

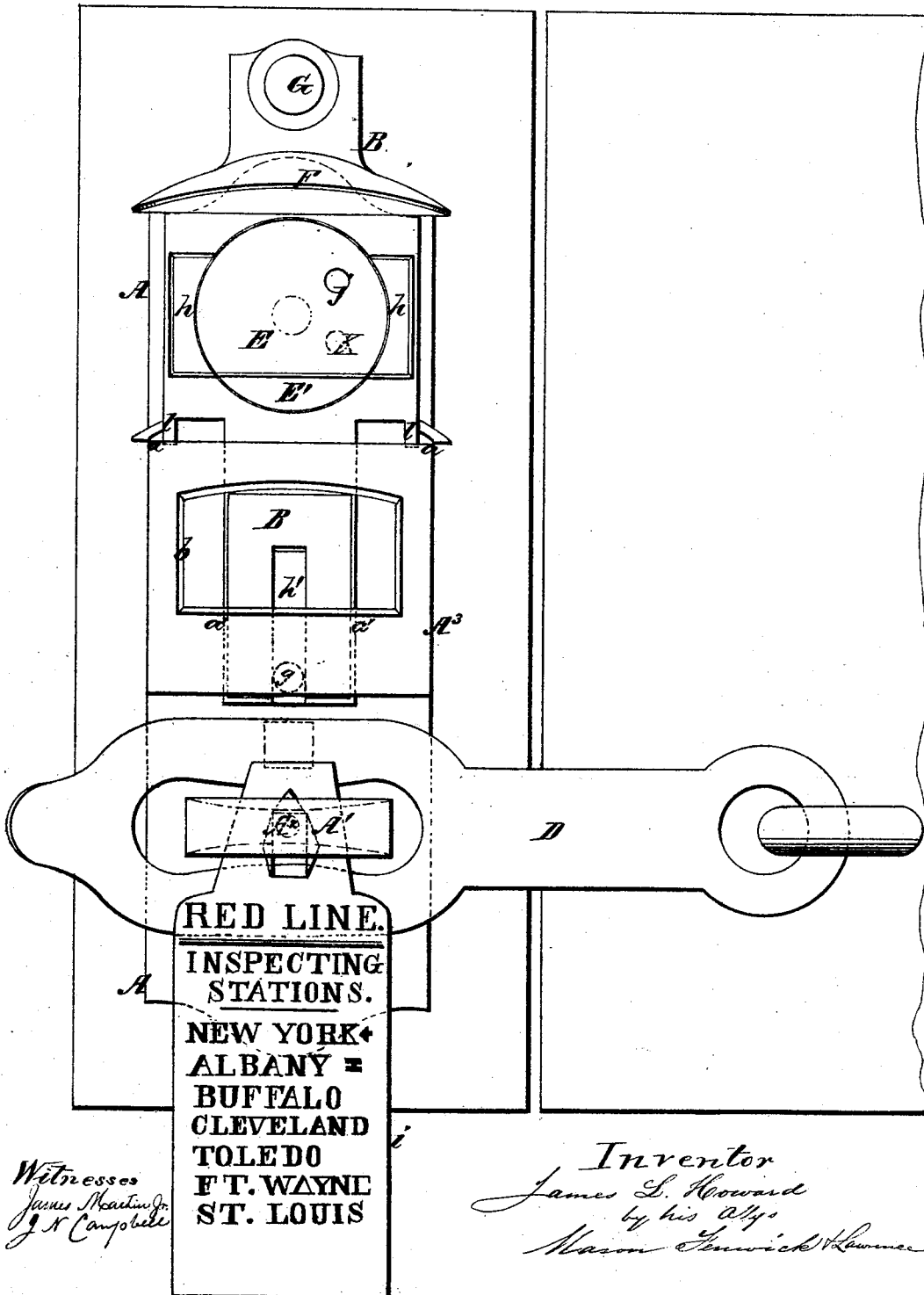
J. L. HOWARD.

Seal-Locks.

No. 151,983.

Fig. 1

Patented June 16, 1874.



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Fig. 2.

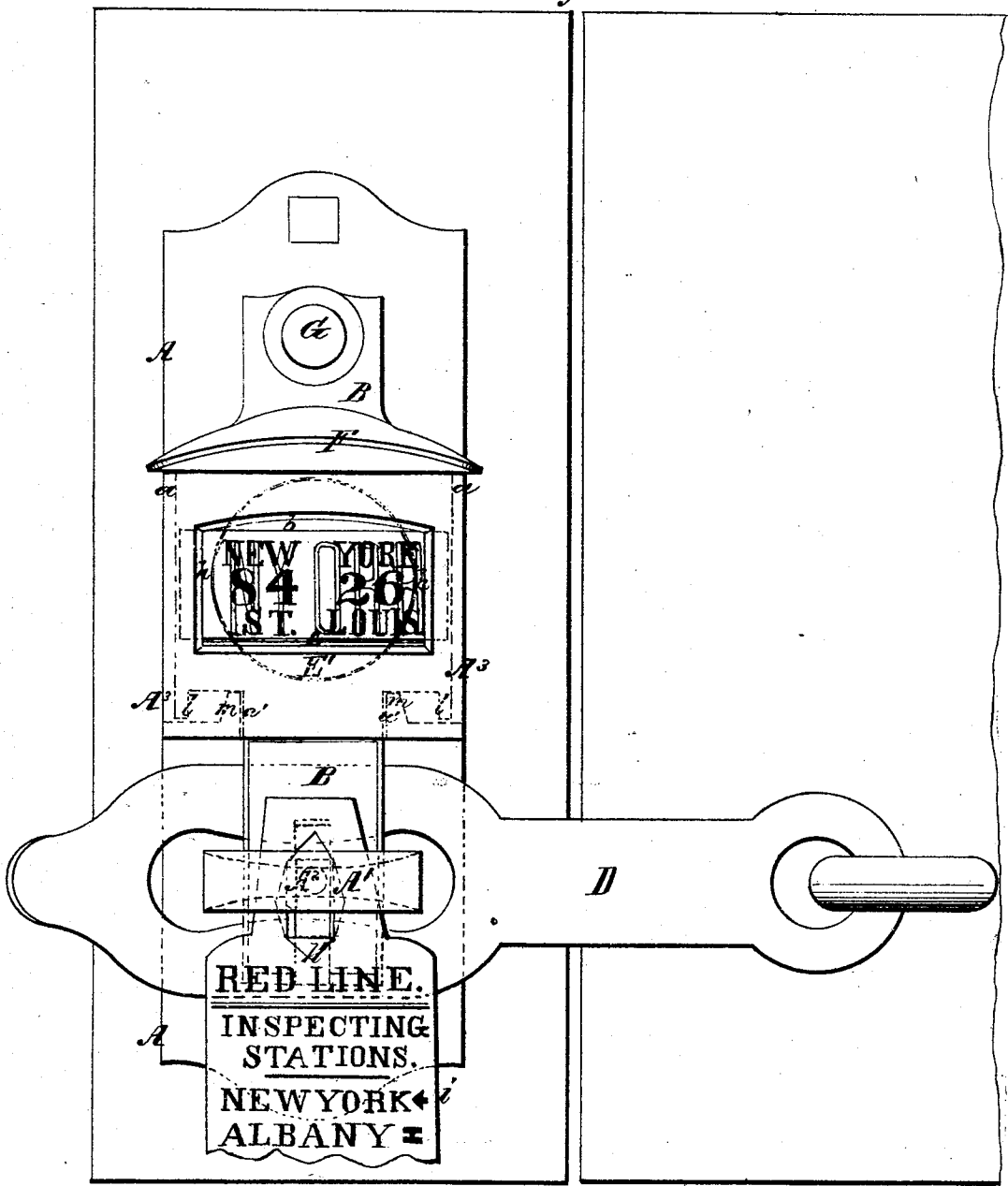
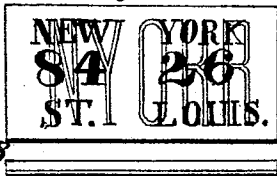


Fig. 7

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Fig. 8

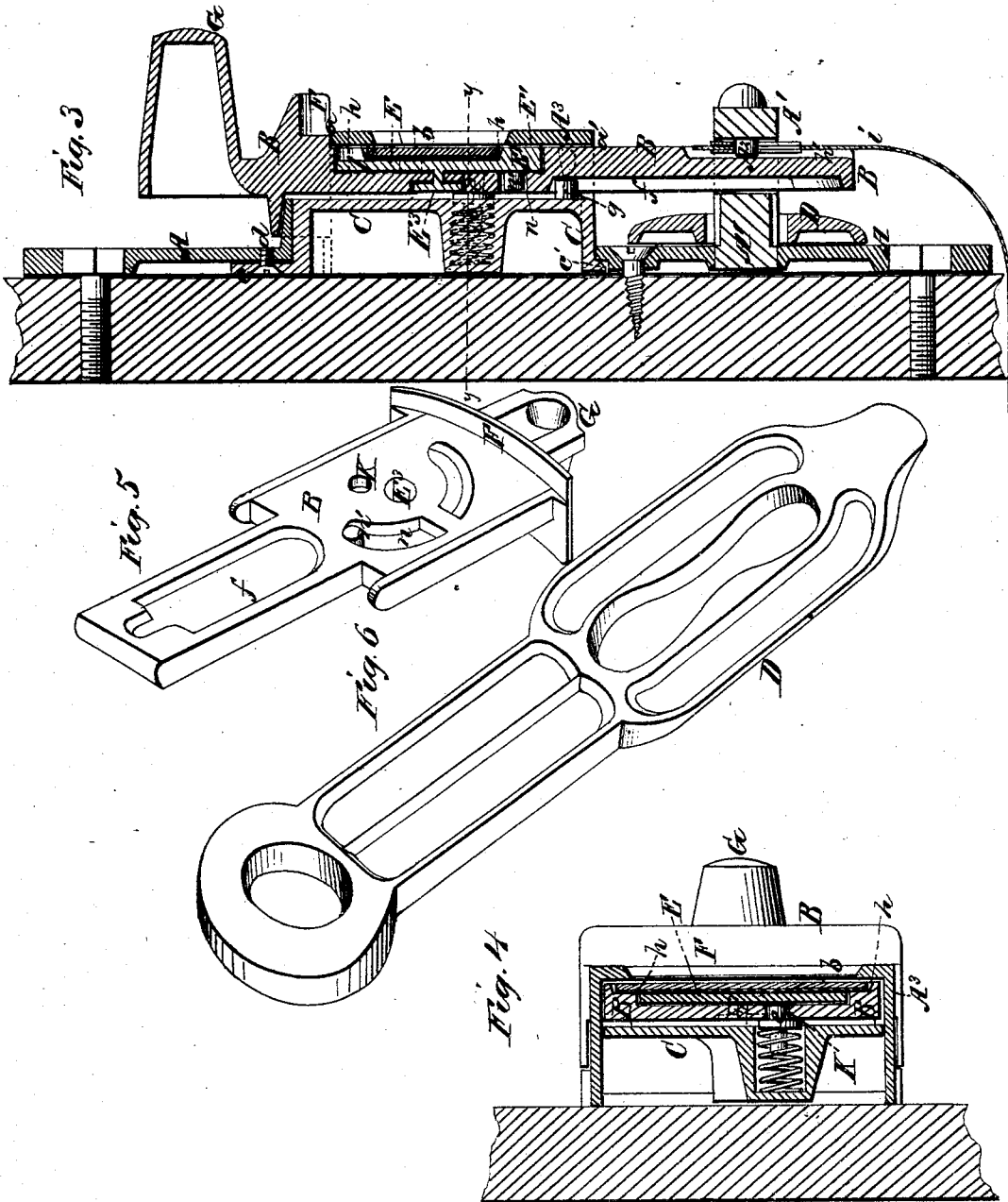


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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SEAL-LOCKS.

Specification forming part of Letters Patent No. **151,983**, dated June 16, 1874; application filed April 23, 1874.

To all whom it may concern:

Be it known that I, JAMES L. HOWARD, of the city and county of Hartford and State of Connecticut, have invented a new and useful Combination Seal-Lock; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a front elevation of my improved lock in the condition to which it is adjusted to receive the seal, and tag used with the same. Fig. 2 is a similar view of the lock locked and sealed, and with the tag secured. Fig. 3 is a vertical central section of the lock, as in Fig. 2. Fig. 4 is a horizontal section in the line *y y* of Fig. 3. Fig. 5 is a perspective view of the bolt, seen from the rear. Fig. 6 is a perspective view of the hasp, seen from the rear. Figs. 7 and 8 represent a glass seal.

The nature of my invention consists, first, in the bolt, constructed with a roof, or watershed, or guard of a peculiar construction, which shields the seal-case, in which it slides, from rain or sleet. Second, it consists in the combination of the following elements: A seal-bearing bolt, constructed with an overhanging watershed, and a case through which said bolt may slide; a plate bearing said case, and formed to be bolted fast to a car or its door; a staple attached to said plate, and a spring locking-pin, constructed and combined as will be hereinafter described. Third, it consists in a rotary disk, with an entrance-hole through it and out of range with the locking-pin—but which may be brought in range with it—set in the bolt so as to form nearly the whole back of the seal-cavity, as will be hereinafter described. Fourth, in a pin within the staple, in combination with the bolt, as hereinafter described. Fifth, in a groove in the bolt, in combination with a pendent pin of the hasp-staple, whereby tags are securely confined when the bolt is sealed and locked in front of the hasp. Sixth, in a special construction of the hasp and staple, as hereinafter explained.

The main object of the improvements just mentioned is designed to meet the demand which has long been felt and expressed by leading railroad-lines for a simple and effective arrangement of a combination lock and

seal, so arranged that there will be assurance that their freight-cars cannot be entered without such plain evidence of the fact being left that, on inspection, will reveal the same and locate the theft, that evidence being the tampering with or complete destruction of the seal.

Many devices have been devised, but have been objected to as not being secure in and of themselves, or because they could be easily put out of order, or taken from the car by being detached, or else they did not insure a safe and reliable sealing of the car.

My seal-lock is free from these objections, first, because it is simple in construction, and free of complicated machinery or delicate parts liable to get out of order. Second, it is fastened to the car, becoming a positive fixture, which cannot be removed without breaking. Third, it is so arranged that it sheds water, and is not liable to get out of order by exposure to storms. Fourth, it is a secure seal-lock either for glass or paper seals, as the lock-bolt cannot be reached without removing the seal or so marring it that detection must follow on an inspection. Fifth, it is, irrespective of the sealing qualities, an excellent and economical freight-car fastening, and is thus valuable, as it will give to the cars a positive and unremovable fastening in place of the old hasp, staple, and pin hung by a chain, while the additional cost is very reasonable. Sixth, it affords facilities for attaching and locking tags upon the bolt, and thus is added not only a convenience in having printed on them the starting and destination points, and also the inspecting-points—these last to be punched by the inspector with his own special punch—but also a means by which the inspector is reminded that the seals should be examined.

To enable others skilled in the art to understand my invention, I will proceed to describe it.

In the drawings, A represents the lock-case plate; B, the sliding seal-carrying bolt; C, the lock-case back-plate; D, the hasp. The plate A is bolted firmly to the car, and the hasp is hinged to the door thereof. The plate A has a hasp-staple, A¹, projecting from its face. This staple has a tag-holding pin, A², extending from its inner side a short distance

into the passage through which the bolt passes, as shown. Above this staple a case, A^3 , is cast upon the plate A. This case extends from the face of the plate nearly in form of a box, with a curved or arched top, in the top and bottom of which bolt passages $a a'$ are provided, while in its front a seal-inspection window, b , is formed. Behind this case the plate A is cut away, or left open in casting, and into this opening the plate C is inserted. This plate has stop lugs or flanges $c c'$ formed on its upper and lower ends, and by means of the lug c it is screwed, as at d , to the back of the plate A. In the plate C a socket for a spring locking-pin, e , is formed, and in this socket the spring-pin is arranged, as shown in Fig. 4. The front surface of the plate C is on a plane with the back of the opening of the hasp-staple, and also with the remaining portion of the top plate in rear of the bolt-passage a' of the case A^3 . The spring-pin, when in locking-position, stands out beyond the front surface of the plate C, and enters a hole, K , cut through the bolt, as shown also in Fig. 4. The bolt B is of a T form, and in its leg or narrow portion a chamber or groove, f , is cast, and this groove receives a central coupling-pin, g , of the plate C, when the bolt is passed down into the case A^3 . In the head or widest part of the bolt a cavity, h , is cast deep enough to receive a glass seal, such as shown in Figs. 7 and 8 of the drawings, and have the same flush with the surface of the bolt. This cavity may be rectangular, and its back unmovable or of one piece, so far as its use for the reception of glass seals only is concerned, but to adapt it for both glass and paper seals at option it is constructed with a pivoted back-plate, E, of a circular form, and with a straight shoulder, E' , which, when the seal is in place, forms a portion of the lower shoulder or ledge of the cavity. The face of the shoulder E' is flush with the face of the bolt, and thus, when a glass seal is broken, the fragments more readily fall down out of the cavity. The bolt above the cavity is constructed with a broad flange or cap, F, of arching or circular form, which overhangs the front, back, and edges of the bolt and case in such manner as to shed water beyond these surfaces; and above this cap a lug, with a knob, G, projecting horizontally, is cast upon the bolt, as shown. The narrow or leg part of the bolt has a groove, h' , cast in it, extending from the lower end to about midway of its length. This groove receives the pin A^2 of the staple, and thus permits of said pin being used without hinderance for confining a tag, i , as shown. Lips $l l$ are cast on the lower corner of the widest part of the bolt, and these occupy positions outside of the lugs $m m$ of the case when the bolt is in locking position. The pivoted plate E above referred to is fastened to the bolt by means of a T pivot, E^3 , and near the circumference of this plate a decoy key-hole, j , is formed in it, and in the same radius of this hole a hole, K, for the

passage of the locking pin through the bolt, is formed in the bolt. It is intended that the decoy-hole shall stand about one-eighth, more or less, the circumference of the plate E out of range with the locking-pin hole when the bolt is locked, and to effect this a segment-slot, n , is cut through the bolt, and a stop-pin, n' , provided on the plate E, as shown in Figs. 3 and 5. The hasp D is constructed with a staple-eye considerably larger than the staple, and the front service of this eye portion is beveled or rounded off from the eye to the edge of the hasp. The rear side of the staple is hollowed out, as shown in Fig. 6, so as to make it light, and yet have it strong enough when made of malleable metal. The top and bottom sides inclosing the eye are of a convex shape, corresponding to the top and bottom sides of the staple, which are concave, as represented. This form of eye allows for the twisting and play of the doors without binding and undue friction, and the general construction of the hasp insures a perfect annealing when the hasp is made of malleable metal.

The bolt being passed into its box through the passages $a a'$, as far as shown in Fig. 1, a glass seal is placed in the cavity. The hasp is now brought over the staple. A tag, i , is hooked upon the pin A^2 of the staple. The bolt is then moved down through the staple in front of the hasp. This brings the seal into the case with its upper and side edges overlapped by the front of the case. When the bolt has completed its movement the spring locking-pin e springs into the locking-hole K of the bolt and locks the bolt. To get the bolt unlocked it is absolutely necessary to break the seal. The seal being broken, and the glass drawn out over the lower edge of the window-opening, the spring-pin is forced back beyond the rear surface of the bolt by a solid cylindric key, and the bolt drawn upward. When the bolt is up the friction of the spring locking-pin, aided by a slight forward deflection from a vertical line of the lower end of the bolt, caused by the force of the spring-pin against it, holds the bolt up in its unlocked position. If glass seals are not used and paper ones are, a paper seal is placed in the cavity, the bolt lowered, as just described, and secured by the spring-pin. To get at the spring-pin it is absolutely necessary to move the hole in the circular plate around to a position of coincidence with the spring-pin hole of the bolt, and to accomplish this the hole must be found by feeling for it with a sharp wire or instrument, and when found the circular plate must be moved around, and this movement will destroy or so mar the paper seal as to indicate to the inspector that the seal has been tampered with.

In describing the operation in the use of glass seals no mention was made of the adjustment of the decoy-hole. The reason for this will be understood from the following: For glass seals only, the revolving plate with decoy-hole is of no use, except for shielding the spring from wet when a seal is not in place,

and, therefore, the disk may be dispensed with and an immovable back having a perforation in it may be used; but while this is the case it is a matter of importance to have an arrangement such as the circular plate in a seal-lock, so that either glass or paper seals may be used. Therefore, it will be understood that if the circular plate is at the back of the cavity, and the cavity is fitted with a glass seal, it will be necessary, in order to unlock the bolt, to turn the hole of the plate to a position of coincidence with the locking-pin hole of the bolt.

In practice, the locks designed specially for both paper and glass seals will have all four of the edges which inclose the window of the case constructed to overlap the seals.

In using glass seals, I propose that they shall be made of brittle glass with paper of the thinnest kind attached, and consecutively numbered in pairs, so that there never would be but two seals of the same number. This, with a system of coloring or other change, would give to each company its own designated seal. By this means, if the "red line" have fifty cars leaving New York for Chicago, and the seals have 1—50 on them, the conductor's way-bill would show the same, and the inspector at the different stopping-places, especially at the points where one railway passes the cars to another, would, after an examination, be able to certify to their being unopened and their contents safe at that point, and so limit the delivering company's responsibility; or, if discovering the same to have been broken, would thus be able to locate the theft and take steps for the detection of the thieves.

I do not claim glass seals, as I am aware that they have been patented; nor do I claim,

broadly, what is generally designated a seal-lock; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the bolt and seal case A, of the sliding bolt B, constructed with the roof or water-shed F, which overhangs the front and sides of the bolt and seal-case, as and for the purpose described.

2. The combination of the following elements: A seal-bearing bolt having the overhanging water-shed F; a seal and bolt case, through which said bolt slides; a plate bearing said case and formed to be bolted fast to a car or its door; a staple attached to said plate; and a spring locking-pin, constructed, arranged, and combined substantially as and for the purpose described.

3. The rotary disk having a decoy-hole in it, set in the seal-cavity of the sliding bolt, in combination with a spring locking-pin, substantially as and for the purpose described.

4. Pin A² within the staple A¹, in combination with the bolt B, substantially as and for the purpose described.

5. The groove h' of the bolt B, in combination with the pin A² of the staple A¹, substantially as and for the purpose described.

6. The hasp D, constructed as described, and with its eye portion formed as shown, in combination with the staple A², having its top and bottom made with a concave, as and for the purpose described.

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Witnesses:

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JNO. W. BOOTH.