

(No Model.)

J. A. UPSHUR.
SEAL LOCK.

No. 534,589.

Patented Feb. 19, 1895.

Fig. 1.

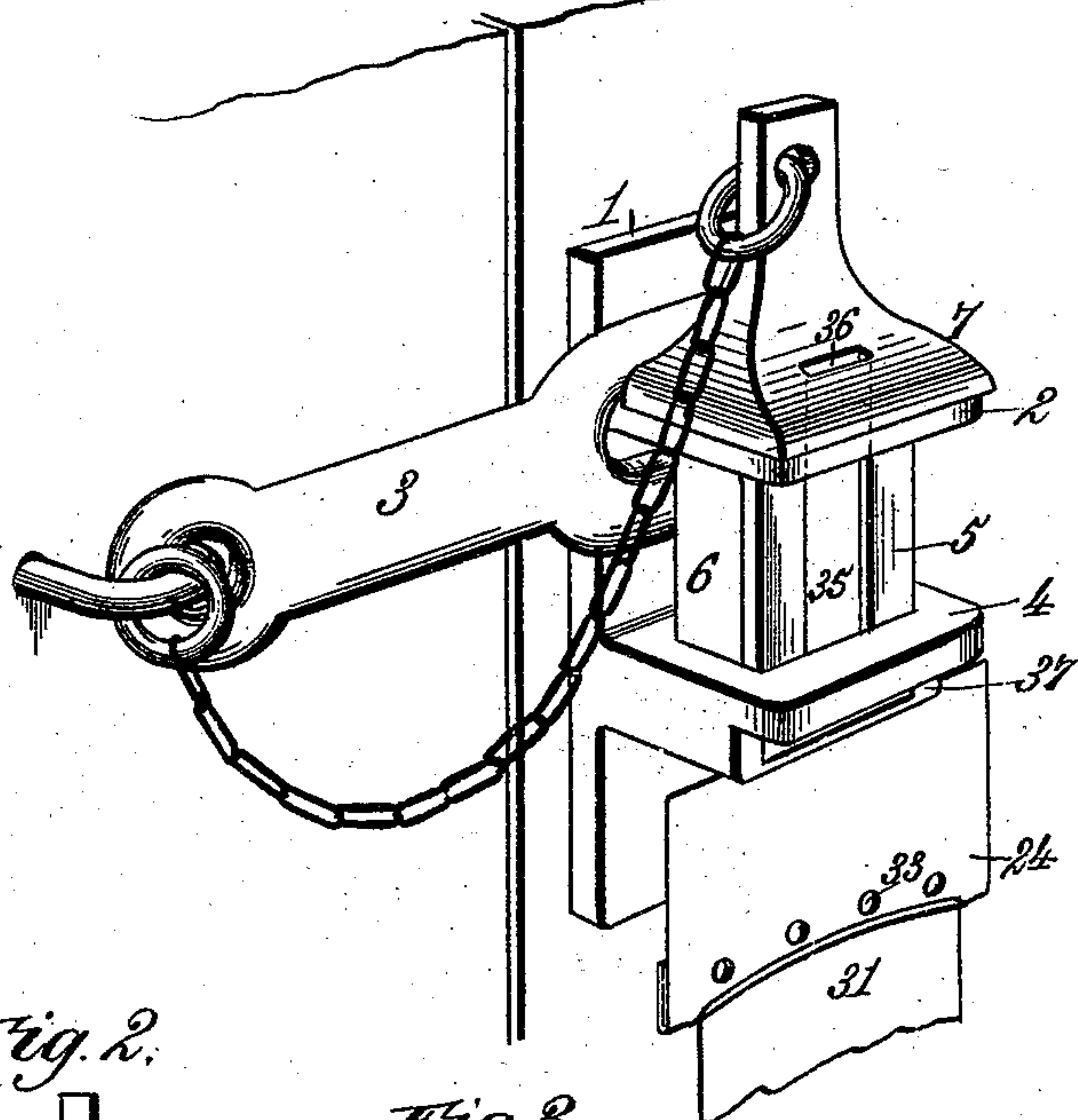


Fig. 5.

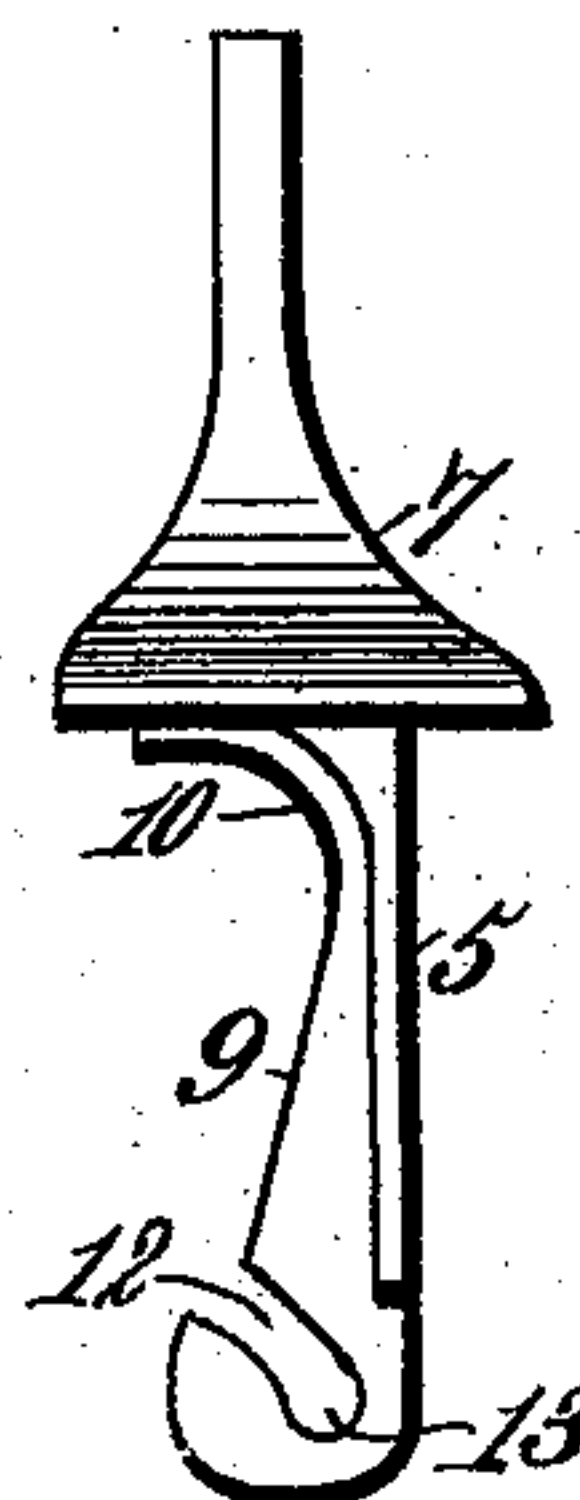


Fig. 2.

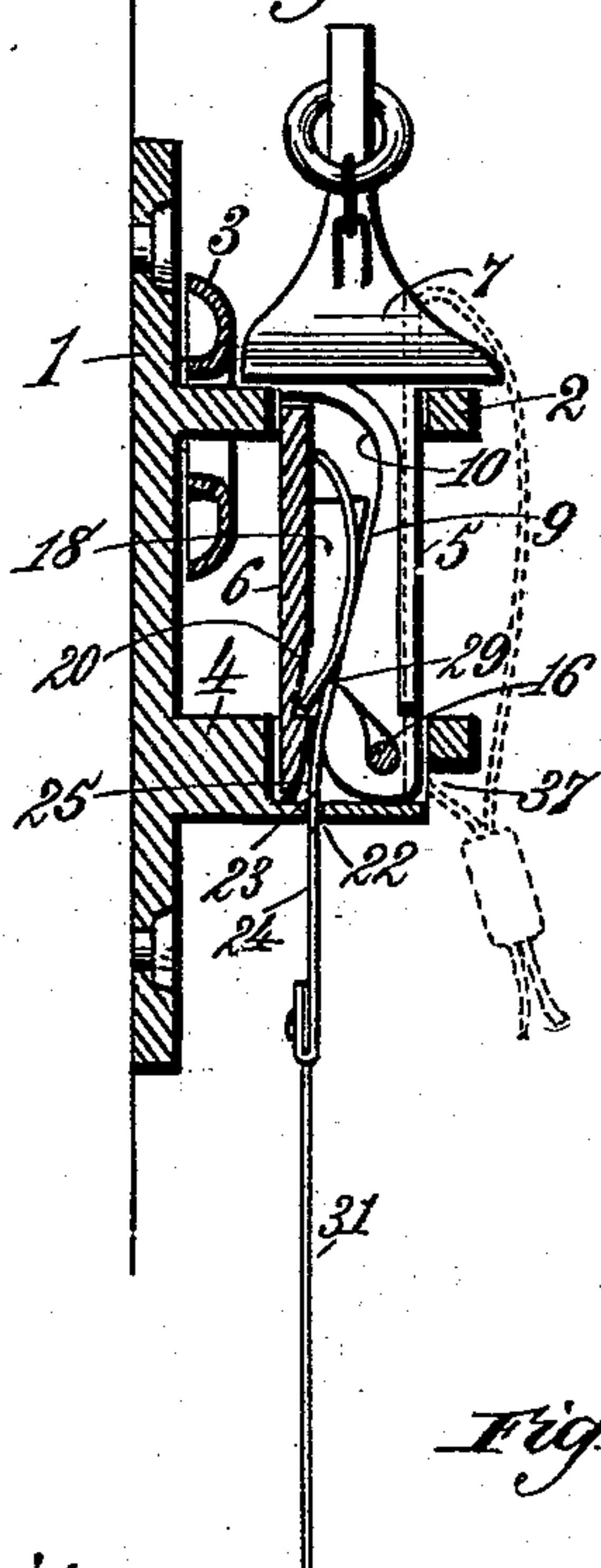


Fig. 3.

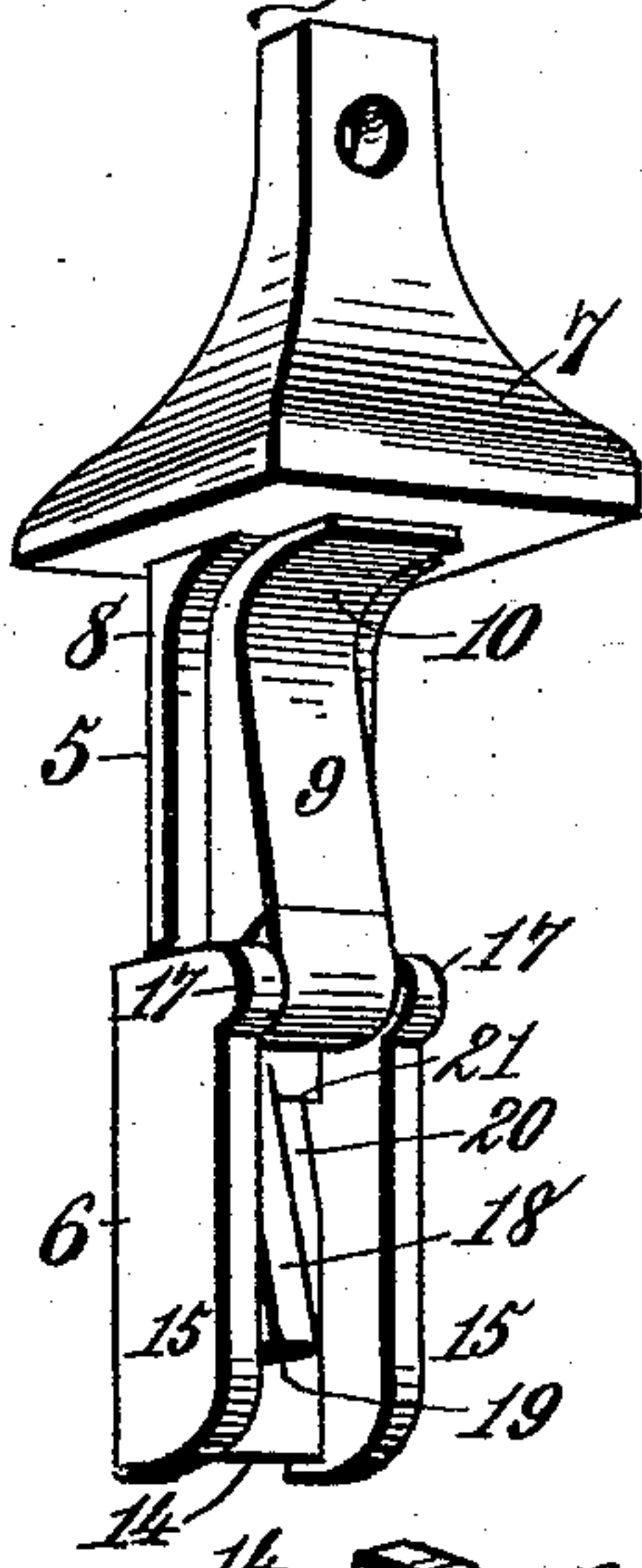


Fig. 6.

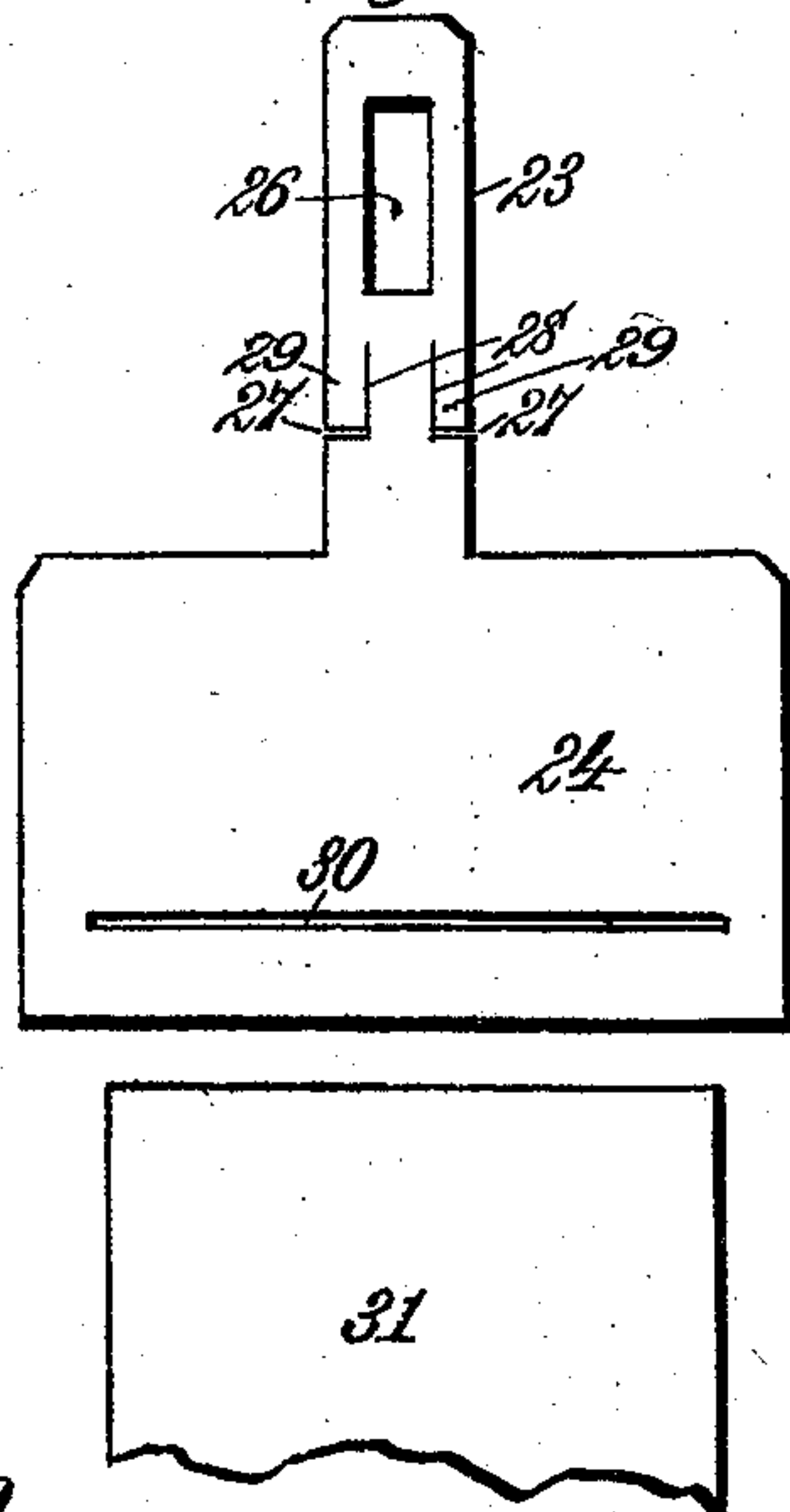
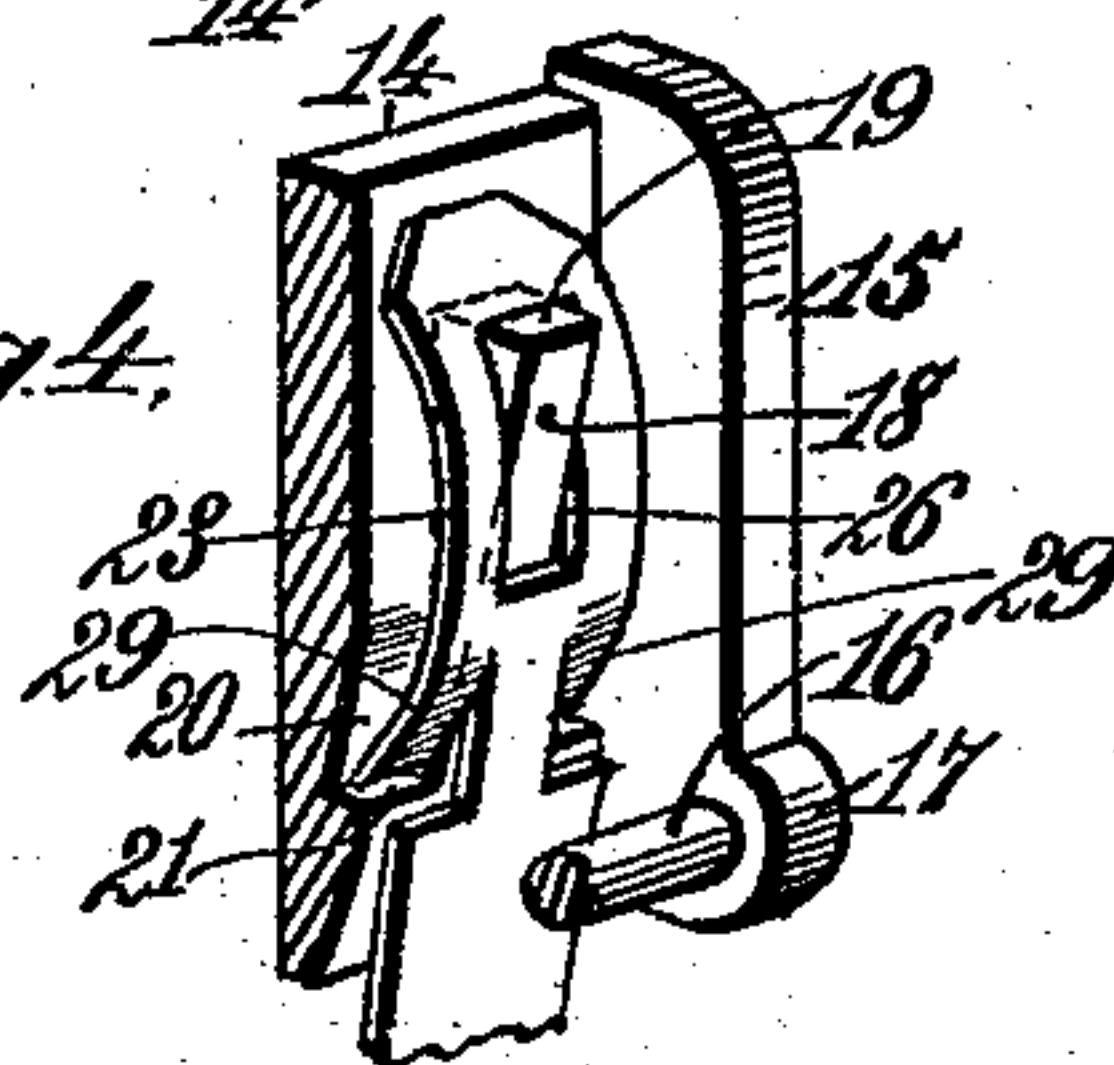


Fig. 7.



Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN A. UPSHUR, OF RICHMOND, VIRGINIA.

SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 534,589, dated February 19, 1895.

Application filed November 12, 1894. Serial No. 528,589. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. UPSHUR, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Seal-Locks for the Doors of Railway-Cars, of which the following is a specification.

My invention relates to seal locks for the doors of railway cars, and particularly to that type of seal locks shown, described and claimed in an application for Letters-Patent filed by me on the 15th day of May, 1894, Serial No. 511,354, and allowed upon the 18th day of August, 1894.

It is the purpose of my present invention to simplify and improve the construction and operation of seal-locks; to reduce the cost of their manufacture; to provide a construction of extreme simplicity which will defeat every possible attempt to tamper with the lock and open the door of the car without rupturing the metallic tag; and to so form and mutually adapt the two metallic portions of the lock that they may be assembled, combined and attached to the car in the condition in which they come from the mold, without any intermediate process of finishing, and without drilling, or other operation, for making a pivotal connection.

It is my further purpose to provide a seal-lock having such construction that the introduction of the metallic tag produces a curvature, or change of form therein, whereby it is positively engaged with a rigid part of the structure from which it can only be released by rupture.

It is my further object to provide a seal-lock of the type last mentioned and to combine therewith a metallic tag so formed that when inserted it shall not only be converted automatically into a part of the lock, but shall also furnish an absolute safeguard against the insertion of any instrument whereby the disengagement of the tag without rupture might be attempted.

It is one purpose of my invention, also, to provide for the use of the ordinary metallic tag, or thin strip, having its ends united by an impressed seal, and to accomplish this without any material change in the parts and with the minimum labor and expense.

Finally, it is my aim to improve the construction of the metallic tag; to effect an economy in the use of the metal from which said tags are formed; to so combine a record slip, or card, therewith as to prevent all possibility of the loss, or premature removal thereof and avoid the possibility of wearing, or cutting the strip by the edges of the metal.

The invention consists, to these ends, in the novel features of construction and in the parts and combinations of parts hereinafter fully described and then particularly pointed out in the claims.

To enable others skilled in the art to fully understand and to make and use my said invention, I will now describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1, is a perspective view showing my improved seal-lock mounted on the car, with the metallic tag inserted. Fig. 2, is a central vertical section of the lock, the parts being in the position shown in Fig. 1. Fig. 3, is a perspective view of the two pivotally connected parts which constitute the essential elements of the lock, the metal tag being removed and the parts shown in the position they normally occupy when not in use and removed from the staple plate. Fig. 4, is a detail perspective of one of the two parts shown in Fig. 3, the side being removed to show the interior construction. Fig. 5, is a detail view of the other of the two parts shown in Fig. 3. Fig. 6, is a face view of the metallic tag and record slip, before the two are united. Fig. 7, is a central longitudinal section of the permanently united metal tag and the record slip showing the manner of uniting the same.

The reference-numeral 1, in said drawings, indicates the base-plate, or that part of the lock which is permanently attached to the body of the car, or to the car-door, as the case may be. From the outer face of this plate projects a staple plate 2, having an opening of such size as to readily receive the bolt of the seal lock which confines the hasp 3 in place, when the door is locked, the end of the hasp having an opening through which the staple plate passes. At a suitable distance below the latter a rigid block, or housing 4 projects from the face of the base-plate, a recess or chamber, being formed in the side ad-

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jacent to and parallel with the staple plate. This chamber is of substantially the same size and shape as the opening in the staple-plate, and of any depth suitable for receiving and securely retaining the end of the locking-bolt.

The bolt consists of two members, or parts, 5 and 6. The part 5 is provided with a head 7, having a flat lower face, and is of such size and form that it may seat and rest upon, or cover the staple-plate 2. Upon the lower face of the head 7 is a rigid hanger 8, upon one face of which is a rib 9, of less width than the hanger and of suitable thickness which increases somewhat as the lower end of the hanger is approached. The outer face of the rib 9 thus converges toward the face of the hanger as it approaches the top of the latter, where it is curved toward the opposite edge of the head 5, forming thereby a concave surface 10. The edges of the hanger are cut away at the lower end, as seen in Fig. 5, so that the end of the rib, which is here at its maximum thickness, extends below the sides of the hanger. When the part 5 is cast in the mold, the lower end of the rib 9 is formed with an angular slot 12 which lies across its face and extends to and into a nearly circular opening 13, of somewhat greater diameter than the pivot-pin which connects the hanger to the other part 6 of the bolt. The width of the slot 12 is sufficient to admit the pivot pin which is formed in the manner presently to be described.

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The second part 6 of the bolt consists of a central plate 14, between two parallel side plates 15, the pivot pin 16 being cast between and as part of the ends of said side plates which may be provided with ears 17 at their angles for this purpose. Upon the face of the plate which lies between the side plates is formed a substantially triangular lug 18, having that edge, or face, which corresponds to the hypotenuse of the triangle substantially parallel, or nearly parallel, when the two parts of the bolt are closed, with the surface of the tongue 9, in the part 5. The width of said tongue is such that it enters freely between the side plates 15, and the square end 19 of the lug 18 which corresponds to the the perpendicular of the triangle, lies at a little distance from the end of the plate 14. At, or near, the point of intersection of the hypotenuse and base of the triangle represented by the lug 18, pockets 20 are formed in the face of the plate 14, upon both sides of the lug, and at the ends of said pockets nearest the said point of intersection they are terminated by walls 21, at right angles with the faces of the plate in which they are formed, though I may make this angle less than ninety degrees, whereby the two walls of each pocket will be at a more acute angle.

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The parts 5 and 6 are united by merely slipping the pivot pin in the latter through the slot 12 in the tongue 9 until it reaches the opening 13. One or more blows with a ham-

mer upon the end of the tongue will then close the slot and confine the pivot pin in its seat, the opening 13 being cast of such diameter as to permit the slot to be closed in this manner without binding the pin.

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When the part 6 is turned into locking position it forms, in conjunction with the hanger 8, a bolt of such size as to substantially fit the opening in the staple plate 2, as well as the chamber in the housing 4 into which its end descends.

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In the bottom of the chamber last mentioned is formed a narrow slit 22, of such dimensions as to admit the thin strip, or tongue of metal 23, which forms part of the sealing-tag 24. The slit 22 opens at a point coinciding with a converging opening 25, between the rounded end of the rib 9, and the beveled end portion of the face of the plate 14, as seen in Fig. 2. This opening directs the end of the strip, or tongue, between the two parallel, or nearly parallel surfaces of the rib 9 and the triangular lug 18, which are separated by a sufficient interval to allow the strip to pass. After passing beyond the end of the lug 18 the end of the strip impinges upon the concave surface 10 of the rib 9, which curves over toward the face of the plate 14, from which the lug 18 projects. By pushing the strip in as far as it is permitted to pass, its end will be carried toward the plate 14, and the lug 18 will enter a slot 26 in said strip, which is of such length that the greater portion of the length of the strip will be held upon the edge, or inclined face of the lug 18. This causes the strip to assume a comparatively sharp curve, as its end reaches the end of the concave face 10. This causes the metal to assume and retain a curved shape, as seen in Fig. 2, thereby engaging the slotted portion with the angular end of the rib and causing it to retain said engagement by the form imparted.

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Between the slotted portion of the strip 23 and the metallic tag 24, the edges of the strip are cut, or slit, transversely, the length of the slits 27, thus formed, being substantially equal to the width of the metal on each side of the slot 26. From the inner ends of these slits 27, the metal is slitted longitudinally by short cuts 28, extending toward the free end of the strip and the short tongues 29, thus formed are bent slightly rearward, as seen in Fig. 7. When the strip is inserted as described, and when the desired curvature has been formed by its insertion, a slight retractile movement will cause the tongues 29 to pass into the pockets 20, the ends of said tongues closely hugging the lowest points in said pockets. The purpose of this construction is to provide an effectual and absolute safe-guard against every possible method of picking the lock by the insertion of a thin instrument capable of so far removing the curvature of the strip 23 as to enable its slotted end to be drawn off the lug 18. It will clearly be seen by Fig. 2, that the insertion of such

an instrument over the central part of the strip, in line with the slot 26 will be wholly ineffectual, as it will merely pass over the end of the lug and at some little distance from the curved portion. The insertion on either side of the center will inevitably cause the end of such an instrument to be caught by the tongues 29, or between said tongues and the main body of the strip from which they are struck. Farther passage by any implement that can be devised is wholly impossible and by this simple construction I provide a safeguard against all attempts at tampering with the lock which no skill or patience can overcome.

The metallic tag 24, of which the strip 23 forms part, is composed of any suitable sheet metal, tin being preferred. Its dimensions and those of the strip 23 are so proportioned that a number of tags can be formed from a sheet of metal without any waste, this being a matter of some importance in view of the great number of tags used upon seal-locks. The body of the tag 24 will have embossed thereon the number and such other matter as may be usual, or desirable, and near its lower edge is formed an opening 30, extending over somewhat less than the width of the tag. This opening is formed in such manner that the edges of the metal are turned, or projected somewhat from the rearward face of the tag, resembling the burr formed by a punch. Through the opening 30 is inserted a slip of paper, or card-board, 31, of suitable strength, the insertion being sufficient to carry the end of the strip above the opening 30. The sheet metal is then folded upon itself along the line of the opening 30, so as to inclose the inserted end of the slip between two thicknesses of metal, as shown in Fig. 7. The edges of the metal between which the slip lies are curled, or turned, far enough to prevent wearing, or marring the slip when the latter is bent or folded, as shown at 32, Fig. 7. A series of openings 33 are then punched through both thicknesses of paper and through the interposed slip, the punch used being blunt, or of such form that one thickness of the metal will be drawn through the paper slip and through the other thickness of metal, while the slip will also be drawn between the two portions of metal which are turned by the action of the punch. The projecting edges surrounding the openings 33 are then upset, or riveted down by a tool similar to that used in fastening an eyelet, as shown by the numeral 34 in Fig. 7. The paper being caught between these upset marginal portions it can not be removed, nor can the upset, or riveted portions 34 be raised, to release the slip, without such mutilation, or marring, as will afford ample evidence of the attempt.

The record slip 30 affords ample space for the sealing-record, the name, or the letters, or characters, indicating the name of the road, the train-number, date, consignor, consignee,

contents of car sealed, the name or initial of the person to whom the tag is issued, and who seals the car, the arrival at destination, and the "exceptions."

In use I may, and preferably do, form a shallow channel 35 in the outer face of the plate 14 and an opening 36 in the head 7 registering with said channel. The front angle of the housing 4 is also removed, as shown at 37, Fig. 2, sufficiently to expose the lower end, or portion, of the channel 35. Through the latter and through the opening 36 the metallic strip heretofore used may be inserted, its ends being brought together just below the housing 4 and united by the metallic, impressed seal, as seen in dotted lines in Fig. 2. This construction is provided to enable the lock to be used upon roads where the old form of tag and lead seal is retained.

In use the bolt is attached to the staple holding the hasp by a chain, or connected in any suitable manner to the car, so that when removed from the staple plate and housing it may hang by the chain in convenient position for use. When detached the parts 5 and 6 of the bolt assume the position shown in Fig. 3.

What I claim is—

1. In a seal-lock, the combination with the parts confining the hasp, of a bolt closed at one end and having an opening at the other end to admit a flexible metallic strip forming part of the sealing tag, the interior of said bolt being provided with a channel, for the entrance of the strip, and with an interior lug lying in and having an inclined face parallel with the wall of said channel the latter being curved beyond said lug to impart a permanent bend to the strip and bring said lug into a slot formed in said strip, substantially as described.

2. In a seal-lock, the combination with the parts confining the hasp, of a bolt adapted to admit a slotted flexible, metallic strip forming part of the sealing tag, the interior of said bolt being provided with a channel for the entrance of said strip and with a lug lying in said channel, the latter being curved beyond said lug to bend the strip and engage the lug with its slot, and said channel being provided, between its entrance and the point of engagement of the lug, with pockets adapted to receive and retain tongues forming part of the edges of the metal strip and normally bent at an angle therewith, substantially as described.

3. In a seal-lock, the combination with the parts confining the hasp, of a two-part bolt provided with an interior channel, a lug formed on one of said parts and lying in said channel, the latter being curved beyond said lug, and pockets formed at the sides of said channel near the entrance of the latter, and a sealing-tag having a slotted, flexible, metallic strip adapted to enter and traverse said channel, its end being bent by the curvature of

the channel to engage the lug therein with the slot in said strip, the edges of said strip being provided with tongues to engage the pockets at the sides of the channel, said
5 tongues being normally bent at an angle with the strip opening toward the entrance to the channel, substantially as described.

4. In a seal-lock, the combination with the parts confining the hasp, of a bolt provided
10 with an interior channel, a lug lying in said channel, and pockets formed at the sides of said channel between its entrance and the lug, and a sealing-tag having a slotted metallic
15 strip provided with tongues at its edges which are bent at an angle to the body of the strip, the apex of the angle being next to the slotted end of the strip, to enable the latter to engage the lug and the tongues to snap into the pockets, substantially as described.

20 5. In a seal-lock, a sealing-tag formed of two laminæ of sheet metal and an intermediate record slip united therewith by upsetting, or riveting, the two laminæ of sheet-metal and portions of the intermediate slip together, sub-
25 stantially as described.

6. In a seal-lock, a metallic sealing-tag having a record-slip attached thereto by folding the metal of the tag upon itself with the slip
30 interposed, and punching said metal and slip to draw both into annular form, and upsetting, or riveting, the drawn, annular projec-

tions with portions of the slip between, substantially as described.

7. In a seal-lock, the combination with a bolt formed in two pivotally connected parts, 35 one provided with an angular lug and the other with a tongue, the surface of which is substantially parallel, when the parts are brought together with the inclined edge of the lug, and curved beyond the end of the
40 latter into concave form, and a metallic tag having a strip of flexible metal slitted near its end and provided with tongues at its edges which are bent at an angle with the strip to engage pockets formed in an entrance be- 45 tween the parts of the bolt, said tag having a record slip inserted in a slot in the tag and between two thicknesses of metal produced by bending the metal on itself in the line of the slot, said metal and slip being punched 50 and drawn into annular form at one or more places and the ends of the annular projections of metal and paper upset or riveted down together, substantially as described.

In testimony whereof I have hereunto set 55 my hand and affixed my seal in presence of two subscribing witnesses.

JOHN A. UPSHUR. [L. S.]

Witnesses:

THOS. A. GREEN,
JAMES L. NORRIS.