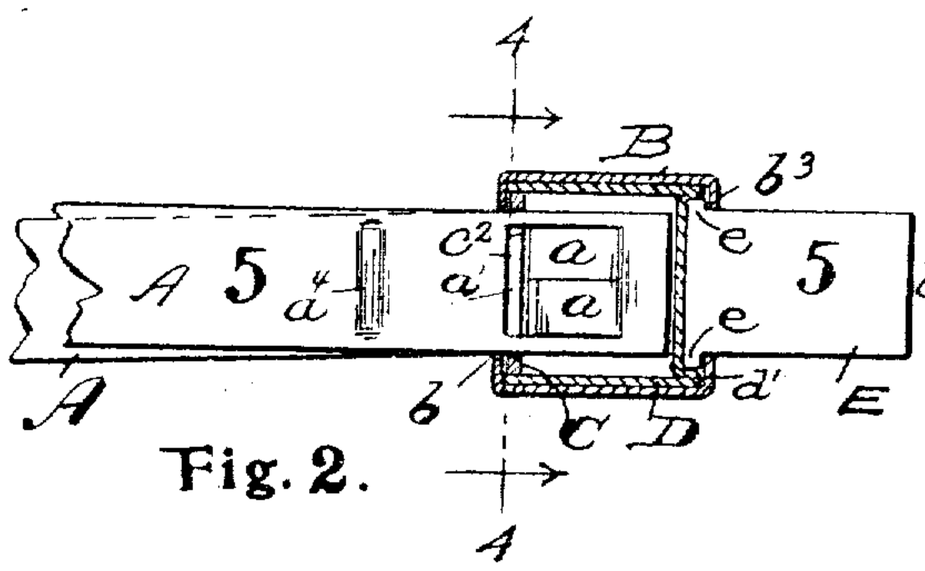

Fig. 2.

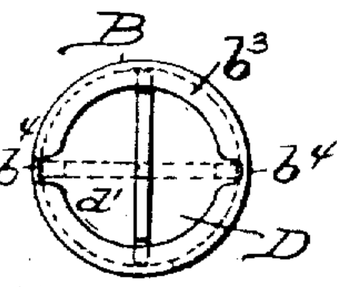

Fig. 3.

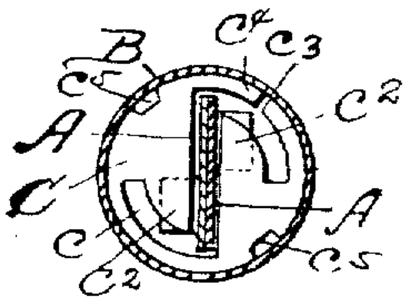

Fig. 4

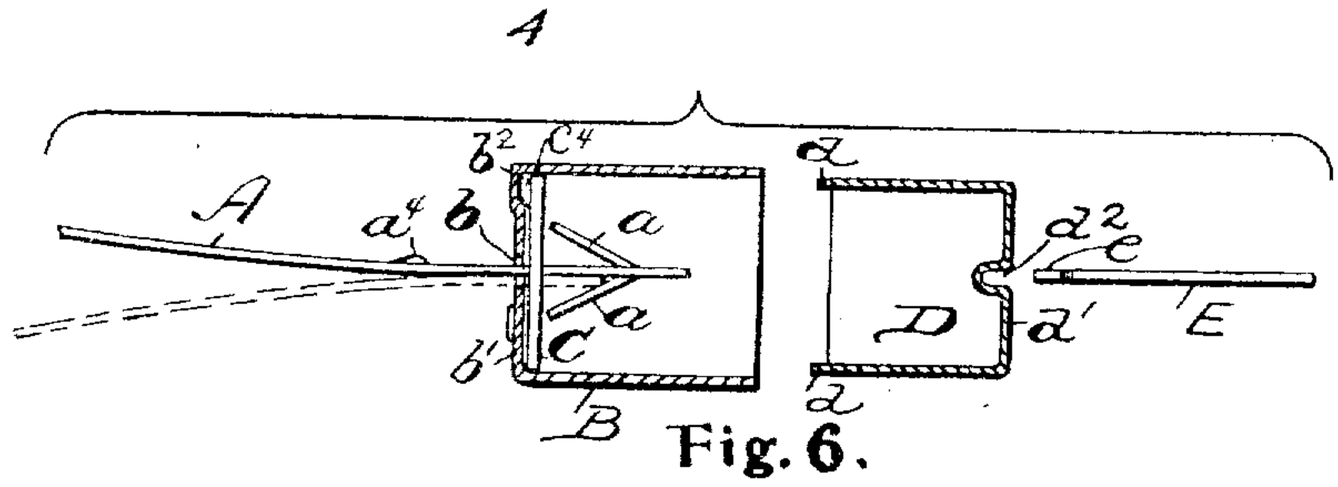

Fig. 6.

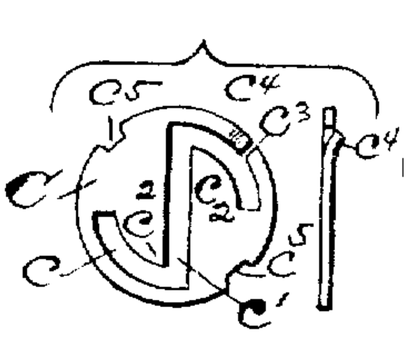

Fig. 7.

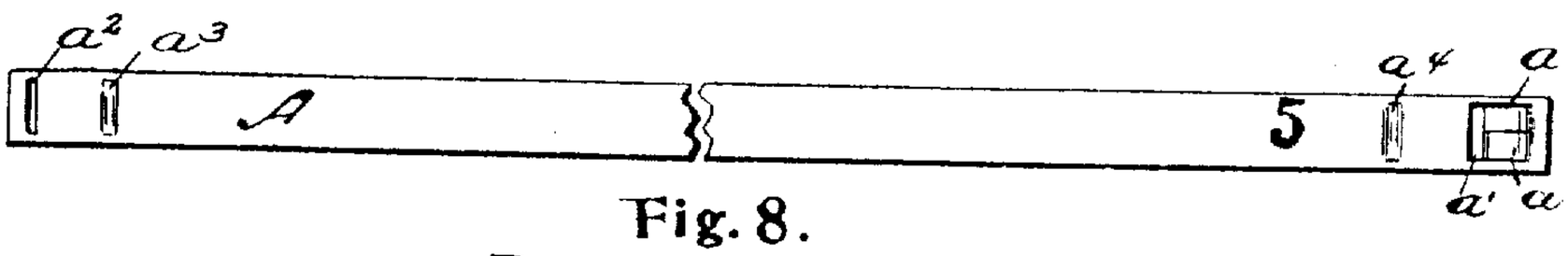

Fig. 8.

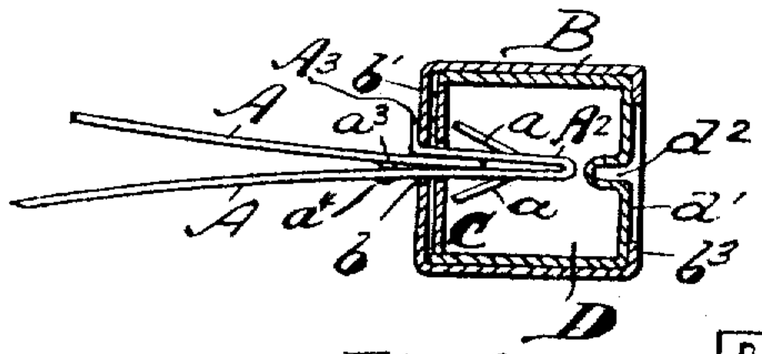

Fig. 9.

Fig. 10.

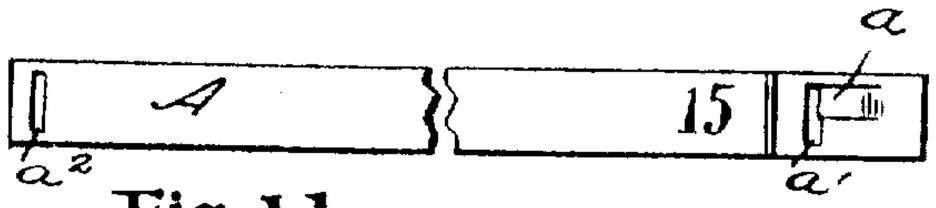

Fig. 11.

Witnesses

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Attorney

UNITED STATES PATENT OFFICE.

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SEAL.

943,834. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed August 4, 1909. Serial No. 511,219.

To all whom it may concern:

Be it known that I, ANTHONY W. LOSHBOUGH, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Seals, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in seals for freight cars or other like purposes, shown in the accompanying drawings and more particularly pointed out in the following specification and claims.

My invention has for its object the construction of a simple and effective seal, its engaging loop formed of a ribbon of metal, the parts being so constructed and arranged that the fact of the seal being actually locked or not will be at once apparent without the necessity of making more than a hasty examination.

Another object is to provide means for closing the opening into the locking portion of the seal, thereby protecting it against any attempt to tamper with or unlock the device.

Another object is to provide a suitable locking key which may be numbered or otherwise marked to correspond with a similar mark on the locking loop,—the purpose being to provide means whereby a check and record may be kept upon the seals issued and the fact that they have been actually put in commission. The construction being such that the key cannot be removed from the locking device until actually locked, which operation automatically releases the key after which the key cannot be again inserted in the locking device. The disengaged key is then returned to the issuing office, the number or other mark on the key serving to indicate the fact that the seal of which it was at one time an integral part, has been actually put into service.

Other advantages and improvements will hereafter appear.

In the drawings: Figure 1 is a perspective view of the device as it would appear when the free end of the locking loop is inserted in the barrel of the seal and in a position to be locked. Fig. 2 is a detail sectional view through the barrel of the seal, showing the manner of supporting the locking key before the free end of the locking strip is locked within the barrel. Fig. 3 is an end view of the barrel, showing in full lines the position occupied by the key as indicated in Fig. 2, and in dotted lines the position to which the key is turned to engage the free end of the locking strip, in which position it is automatically released from the lock. Fig. 4 is a cross-sectional view through the barrel showing the rotatable locking device in the position it occupies before engaging the locking strip. Fig. 5 is a similar view showing the position of the rotatable locking device when engaged with the locking strip. Fig. 6 is a longitudinal section showing the strip, key, and parts of the barrel, separated to more clearly disclose their construction. Fig. 7 is an end and side elevation of the locking device. Fig. 8 is a side elevation of the locking strip shown in Figs. 1, 2, and 6. Fig. 9 is a sectional view showing a modification of the locking strip. Fig. 10 is an edge elevation of the locking strip shown in Fig. 9. Fig. 11 is a side elevation of the same.

Referring now to the letters of reference placed upon the drawings: A is a flexible strip of sheet metal, one end of which is initially secured within the barrel B of the locking device by means of wings *a* cut from the body of the strip and spread angularly so as to engage the end wall of the barrel after the strip is inserted through the slot *b* in the wall of the latter.

C is a rotatable locking disk having a Z-shaped slot *c*, indicated in Figs. 5 and 7, formed therein. The disk C is lodged within the barrel B and adjacent to the end wall *b'* of the latter. Through the slot *c'* of the Z-shaped opening and the slot *b* of the barrel B, the free end of the strip A projects;—the outwardly bent wings *a* of the strip serving to secure the other end within the barrel B.

c^2 are hooked portions formed by cutting away portions of the disk C.

c^3 is a radial slot cut in the locking disk C dividing the metal between the Z-shaped slot and the periphery of the disk, one arm of which is bent to form a spring dog c^4 adapted to engage a ratchet or counter sunk portion b^2 formed in the wall *b'* of the barrel B. I provide two depressions b^2 in the

wall of the barrel in order to insure the locking disk C being rotated in the proper direction to lock the seal; it being obvious that the spring dog c^4 will hold the disk when in its initial position against rotation except in the direction in which it should be turned in order to lock the seal.

D is a cup portion, its annular wall at the open end provided with ears d designed to enter notches c^5 formed in the rotatable locking disk C,—the ears being bent when assembled with the disk to engage the latter making it a practically integral part of the cup portion D.

In order to secure the cup-shaped portion within the barrel B, the edge of the annular wall of the barrel is bent to form a flange b^3 overlapping the end wall d' of the cup portion D, as shown in Fig. 2, when the latter is inserted in the barrel B. In the end wall d' of the cup D is a kerf d^2 formed by indenting the wall. This kerf d^2 is designed to receive the entering end of a key E or other suitable instrument employed to rotate the cup D within the barrel B. As shown in Fig. 3, the flange b^3 of the barrel is cut away on each side, as indicated at b^4,—the portion cut away corresponding in width to that of the kerf formed in the cup portion D. The object of cutting the flange away as indicated is to provide for releasing the operating key E which is formed with ears e projecting from the edge of the key beneath the flange b^3 of the barrel. When in its initial position and before the barrel is rotated, the key occupies the position shown in full lines in Fig. 3; upon rotating the barrel a quarter turn, the key occupies the position shown in dotted lines and the key may then be released through the slots b^4.

At the free end of the strip A is a slot a^2 corresponding in size with the slot a' at the opposite end of the strip.

a^3 and a^4 are indentations formed in the strip each being respectively located at an equal distance from the slots a' and a^2. Upon looping the strip back upon itself after engaging it with the door fastening or other object under seal, the free end is first pushed through the slot b in the end of the barrel until the indentations a^3 and a^4 register with each other, this indicates that the slots a' and a^2 within the barrel register with each other and with the edges of the hooked portions c^2 of the locking disk C.

In the modifications shown in Figs. 9, 10, and 11, the flexible strip A is formed with a short return bend or hook portion A^2,—and a right angle bend A^3,—to limit the further entry of the strip within the barrel B, as indicated in Fig. 9. Struck up from the hooked portion and from the body of the strip and set at an angle to the same, are wings a, a' to lock the end of the strip within the barrel when inserted therein. The advantage of this construction over that previously described, is that the strip and locking barrel may be assembled at any time after the cup and barrel portions of the device have been first put together. The hooked portion of the strip acting as a spring provides means whereby when that end of the strip is subsequently forced through the slot in the barrel,—the wings after passing the end wall of the latter, will spring out so as to encounter the wall of the barrel on any attempt being made to withdraw the strip therefrom.

Having thus indicated the several parts by reference letters, the operation of the device will be readily understood. To place the car door, or other object, under seal the free end of the strip A is engaged with the parts to be sealed in the usual manner and bent back upon itself and its end inserted through the slot b of the barrel B and the slot c' of the Z-shaped opening in the locking disk. The strip being forced in until the indentations a^3 and a^4 of the strip A register, thereby denoting that the slots a' and a^2 are in line with each other and with the hooked portion c^2 of the rotatable disk C. The cup D is now rotated by means of the key E. The disk C being practically an integral part of the cup portion D, upon rotating the latter, the hooked portions c^2 are caused to enter the slots a' and a^2 in the strip thereby securing the free end of the strip within the barrel. At the same time the hooked portions c^2 of the disk closes the opening b through the end of the barrel thereby protecting it against the entry of any instrument designed to tamper with the locking mechanism. As indicated in Figs. 3 and 5, a quarter revolution of the locking disk serves to engage its hooked portion with the strip and at this point the spring dog c^4 of the disk enters the ratchet depression b^2 in the end wall b' of the barrel, thereby locking the disk C against a reverse rotation should an attempt be made to disengage the strip. Upon the cup portion D being given a quarter revolution, the key E,—which up to this time has been supported in the barrel by means of the flange b^3 of the barrel overlapping the ears e of the key,—is now brought to the position indicated in dotted lines in Fig. 3 at which point the flange portion b^3 is cut away as indicated at b^4 for the purpose of releasing the key which is thus automatically disengaged from the barrel. It will now be understood that the operating key having been removed, that fact will indicate to all observers that the seal is locked.

As shown in Fig. 2, I propose to number or otherwise provide the flexible strip and the locking key with corresponding numbers or marks, in order that the issuing office may have means for checking the cars sealed and

proof,—indicated by the return of the key,—that the seals corresponding with the numbers on the keys returned have been actually put into commission.

Having thus described my invention, what I claim is:—

1. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, an outer case slotted to receive the ends of said strip, a rotatable locking member inclosed within said case slotted for the passage of the flexible strip and provided with hooks adapted to enter the slots in said strip, means initially supported partially within the outer case for rotating said locking member, said means adapted to be automatically released from said case upon actuating the locking member to lock the ends of the strip within the case.

2. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, an outer case slotted to receive the ends of said strip, a rotatable locking member inclosed within said case slotted for the passage of the flexible strip and provided with hooks adapted to enter the slots in said strip, and a key adapted to be initially supported partially within said case for rotating said locking member and to be released therefrom only upon a predetermined rotation of the locking member.

3. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, an outer case slotted to receive the ends of said strip, a rotatable locking member inclosed within said case slotted for the passage of said strip and provided with hooks adapted to enter the slots in said strip, a key adapted to be initially supported partially within said case, and a cup-shaped portion secured to the locking member and provided with a kerf adapted to receive the end of said key, said outer case adapted to release said key from the kerf of the cup-shaped portion only upon a predetermined rotation of the locking member.

4. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, an outer case slotted to receive the ends of said strip, the rotatable locking member inclosed within said case, slotted for the passage of the flexible strip and provided with hooks adapted to enter the slots in said strip, a cup-shaped portion secured to the rotatable locking member its wall formed with a kerf designed to receive a key, and the key adapted to be supported in said kerf to be released therefrom only upon a predetermined rotation of the locking member.

5. In a seal, a flexible strip slotted at each end, a cylindrical case having an opening in its end wall adapted to receive the ends of the strip, a rotatable locking member inclosed in said case, said member provided with hooks adapted to enter the slots in said strip whereby said strip may be locked within the case, a cup-shaped portion secured to said locking member and provided with a kerf to receive the ends of an operating key and means whereby said operating key may be initially supported in said case and subsequently released upon the rotation of said locking member.

6. In a seal, a flexible strip slotted at each end, a cylindrical case having an opening in its end wall adapted to receive the ends of the strip, a rotatable locking member inclosed in said case, a cup-shaped portion secured to said rotatable member and provided with a kerf to receive the end of an operating key, the open end of said case flanged to secure the end of said rotatable locking member and the operating key, said flange slotted to release said key upon a predetermined rotation of the locking member, said rotatable member slotted for the passage of the ends of said flexible strip, and provided with hooks adapted to enter the openings in the strip to lock the latter within the case.

7. In a seal, a flexible strip slotted at each end, a cylindrical case having a slot in its end wall adapted to receive the ends of the strip, a rotatable locking member inclosed in said case, the open end of said case flanged to secure the rotatable locking member within the same, a cup-shaped portion secured to the rotatable member and provided with a kerf to receive the end of an operating key, said rotatable member slotted for the passage of the ends of said strip, the key, and means whereby the key is held in position within the outer case until the member is rotated as predetermined.

8. In a seal, a flexible strip provided at one end with angularly set wings struck up from its body portion, an inclosing case slotted for the passage of said strip within which the winged portion of the strip is housed, said strip also provided with slots at each of its ends through which a locking member is designed to pass, a rotatable locking member inclosed within said case slotted for the passage of said strip and provided with hooks adapted to pass through the openings in said strip, a cup-shaped portion secured to said member adapted to receive an operating key, the key, means for securing the key in operating relation with said cup-shaped portion prior to the operation of said member, means whereby said key is automatically released upon the operation of said locking member, and means for securing said locking member against a reverse movement of the latter when once operated, substantially as described.

9. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, an outer case slotted to receive the ends of said strip, a rotatable looking member inclosed within said case slotted for the passage of the flexible strip and provided with hooks adapted to enter the slots in said strip a cup-shaped portion secured to the locking member and adapted to receive an operating key, the operating key, means for supporting said key within the case prior to the operation of said locking member, means for releasing said key upon the operation of the latter, said locking member also provided with a spring dog adapted to engage a ratchet depression formed in the outer case whereby upon operating said locking member it is secured against a reverse rotation, substantially as described.

10. In a seal, a flexible strip, a cylindrical outer case adapted to be initially engaged with one end of said strip, a cup-shaped portion inclosed within the outer case provided with a kerf formed in its end wall designed to receive the end of an operating key, the key, said outer case flanged over the cup-shaped portion to secure the same and the operating key within the case, said flanged portion slotted to release the key upon a predetermined rotation of the cup-shaped portion, a locking disk secured to the end of the cup-shaped portion slotted for the passage of the strip and formed with hooks designed to pass through the openings in said strip to lock the same within the case, said locking disk also provided with a spring dog integral therewith designed to engage a ratchet depression in the outer case, said flexible strip provided with angularly set wings spread so as to encounter said locking disk within the case, and a suitable indentation formed in each end of the strip at a like distance from the slots serving to register said slots with each other within the case, substantially as described.

11. In a seal, a cylindrical case slotted for the passage of a flexible strip, a locking member inclosed within said case adapted to be actuated by an operating key, means to support said key within the case until said locking member is given a predetermined rotation, means for releasing the key upon said locking member being given said predetermined rotation, a flexible strip slotted at each end for the passage of said locking member, one end of said strip provided with a return bend and having spreading wings adapted to engage the wall of said locking member to secure the end of the strip within the case, substantially as described.

12. In a seal, a cylindrical case slotted for the passage of a flexible strip, a locking member inclosed within said case adapted to be actuated by an operating key, means to support said key within the case until said locking member is given a predetermined rotation, means for releasing the key when said locking member is rotated as predetermined, and a flexible strip slotted at each end for the passage of said locking member, one end of said strip provided with a return bend and having spreading wings adapted to engage the wall of said locking member to secure the end of the strip within the case, said strip also provided with a right angle bend to limit the distance entered by the strip within the case, substantially as described.

13. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, a cylindrical case slotted for the passage of the flexible strip, a rotatable locking member inclosed within said case, slotted for the passage of the flexible strip and adapted to be actuated by the end of an operating key, means for supporting said operating key within the case, means for releasing the key upon operating the locking member, and a corresponding identifying mark attached to both the flexible strip and to the operating key, substantially as described.

14. In a device of the class described, a flexible sealing strip slotted at its ends to receive a rotatable locking member, an outer case slotted to receive the ends of said strip and provided with a ratchet depression, the rotatable locking member provided with a Z-shaped slot adapted for the passage of the flexible strip and to form hooks designed to enter the slotted openings through said strips, said wall also provided with a spring dog integral therewith designed to enter said depression in the outer case, a cup-shaped portion secured to the rotatable locking member having a kerf designed to receive the end of an operating key, said outer case flanged to secure the locking member and its connecting cup-shaped portion within the same, said flanged portion notched to release the operating key, and the operating key provided with projecting ears designed to initially underlie the flanged portion, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

ANTHONY W. LOSHBOUGH.

Witnesses:
GRACE E. WYNKOOP,
SAMUEL E. THOMAS.