

No. 637,860.

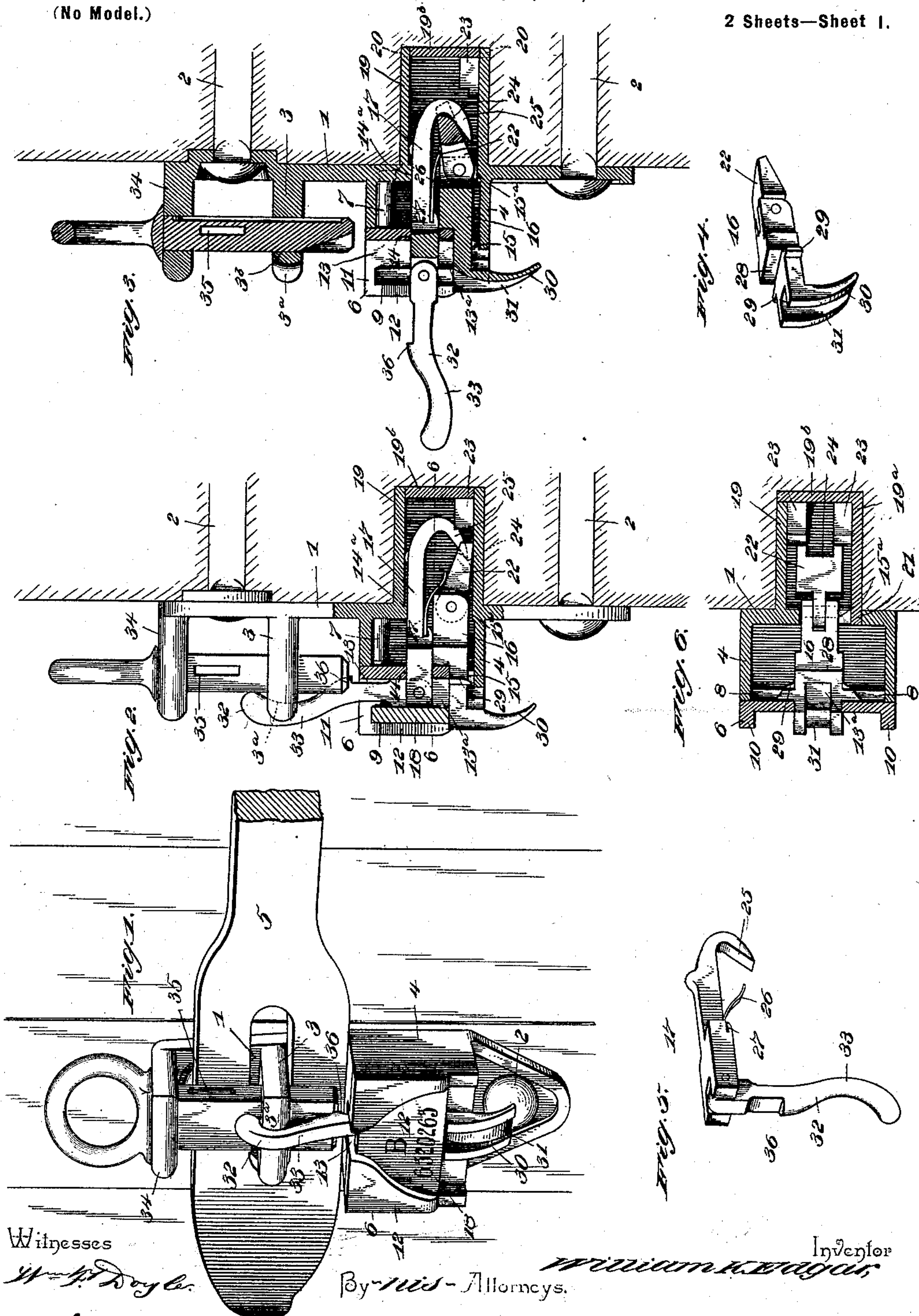
Patented Nov. 28, 1899.

W. K. EDGAR.  
SEAL LOCK.

(Application filed July 11, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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Inventor  
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By *his* - Attorneys.

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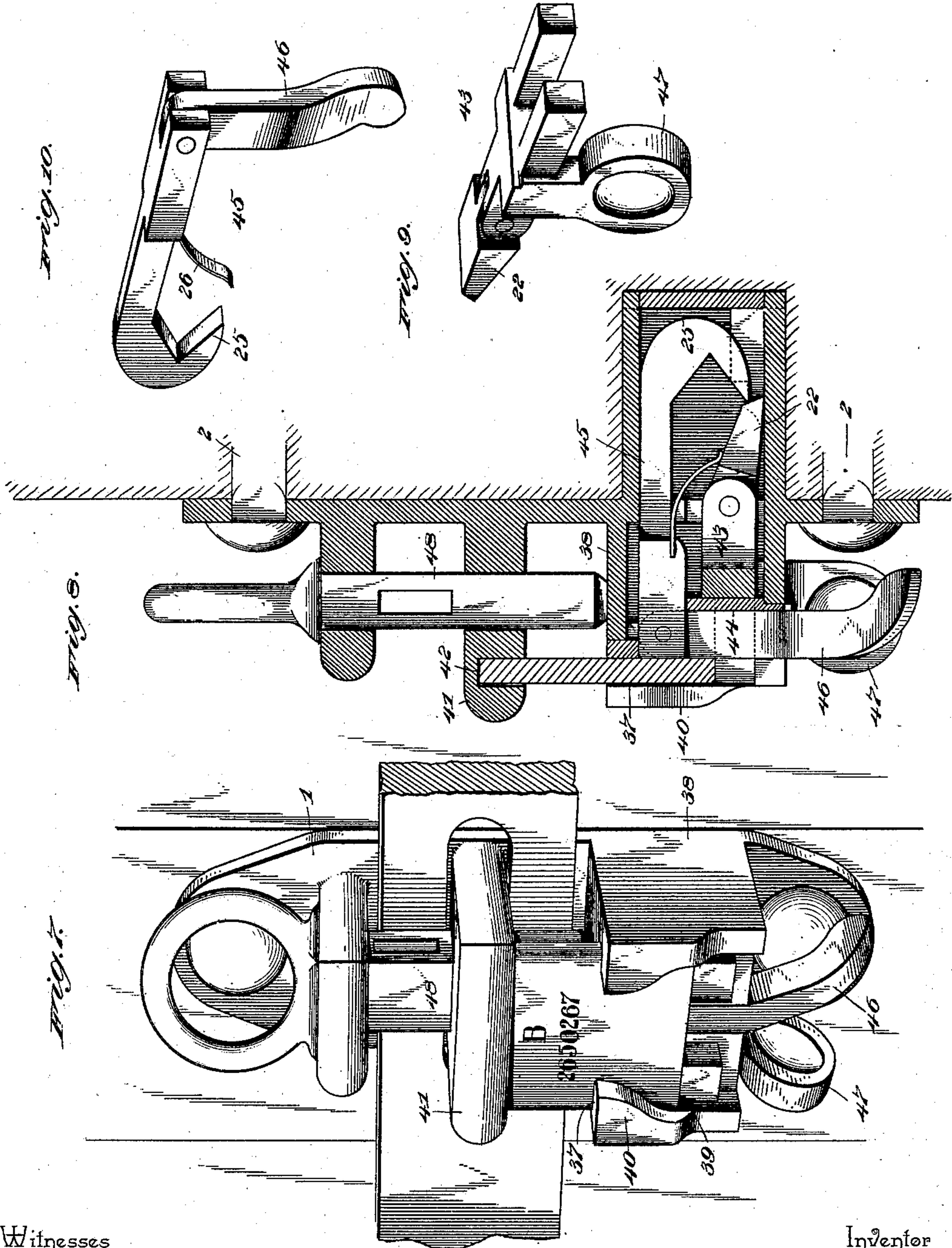
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Witnesses

*W. H. Doyle*

*[Signature]*

By *his* Attorneys,

*William K. Edgar*

Inventor

*Chas. Snow & Co.*



# UNITED STATES PATENT OFFICE.

WILLIAM KERR EDGAR, OF COLORADO SPRINGS, COLORADO.

## SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 637,860, dated November 28, 1899.

Application filed July 11, 1898. Serial No. 685,641. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM KERR EDGAR, a citizen of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented a new and useful Seal-Lock, of which the following is a specification.

My invention relates to seal-locks adapted for use in securing freight and other car doors; and it has for its object to provide a lock of a simplified and improved construction employing a frangible seal, the special aim of my present invention being to so construct a seal-lock as to make its operation obvious, whereby no difficulty will be experienced by those unacquainted with the mechanism thereof in manipulating the lock after the seal has been broken.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a seal-lock constructed in accordance with my invention. Fig. 2 is a vertical central section of the same, showing the parts in their normal or locked positions. Fig. 3 is a similar view showing the trip or releasing pin advanced to release the locking-pin. Fig. 4 is a detail view of the locking-pin detached. Fig. 5 is a similar view of the trip or releasing pin and the movable seal-breaking lever. Fig. 6 is a transverse section on line 6-6 of Fig. 2. Fig. 7 is a perspective view of a slightly-modified construction of lock embodying the essential features of that shown in Figs. 1 to 6. Fig. 8 is a vertical sectional view of the same. Fig. 9 is a detail view of the locking-pin shown in said modified construction of lock. Fig. 10 is a similar view of the trip-pin and attached lever.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The lock embodying my present invention includes a base-plate 1, provided with suitable bolt-holes for engagement by securing-bolts 2 and also provided at an intermediate point with a preferably integral staple 3 and a spaced enlargement 4, which is also by preference integral with the base-plate, the in-

terval between said staple and the contiguous side of the enlargement being of sufficient width to receive one side of a hasp 5, engaging the staple, the hasp forming that member of the lock which is usually attached to a car-door. The enlargement 4 in the construction illustrated is hollow or is provided with a cavity covered by a removable cap 6, held in place by securing-screws 7, which pass through the base-plate from its rear side and engage threaded openings in bosses 8, projecting inwardly from the cap, but which may be held in place by any other equivalent concealed means inaccessible from the front of the lock when the latter is in place upon a car-door frame.

In the cap which forms the removable member of the enlargement 4 is formed a seal-seat 9, having an open lower side, side and top flanges 10 and 11, and overhanging and partially-covering flanges 12, said top flange 11 being kerfed or divided at a central point in alinement with a depressed lever seat or channel 13, which is formed in the seal-seat in communication with a guide-opening 14, located at or near the center of the seal-seat. Said channel 13, which is located above the guide-opening 14, forms an upper lever-seat, and below said guide-opening is formed an extension 13<sup>a</sup>, constituting a lower lever-seat, and which in turn is in communication with a second guide-opening 15.

Mounted in the lower guide-opening 15 and a registering guide-opening 15<sup>a</sup>, formed in the rear wall of the casing, or, in other words, in the base-plate, is a locking-pin 16, capable of a limited reciprocatory movement in a direction perpendicular to the plane of the base-plate and mounted in said guide-opening 14, and in the registering guide-opening 14<sup>a</sup>, formed in the rear wall of said casing or in the base-plate, is a trip or releasing pin 17. The locking and releasing pins are adapted to project at their front ends beyond the plane of the front surface of the cap, or, in other words, to project into the seal-seat, the locking-pin being so positioned with relation to the other parts of the apparatus as to be extensible below the lower edge of a frangible seal 18, fitted in said seat, while the normal position of the trip or releasing pin is with its front end flush with the floor of the seal-seat,



whereby when the seal is in place in the seat it maintains the trip or releasing pin in said normal position or repressed. Also the locking-pin and releasing-pin extend rearwardly beyond the plane of the base-plate into the hollow casing extension 19, of approximately tubular form, of which the body portion is preferably formed integral with the base-plate. In the construction illustrated this tubular casing extension, which extends rearwardly from the base-plate and which is adapted to be countersunk in the car-frame when the lock is in its operative position, has a removable wall-section 19<sup>a</sup>, which carries an end plate 19<sup>b</sup>, said removable section being interlocked with the body portion of the extension by means of studs or ears 20 on the latter engaging notches in the former and an ear 21 on the former engaging a suitable opening in the base-plate, and by swaging the ends of the ears or projections 20 the removable section of the casing extension may be securely fastened. The locking-pin carries a pivotal locking-pawl 22 for engagement with a shouldered projection or ratchet 23, formed rigidly on one wall of the tubular extension and preferably cast integral therewith, said pawl being provided at an intermediate point with a cam-surface 24, with which is adapted to cooperate a cam extension 25, extending forwardly from the rear end of the trip or releasing pin, said releasing-pin carrying a pawl-actuating spring 26, which bears terminally against the pawl and is secured at the other extremity in a kerf 27 in the releasing-pin. Also the locking-pin is provided with a stop-shoulder 28 for contact with the inner surface of the cap of the casing and with lateral guard ears or flanges 29, which prevent the insertion of a thin instrument between the sides of the locking-pin and the walls of the guide in which it is fitted, to tamper with the pawl by which the locking-pin is held in its adjusted positions. In its repressed position the front end of the locking-pin is flush with the floor of the seal-seat, as also is the front end of the trip or releasing pin, thereby leaving the lower portion of the seal-seat unobstructed, whereby a seal of substantially the construction shown may be slid upwardly over the locking-pin until its lower edge reaches a position above the plane of the upper side of said pin. Then by drawing the locking-pin forward its front end projects beyond the plane of the floor of the seal-seat in the path of the lower edge of the seal and is locked by means of the engagement of its pawl with the shouldered ratchet. Inasmuch as the seal when in the position described covers the front end of the trip or releasing pin and holds the latter in its normal position, it will be seen that the locking-pin cannot be repressed to release the seal. In order to accomplish the release of the locking-pin, and hence its repression, it is necessary to draw the trip or releasing pin forward, and thus to cause the cooperation of the cam on the rear end thereof with the cam-

face of the pawl and withdraw the latter from engagement with the shoulders of the ratchet.

In order to facilitate the movement of the locking-pin to its normal or engaging position, I preferably provide it at its front end with a finger-hold 30, projecting downwardly beyond the lower side of the enlargement or casing 4, and also preferably grooved in its front face, as shown at 31, in alinement with the lever-seats formed in the floor of the seal-seat, whereby when the locking-pin is in its repressed position its channel forms a continuation of said lever-seats. After the arrangement of the seal in the seat, as above described, however, the breaking of the seal is necessary in order to allow the forward movement of the trip or releasing pin, and hence the release of the locking-pin, and in order to accomplish this breaking of the seal with facility I employ a seal-breaking lever 32, fulcrumed upon the front end of the trip or releasing pin and preferably in a bifurcation thereof, whereby when the releasing-pin is repressed or is in its normal position the seal-breaking lever is adapted to lie in either the upper or the lower lever-seat without projection beyond the plane of the floor of the seal-seat. Therefore with the seal-breaking lever in its normal position or extended upwardly, as indicated in Figs. 1 and 2, and with the locking-pin repressed a seal may be introduced into the seal-seat and the locking-pin advanced to secure the same therein. This positions the upper portion of the seal over the upper lever-seat which is occupied by the seal-breaking lever, and when it is desired to open the lock the said lever may be drawn forward into contact with the seal, and thus break the latter to allow the forward movement of the trip or releasing pin. In the construction illustrated in Figs. 1 to 6, inclusive, however, the lever 32 has a function in addition to that of breaking the seal, and in order to accomplish this function the lever is extended to form a locking-tongue 33, which spans the interval between the upper side of the casing or enlargement 4 and the staple 3, and preferably rests in an auxiliary lever-seat 3<sup>a</sup>, formed in the front end of the said staple. Thus the lever extension or tongue is arranged in the path of the hasp 5, which is engaged with the staple, and the hasp can be disengaged from the staple only by removing the lever. Inasmuch, however, as the lever cannot be removed from this position while the seal is arranged in the seal-seat, it is obvious that as long as the seal remains intact the hasp will remain in its locked position and that any attempt to forcibly remove the hasp will result in the breaking of the seal, and hence in the subsequent detection of the attempt to operate the lock without authority, provided the same was done with any fraudulent intention. Hence it will be seen that with the construction illustrated in Figs. 1 to 6 the locking-tongue, by which the hasp is held from dis-



engagement, extends under the seal and is held in its proper position thereby, that this tongue constitutes a means whereby the seal may be broken and displaced when it is desired to open the lock, and, furthermore, that said tongue constitutes a movable handle whereby the trip or releasing pin may be drawn forward after the displacement of the seal to disengage the locking-pin, said locking-pin, however, serving only to maintain the seal in place in the seal-seat.

In order to avoid the breaking of the seal by the accidental straining of the locking tongue or lever, as by the jarring or straining of the hasp, I preferably employ an auxiliary locking-bolt fitted in a suitable opening 3<sup>b</sup> in the staple 3 and in a registering opening formed in an ear 34, projecting forwardly from the upper end of the base-plate, and in order that the lock embodying my invention may be used upon lines not supplied with the frangible seals necessary for carrying the same into effect this locking-bolt is provided with a transverse seal-slot 35, adapted for the reception of the ordinary pliable or tin seal.

It will be seen that with the construction illustrated in Figs. 1 to 6 it is necessary, in order to insure the security of the lock, that the lever or locking-tongue should extend upwardly to span the interval between the enlargement 4 and the staple, or, in other words, should extend over the hasp, and hence it is necessary to provide means for preventing the insertion of the seal while the said lever or tongue is in any other position—as, for instance, in its depending position. This I accomplish by providing the lever or tongue upon its reverse or normally rear side with a projection or enlargement 36, which when the lever is in its pendent position projects forward beyond the plane of the floor of the seal-seat. In order, however, to protect the lever or tongue against displacement or injury while in its inoperative or pendent position, I provide the above-described registering channels 13<sup>a</sup> and 31 in the seal-seat floor and the front side of the finger-hold. These registering channels brace the lever against lateral strain, as do the walls of the upper lever-seat and the auxiliary lever-seat when the lever is in its normal or operative position.

The modified construction illustrated in Figs. 7 to 10, inclusive, is substantially the same as that shown in Figs. 1 to 6, except that the seal-breaking lever does not perform the function of locking the hasp, or, in other words, does not constitute a locking-tongue. The difference will be understood from the following description. The seal-seat 37, which is formed in the cap or removable member of the enlargement or casing 38, while provided with lateral flanges 39 and overhanging flanges 40, is open at its upper and lower sides to allow the seal to extend upwardly above the plane of the upper side of said enlarge-

ment or casing and span the interval between the enlargement or casing and the staple 41, and the under side of the staple is provided with an auxiliary seal-seat 42 to receive the upper edge of the same. Thus the seal in the modified construction performs the function of retaining the hasp in engagement with the staple, or, in other words, is arranged in the path of the disengaging movement of the hasp. The seal is insertible into the seal-seat through the lower end thereof, as in the preferred construction, and is held in its operative position by means of a locking-pin 43, which, however, is preferably bifurcated at its front end to form separated tongues, which project through separate openings in the floor of the seal-seat. Between the separated tongues at the front end of the locking-pin is arranged a lever-seat 44, which communicates with the guide of the trip or releasing pin 45, said trip or releasing pin and locking-pin being constructed substantially as hereinbefore described in connection with the preferred form of the device, and hence requiring no further detailed description. The seal-breaking lever 46 is pivotally mounted upon the front end of the trip or releasing pin to normally lie in said downwardly-extending lever-seat between the planes of the tongues of the locking-pin, and it preferably projects below the lower side of the enlargement or casing to facilitate the manual grasping thereof to break the seal and subsequently draw the trip or releasing pin forward to disengage the locking-pin. The movement of the locking-pin to engage the seal after the arrangement of the latter in the seat is accomplished by means of a finger-hold 47, projecting through a slot in the lower wall of the enlargement or casing and attached directly to or formed integral with the locking-pin. In this modified form of my invention I also preferably employ an auxiliary locking-bolt 48 for preventing the straining of the seal, which is disposed in the path of the hasp.

From the foregoing description it will be seen that while the parts of the lock are so relatively positioned as to necessitate the displacement of the seal in order to release the hasp neither the seal nor a substitute thereof can be introduced with the parts of the lock in any other than their proper positions without rendering the detection of the fraud obvious. One reason for this is that the locking-pin by which the seal is held in place is exposed below the plane of the lower edge of the seal, and hence is in plain view of an inspector.

A further advantage of the improved construction resides in the fact that a person unacquainted with the construction of the lock finds no difficulty in opening the same without any instruction. It frequently happens in practice that agents on roads not using a special form of seal-lock or draymen or others unacquainted with the construction of the



lock are required to open a car, and hence it is desirable that the operation thereof shall be obvious. With the construction illustrated it will be seen at once that in order to release the hasp it is necessary first to displace the auxiliary locking-bolt, as in the ordinary practice. This being accomplished, the forcible forward movement of the hasp will swing the locking tongue or lever of the preferred construction out of the way, and thus break the seal of the construction illustrated in Figs. 1 to 6, or will destroy the seal of the construction illustrated in Figs. 7 to 10, thus relieving the operator of any annoyance and avoiding the necessity of experimenting with the lock in order to release the hasp.

A further advantage of the construction herein described resides in the fact that in order to remove the seal it is unnecessary to strike the same with a hammer or other instrument. The means for breaking the seal is carried by and forms a part of the lock, and the breaking of the seal is not accompanied by any risk of injury to the lock, as when it is necessary to strike the same with a hammer or other instrument. Furthermore, the breaking of the seal can be accomplished without any special movement upon the part of the operator to that effect. In other words, after the displacement of the auxiliary locking-bolt the forcible removal of the hasp from the staple will simultaneously destroy the seal. Moreover, it should be observed that the hasp locking or holding arm 32 while being capable of movement to release the hasp, said movement being in the direction in which the hasp moves to remove it from the staple, is by that movement caused to intersect the seal-seat, or, in other words, as the said arm is moved to allow the disengagement of the hasp it intersects the seal-seat, and hence brakes the seal which is arranged in said seat. The advantage of this construction resides in the fact that when it becomes necessary to open a car the operator is not forced to grasp the projecting portion of the arm 32, and thus move it to break the seal, particularly if the seal should be of such resistant quality as to require special exertion; but, on the other hand, after removing the locking-bolt the end of the hasp may be grasped, or the blade of a hatchet or screw-driver or other tool may be introduced between the hasp and the wall of the car to force the hasp outward, and thus impart seal-breaking movement to the arm 32. In other words, that movement of the arm 32 which is necessary to break the seal is the same as that which is necessary to release the hasp, and therefore said arm 32 may be operated by forcibly drawing the hasp outward in the act of disengaging it from the staple.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A seal-lock for a hasp, having a seal-seat, a frangible seal adapted to be secured in said seat, and an outwardly-movable hasp-locking arm normally arranged in the path of movement of the hasp and between the said hasp and seal; the seal being breakable by an outward pressure of the hasp-locking arm on the seal instituted by an attempt to release the hasp.

2. A seal-lock for a hasp, the same having a stationary seal-seat, and means for securing a seal in place therein, and a pivotal hasp-locking lever normally arranged in the path of a hasp, and mounted for swinging movement in a path intersecting the seal-seat, and held against movement, in a direction to release an engaged hasp, by a seal fitted in said seat, substantially as specified.

3. A seal-lock for a hasp, the same having a stationary seal-seat, and means for securing a seal in place therein, and a pivotal seal-displacing and hasp-holding lever, arranged in the path of disengaging movement of the hasp and mounted for swinging movement in a path perpendicular to the plane of and intersecting the seal-seat, and held against hasp-releasing movement by a seal fitted in said seal-seat, that portion of the lever which is arranged in the path of the hasp being exposed whereby it may be grasped manually to impart seal-breaking movement thereto, substantially as specified.

4. A seal-lock having a casing provided with a seal-seat, a seal-locking pin for securing a seal in said seat, a releasing-pin operatively connected with the seal-locking pin, and normally locked against operative movement by a seal arranged in the seal-seat, and a seal-breaking lever mounted upon the releasing-pin for swinging movement in a path intersecting the seal-seat, substantially as specified.

5. A seal-lock having a casing provided with a seal-seat, a seal-locking pin for securing a seal in said seat, locking devices for said seal-locking pin, a releasing-pin for disengaging the locking devices of the seal-locking pin, and normally locked against operative movement by a seal arranged in the seal-seat, and a seal-breaking lever mounted upon the releasing-pin for movement in a path intersecting the plane of the seal-seat, and normally held against forward movement by a seal fitted in said seat, substantially as specified.

6. A seal-lock having a casing provided with a seal-seat, a seal-locking pin for securing a seal in said seat, locking devices for said seal-locking pin, a releasing-pin for disengaging the locking devices of the seal-locking pin, and normally concealed and held against operative movement by a seal arranged in the seal-seat, and a pivotal seal-breaking lever mounted upon the releasing-pin and normally occupying a position in rear of the plane of a seal fitted in said seat, substantially as specified.



7. A seal-lock having a casing provided with a seal-seat, a seal-locking pin for securing a seal in said seat, locking devices for said seal-locking pin, a releasing-pin for disengaging the locking devices of the seal-locking pin, and mounted for movement intersecting the plane of the seal-seat, and held against operative movement by a seal fitted in the seal-seat, and a pivotal seal-breaking lever mounted upon the releasing-pin, for movement in a path intersecting the plane of the seal-seat, and extending terminally beyond the area of the seal-seat, substantially as specified.

8. A seal-lock having a casing provided with a seal-seat open at one edge to slidably receive a seal, a locking-pin mounted for movement at an angle to the plane of the seal-seat, for arrangement in the path of removal of a seal arranged in the seat, locking devices for said locking-pin, a releasing-pin for disengaging the locking devices of said locking-pin, and normally locked against operative movement by a seal arranged in the seal-seat, and a seal-breaking lever pivotally mounted upon the releasing-pin for movement in a path intersecting the plane of the seal-seat and normally arranged in rear of a seal fitted in said seat, substantially as specified.

9. A seal-lock having a casing provided with a flanged seal-seat, a locking-pin and a releasing-pin mounted for movement perpendicular to the plane of the seal-seat and adapted to be terminally disposed in the plane of the floor thereof, locking-pin-locking devices, in operative relation with which said releasing-pin is disposed, a finger-hold extending from the locking-pin beyond the open side of the seal-seat, and a seal-displacing lever fulcrumed upon the releasing-pin and normally seated in rear of the plane of the seal-seat floor, substantially as specified.

10. A seal-lock having a casing provided with a flanged seal-seat, a locking-pin and a releasing-pin mounted for movement perpendicular to the plane of the seal-seat, locking devices for the locking-pin, in operative relation with which said releasing-pin is arranged, and a seal-displacing lever fulcrumed upon the releasing-pin, the seal-seat being provided in its floor with a channel forming a lever-seat to brace the said lever against lateral displacement, substantially as specified.

11. A seal-lock having a staple for engagement by a hasp, a seal-seat occupying a fixed position with relation to the staple, movable means for securing a seal in the seat, and a pivotal arm spanning the path of a hasp engaged with said staple, and mounted for swinging movement in a path perpendicular to and intersecting the seal-seat, whereby a seal in the seal-seat is arranged in the path of

movement of said arm, substantially as specified.

12. A seal-lock having a casing provided with a seat having an open lower side, and side, top and overhanging flanges, and also provided in its floor with aligned upper and lower lever-seats and communicating guides, a locking-pin mounted in one of said guides for movement perpendicular to the plane of the seal-seat and having a finger-hold projecting beyond the area of the seal-seat and channeled in registration with the lever-seats, a trip or releasing pin mounted in the other guide for movement perpendicular to the plane of the seal-seat, locking devices for said locking-pin, in operative relation with which the trip or releasing pin is arranged, and a seal-displacing lever pivotally mounted upon the trip or releasing pin to occupy one of said lever-seats, substantially as specified.

13. The herein-described seal-lock having a base-plate, an integral casing having a removable cap, and a staple and ear also integral with the base-plate and provided with registering openings for a locking-bolt, said staple being spaced from the casing, concealed means for securing the casing-cap in place, a seal-seat formed in an exposed surface of the casing, a locking-pin and a releasing-pin mounted in the casing for movement perpendicular to the plane of the seal-seat, locking devices for the locking-pin, in operative relation with which said releasing-pin is arranged, and a seal-displacing lever fulcrumed upon the releasing-pin and normally occupying a position parallel with the seal-seat in rear of a seal fitted in said seat, substantially as specified.

14. A seal-lock having a casing provided with a seal-seat and a rearward extension, a locking-pin mounted for movement perpendicular to the plane of the seal-seat, a fixed ratchet in said extension, a locking-pawl mounted upon said locking-pin for engagement with the ratchet, said pawl having a cam-face, a trip or releasing pin mounted for movement perpendicular to the plane of the seal-seat and provided at its rear end within said extension with a cam for tripping the pawl, a pawl-actuating spring carried by the trip or releasing pin, and means for communicating motion to the trip or releasing pin for disengaging the pawl from the ratchet, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM KERR EDGAR.

Witnesses:

W. R. FISHER,  
J. D. ROLLINS.