(No Model.) 2 Sheets—Sheet 1.

E. H. LEA & W. B. MARKS.

SEAL LOCK.

No. 398,411. Patented Feb. 26, 1889.

Fig 1.

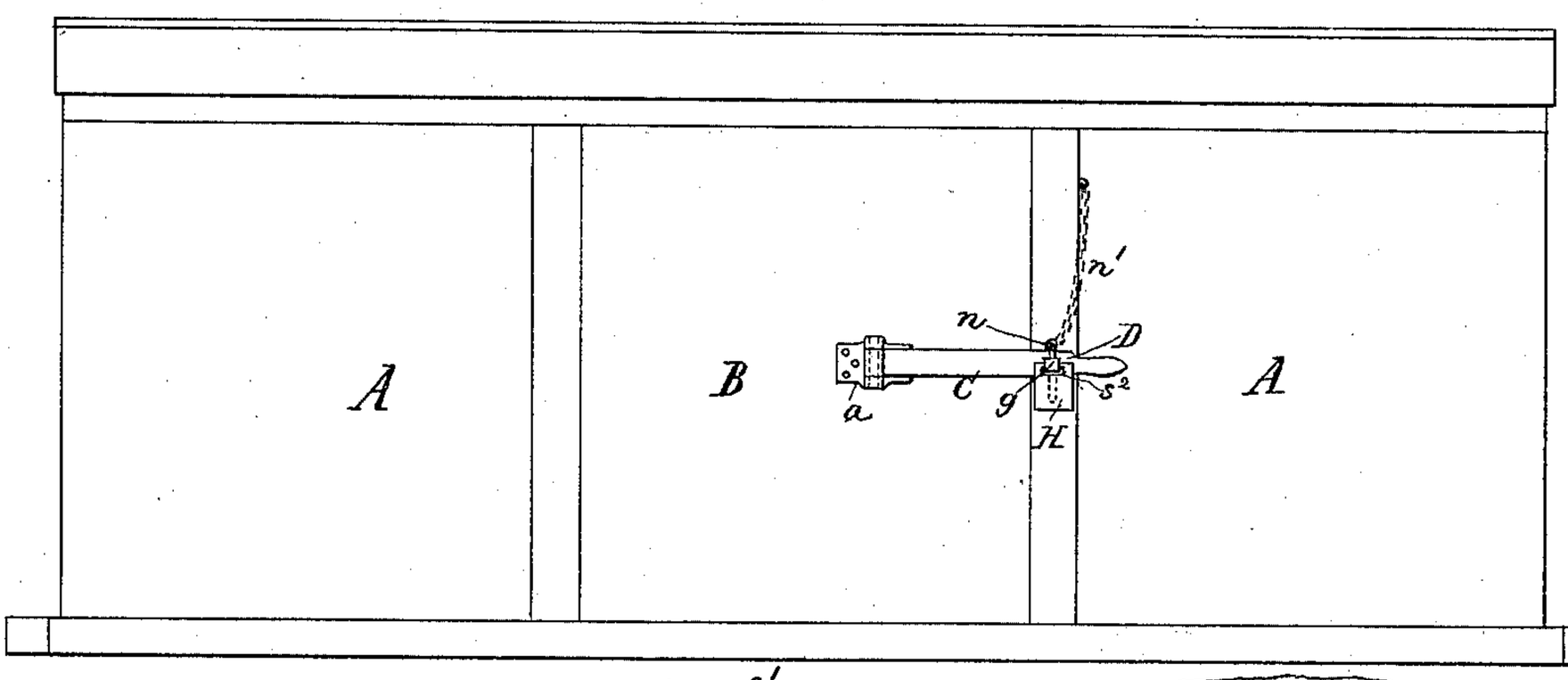

Fig 4.

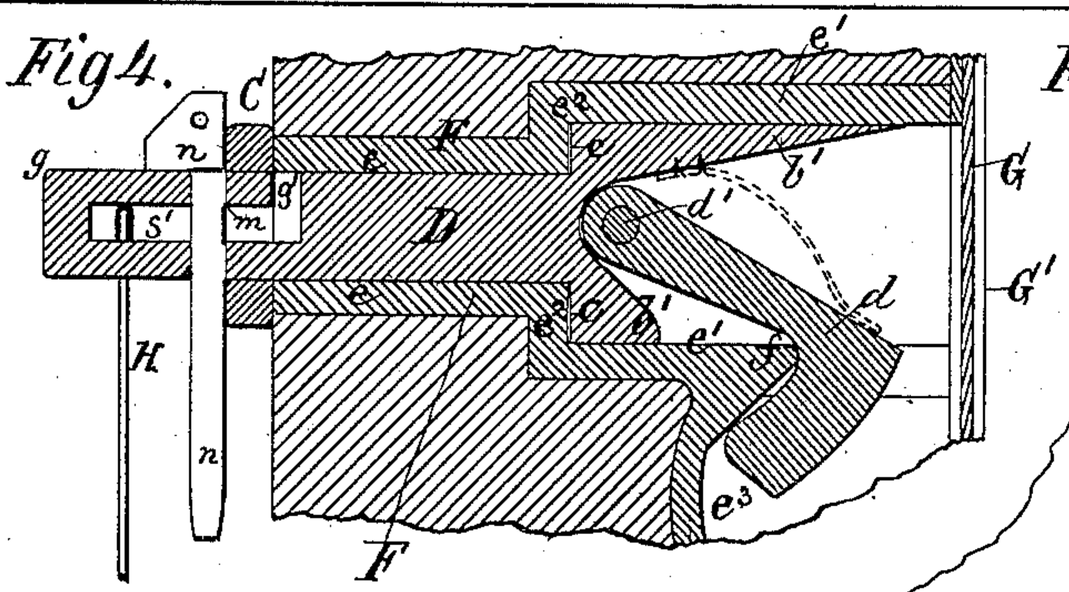

Fig 2.

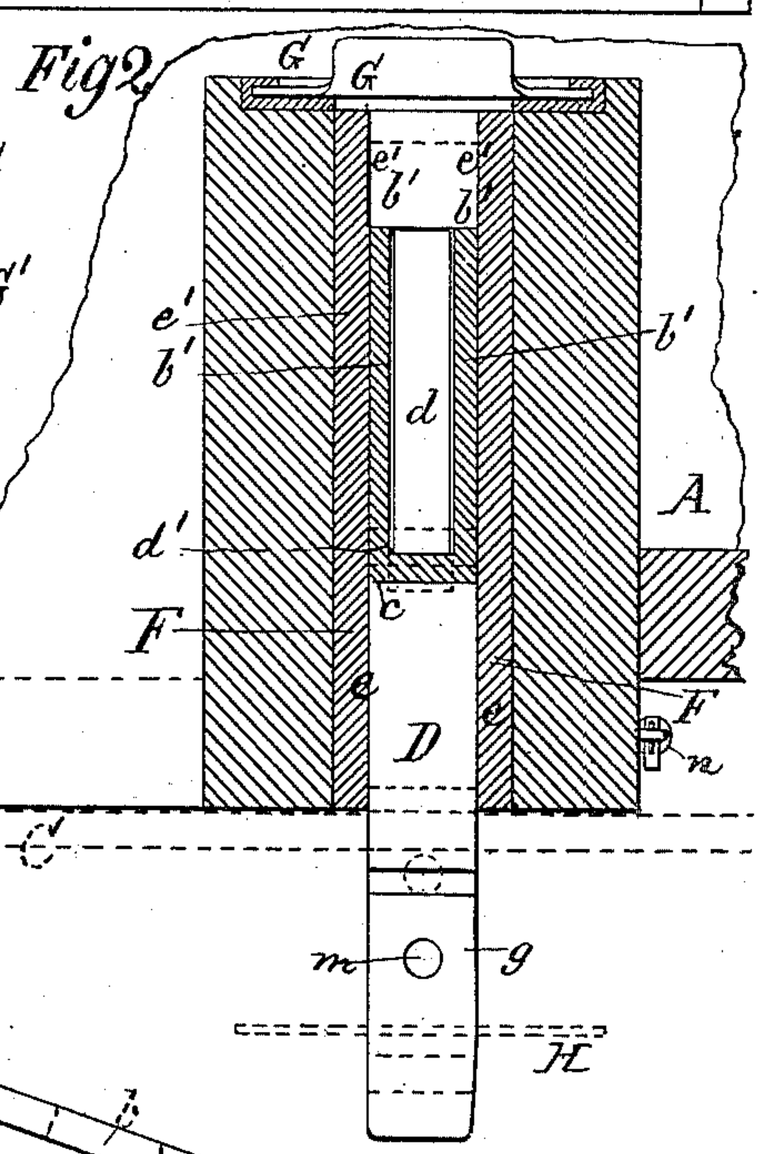

Fig 3.

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(No Model.) 2 Sheets—Sheet 2.

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SEAL LOCK.

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Fig 5.

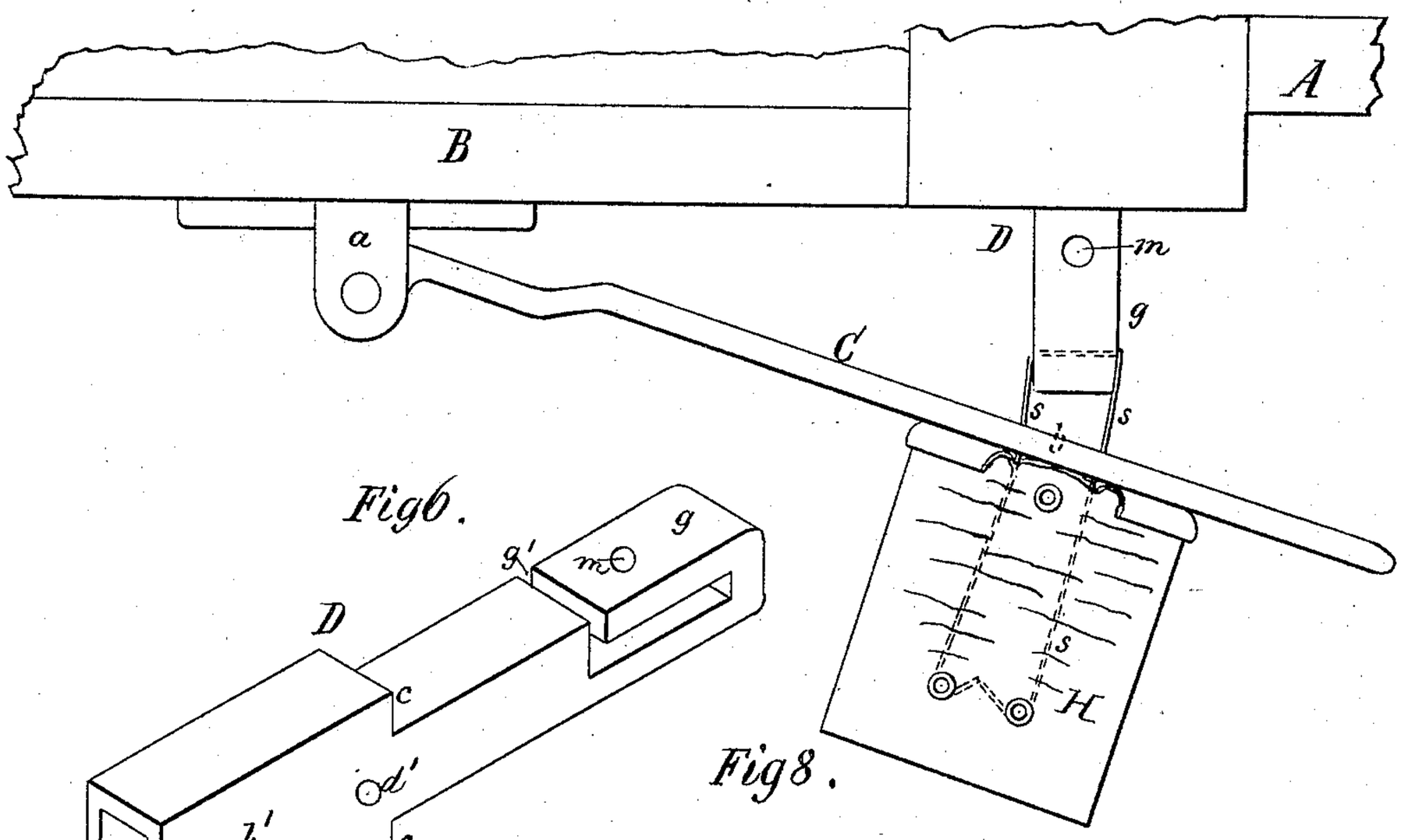


Fig 6.

Fig 8.

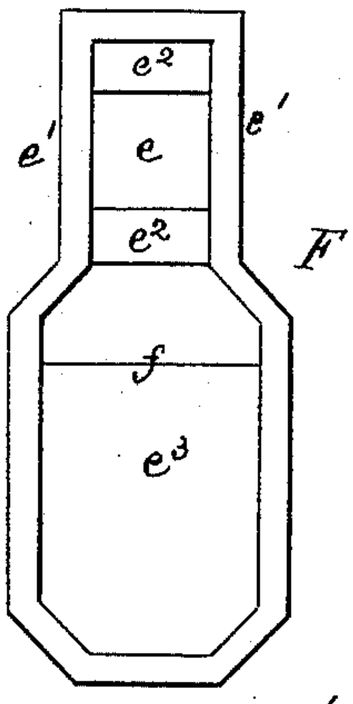
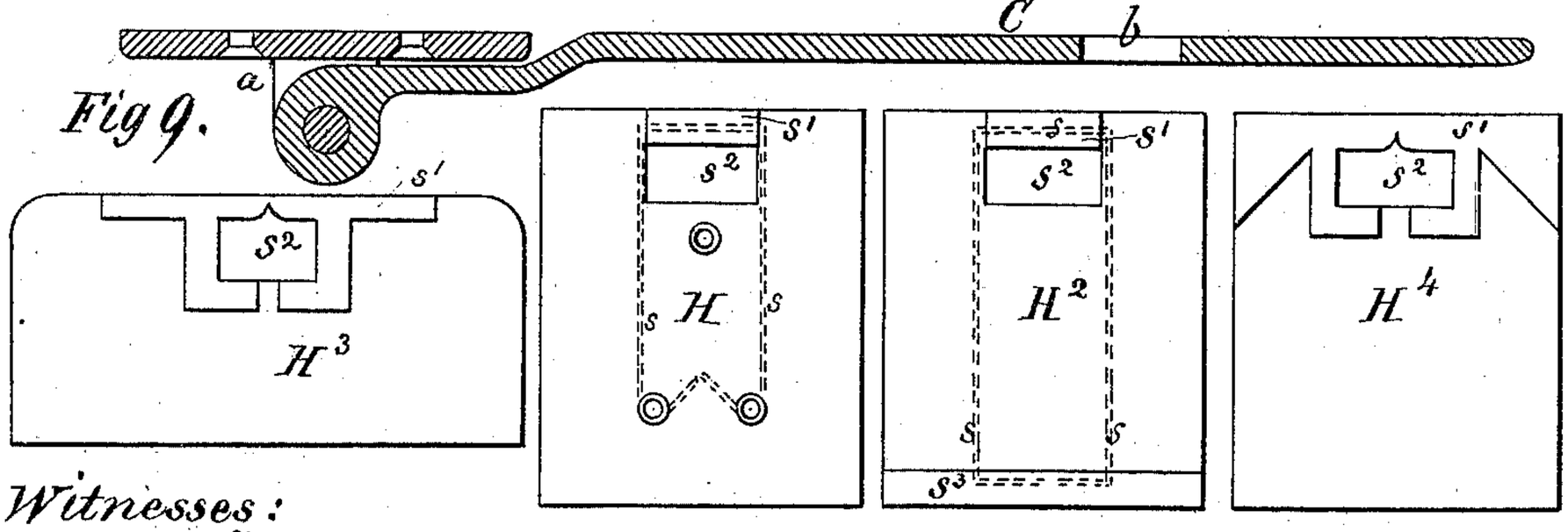


Fig 7.

Fig 9.



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UNITED STATES PATENT OFFICE.

EDWIN HOLMES LEA AND WALTER BOOTH MARKS, OF RICHMOND, VIRGINIA.

SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 398,411, dated February 26, 1889.

Application filed September 24, 1888. Serial No. 286,187. (No model.)

To all whom it may concern:

Be it known that we, EDWIN HOLMES LEA and WALTER BOOTH MARKS, citizens of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Seal-Locks for Freight or Postal Cars and other Vehicles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention consists in a novel construction of a locking sliding staple-bolt provided with a self-acting tumbler or retaining-pin, said staple-bolt serving both as a carrier and lock for a sealing-tag, in combination with an inside concealed safety-stop for the tumbler or retaining-pin, a hasp, and a sliding door of a car.

It also consists in a novel construction of sealing-tags, in combination with the hasp and locking sliding staple-bolt, whereby, in order to open the door of the car, the sealing-tag must be mutilated, whether the act is done by the sealer or superintendent of the car or by train-robbers, and such mutilation will show at once that the car has been opened, either authorizedly or otherwise, after having been closed and sealed.

It also consists in certain other novel constructions and combination of parts, as will be hereinafter described.

In the drawings, Figure 1 is a front elevation of a portion of a freight or postal car or other vehicle with our invention applied thereto. Fig. 2 is a horizontal section of the same, showing in full lines the door partly opened and the parts adjusted so as to permit it to be fully opened, the door, staple-bolt, the sealing-tag, and the hasp being shown by dotted lines in said figure as they appear when the car is closed and the seal locked. Fig. 3 is a vertical cross-section of the same, the sealing-tag being in place on the sliding staple-bolt, and all the parts ready for the staple-bolt to be pressed inward, and it and the seal thereby automatically locked by the staple-bolt tumbler or retaining-pin. Fig. 4 is a similar view to Fig. 3, the parts being adjusted to their closed and sealed positions and the hasp retained by an ordinary pin. Fig. 5 is a view illustrating the manner in which the sealing-tag is mutilated by pulling the hasp. Fig. 6 is a detail view of the staple-bolt. Fig. 7 is a detail view of the hasp and its hinge. Fig. 8 is a detail rear view of the safety-stop, and Fig. 9 shows several styles of sealing-tags which may preferably be employed.

A in the drawings may represent the body of a freight or postal car or other vehicle provided with a laterally-sliding door, B. Upon the door B a hasp, C, is hinged to a strong bracket, *a*, set at a convenient distance above the door-sill and fastened by concealed bolts or rivets in any appropriate manner. This hasp is formed with a slot, *b*, at its free end, so as to pass over my improved staple-bolt D, which, with other improved parts, will now be described. The staple-bolt D is of rectangular form, and at its front or outer end is provided with a loop, *g*, having an opening, *g'*, so as to receive and hold a sealing-tag, H, as illustrated, and its inner portion is vertically widened or enlarged, as at *b'*, and shouldered, as at *c c*, the enlarged portion being chambered and closed at its top and sides, but open at its rear end and bottom, as shown. Within the chambered portion a gravitating or spring-acting angular tumbler, *d*, is hung upon a pivot, *d'*, said tumbler moving upward in the chamber of the enlarged portion *b'* and downward through the open bottom thereof, in a manner plainly illustrated in the drawings. Instead of this special pivoted angular tumbler, any other equivalent gravitating or spring-acting automatic-locking holding device may be adopted and raised out of action by the hand, the same as the tumbler shown is adapted to be thus raised. This sliding staple-bolt is fitted within a metallic casing, F, set into one of the door-posts of the car. This casing is formed at its forward end with a rectangular tubular portion, *e*, corresponding to the front or smaller portion of the staple-bolt, and back of this portion it is enlarged, as at *e'*, and shouldered internally, as at e^2, thereby corresponding to the enlarged shouldered portion of the said staple-bolt, and on this enlarged portion, downwardly therefrom, a still further enlargement, e^3, is provided, so as to afford room for the downward movement of the locking-tumbler *d*, and also permit the

hand to be inserted for lifting the tumbler, or its equivalent, when it is desired to slide the staple-bolt outward for applying a sealing-tag or for any other purpose. This casing forms a stop, *f*, for the tumbler to catch against, and thereby prevent the staple-bolt being drawn outward unless its tumbler has been raised out of contact with the stop. It also forms a safety-guard for preventing access to the tumbler by burglariously cutting through the wood-work of the car from the outside. The end of the case is closed by a vertical slide, G, fitted in a guide-plate, G′, which is formed with an access-opening, as shown. This slide is intended to exclude sand, grain, and other substances from the chamber of the casing. The guide-plate also limits the back movement of the staple-bolt. Through the looped portion of the staple-bolt vertical coinciding passages *m* are formed for the insertion of the pin *n*, employed usually for retaining the hasp on the staple-bolt, said pin being hung to the car by a chain, *n′*, as shown.

The parts thus far described serve as a lock for the sealing-tag H and a fastening for the door, and the hasp can be used as a means by which to slide the door laterally, either for closing or opening it. When the door is closed and the sealing-tag locked, the parts occupy the position shown in Fig. 4, and when it is open and the tag unlocked the position shown in Fig. 3. For sealing the lock we have devised the tag H, formed with a destruction-wire re-enforce, *s*, in the form of a link or other suitable form, confined between pieces of cardboard or other fragile material united by eyeleting or otherwise, as shown. At the top of this tag a metal wearing and binding clasp, *s′*, is applied, and below the clasp a rectangular opening, s^2, is provided, so that the tag may be placed upon the loop of the staple-bolt.

The tags may be formed with metal clasps *s′* s^3 at top and bottom, as shown at H^2, and they may be formed with clasps which alone act both as a destruction re-enforce and a clasp by shaping the clasps as at H^3 H^4, thus dispensing with the wire-link re-enforce.

If a sealing-tag is placed upon the loop *g* of the staple-bolt D after the staple has been adjusted to its proper position on the loop, but before the bolt is slid inward to its locking position, and the staple-bolt is then slid inward so as to seal the entrance *g′* of its loop for the sealing-tag and allow the tumbler to automatically fall behind the retaining-stop, and thereby lock the staple-bolt, and the staple-retaining-pin *n* is inserted in the passages *m*, it will be impossible for the door to be opened without withdrawing said pin *n* and pulling the hasp off from the loop, in doing which the sealing-tag will be so torn or mutilated by the resisting action of the wire re-enforce *s* and clasp *s′* that an exposure of the act will surely occur. It will be understood that the loop-shaped wire re-enforce requires to be broken before the hasp can be separated from the loop of the staple-bolt. A very similar destruction of the sealing-tag will take place when a tag such as either H^3 or H^4 is used; but we prefer to employ either the tag H or H^2, formed with the link-shaped wire re-enforce *s* and clasp *s′* or with clasps *s′* s^2, as at H^2. Our invention, however, is not confined to any precise construction of re-enforce sealing-tags.

In order to get at the tumbler of the lock after the sealing-tag is removed and to unlock the staple-bolt, it is only necessary to swing the hasp off the loop of the staple-bolt, slide the door laterally, insert the hand, and lift the tumbler from the retaining-stop and slide the bolt outward the proper distance, and when thus adjusted a new sealing-tag can be applied and the parts readjusted in the manner before described.

Our invention is not confined to any special construction of destructible sealing-tag; but we prefer to use the kinds described, as they will manifest by their mutilated condition more fully the fact that the car has been opened.

From the aforegoing description it will be seen that our seal-locking mechanism combines an always positively-holding tumbler, which can be only operated from the inside of the car, a fixed retaining-stop, and an open-looped staple-bolt, and thus differs from an open-looped staple-bolt combined with a retaining-dog, which is not always positive, and can be operated from the outside of the car, and also differs from a bolt provided with a tag-holding pin and a pivoted and a fixed tag-holding jaw combined with a retaining-tooth and pawl operated from the inside of the car.

It will also be seen that our sealing-tag does not require to be provided with a metallic back plate and weakening perforations through it and the metallic plate, but that it is formed with two exposed paper surfaces re-enforced at the top or both at the top and bottom edges, and with a wire-loop re-enforce within the tag or between the layers of paper of which it is constructed, and therefore requires to be almost totally destroyed from top to bottom before it can be removed from the locking-bolt.

What we claim is—

1. In a seal-lock, in combination, the protection-casing having an access-opening at its rear end and formed with a fixed retaining-stop and adapted to be applied to the framing of a structure, the staple-bolt having an open loop, and a locking-tumbler adapted to be operated only from the inside of said structure, substantially as and for the purpose described.

2. In a seal-lock, in combination, the protection-casing having an access-opening at its rear end formed with internal and external shoulders and a fixed retaining-stop, the supporting-frame, the staple-bolt having an open loop, and a locking-tumbler adapted to be op-

erated only from the inside of the structure to which it is applied, substantially as described.

3. In a seal-lock, in combination, the protection-casing provided with a retaining-stop, a vertical open guide-plate, and a vertical slide, the sliding staple-bolt having an open loop and provided with a locking-tumbler adapted to be operated only from the inside of the structure to which it is applied, substantially as and for the purpose described.

4. In a seal-lock, in combination, the protection-casing having a fixed retaining-stop, the sliding staple-bolt having an open and perforated loop for a sealing-tag and a retaining-pin, and a locking-tumbler adapted to be operated only from the inside of the structure to which it is applied, the frame, sliding door, the hasp, and the retaining-pin of such structure, substantially as described.

5. In a seal-lock, in combination, a sealing-tag having an opening through it, a sliding staple-bolt having an open loop and provided with a locking-tumbler adapted to be operated only from the inside of the structure to which it is applied, the protection-casing having a fixed retaining-stop, the frame, the sliding door, and the hasp of such structure, substantially as and for the purpose described.

6. For a seal-lock, the sealing-tag formed of paper or other equivalent fragile material on both its front and rear sides, and having an opening through it, and provided at one or more of its edges with a narrow metallic clasping re-enforce, which in the main leaves both the paper surfaces uncovered, substantially as and for the purpose described.

7. For a seal-lock, the sealing-tag formed of paper or other fragile material, and having an opening through it, and provided with a metallic clasping re-enforce at one or more of its edges, and with a wire-loop re-enforce inclosed and secured within the sealing-tag, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

EDWIN HOLMES LEA.
WALTER BOOTH MARKS.

Witnesses:
CHAS. E. POTTS,
ROBT. R. FEILD.