

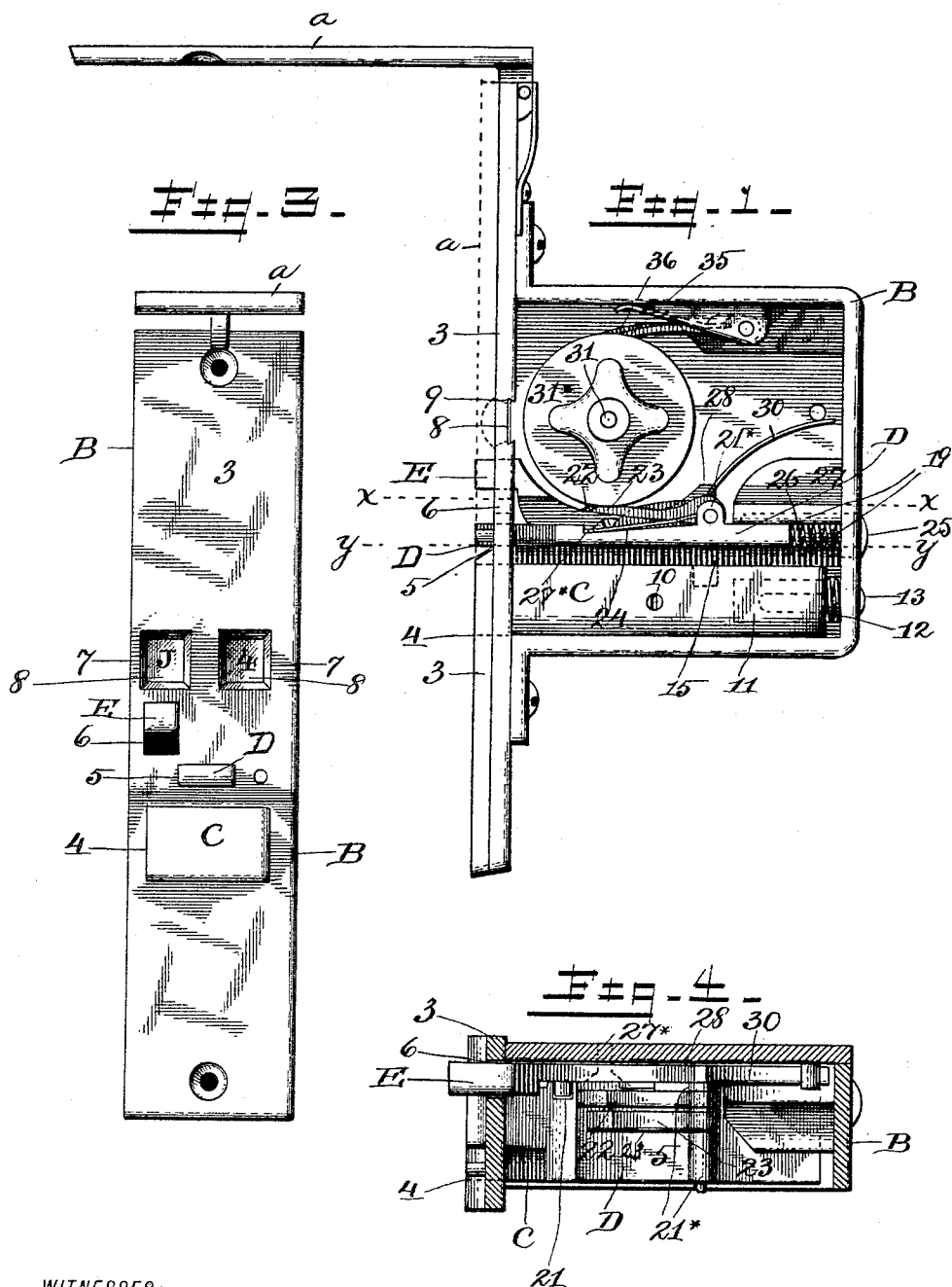
(No Model.)

3 Sheets—Sheet 1.

L. BISHOP.
INDICATOR LOCK.

No. 462,194.

Patented Oct. 27, 1891.



WITNESSES:

Jack Blackwood
J. J. McCallum

INVENTOR

Lamartine Bishop

BY

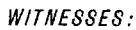
A. G. Heylman

ATTORNEY.

3 Sheets—Sheet 2.

No. 462,194.

Patented Oct. 27, 1891.



Jack Blackwood
F. O. McElenny.

INVENTOR
Lamartine Richaph

BY
A. G. Keyman
ATTORNEY.

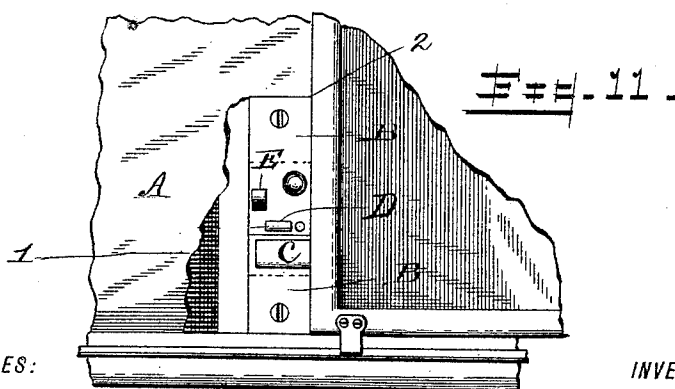
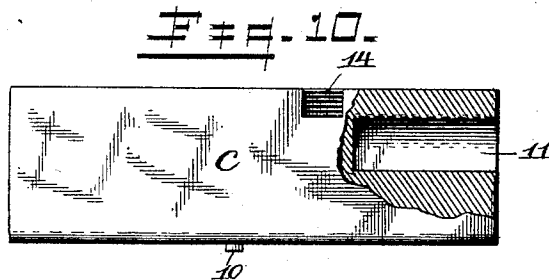
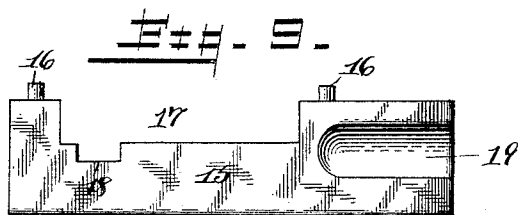
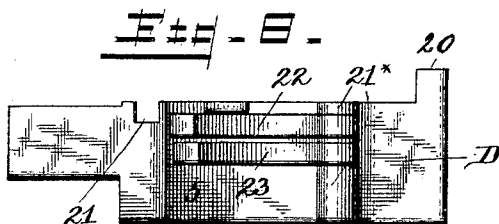
(No Model.)

3 Sheets—Sheet 3.

L. BISHOP.
INDICATOR LOCK.

No. 462,194.

Patented Oct. 27, 1891.



WITNESSES:

John Blackwood
J. M. C. C. C.

INVENTOR

Lamartine Bishop

BY

A. G. Heyman

ATTORNEY.

UNITED STATES PATENT OFFICE.

LAMARTINE BISHOP, OF BALTIMORE, MARYLAND.

INDICATOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 462,194, dated October 27, 1891.

Application filed May 7, 1891. Serial No. 391,895. (No model.)

To all whom it may concern:

Be it known that I, LAMARTINE BISHOP, a citizen of the United States of America, residing at Baltimore, in the State of Maryland, have invented a new and useful Car-Door Lock, of which the following is a specification.

My invention has relation to improvements in locks for securing and retaining the sliding door of a car in a closed position and for indicating whether the lock or door has been tampered with or unwarrantedly moved after being locked in a closed position; and the object is to provide a simple, effective, and durable means for holding the car-door closed and for indicating the fact of whether the car has been entered through the door during transportation from place of shipment to the place of delivery.

I have fully specified and described my invention hereinafter, and have also particularly pointed out and distinctly claimed the parts and combinations of the mechanism which are my invention.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a side view of the lock, one of the plates of the casing being removed and showing the locking-bolt held in retracted position. Fig. 2 is a similar view taken from the opposite side of the casing and showing the mechanism with the bolt moved to its outer movement and in locked position. Fig. 3 is a face view of the lock, with the bolt and key-slide in retracted positions. Fig. 4 is a longitudinal section on the line *x x* of Fig. 1, showing the key-slide held back by the locking-dog. Fig. 5 is a similar view on the line *y y* of Fig. 1, showing the plate between the bolt and the key-slide in position. Fig. 6 is a detail of the indicating-wheels. Fig. 7 is a view of the locking-dog. Fig. 8 is a view of the key-slide. Fig. 9 is a view of the plate which is interposed between the bolt and the key-slide. Fig. 10 is a plan view of the locking-bolt. Fig. 11 is a view showing the lock fixed in position on a car-body and holding the sliding door against reverse movement, only a portion of the car-body and door being shown, these portions being deemed sufficient to intelligently illustrate the application of the lock.

A designates the side of a car, having the usual vertical studding 1, constituting the side piece of the door-frame. In this studding is formed a mortise 2, in which is fitted and secured the lock, arranged so that the bolt when projected will stand against the edge of the closed door, as shown in the drawings, and hold the door against being slid back on its track.

B designates the casing of the lock, which incloses the mechanism on all sides, having a strong face-plate 3 provided with a bolt-hole 4, a key-slide hole 5, a hole 6 for the projecting end of the locking-dog, and apertures 7, provided with glass closures 8, through which the position of the indicators may be read. The glass may consist of a single strip of mica let in a dovetail groove 9, arranged transversely across the inner side of the face-plate. The face-plate 3 is extended above and below the casing, as shown, and provided with holes, through which fastening-screws can be projected into the face of the car to hold the lock in its seat or mortise, and a plate *a*, forming a supplemental face-plate, may be hinged to the face-plate and have holes therein, which take the end of the key-slide and locking-dog and hold them in position against accidental operation when the bolt is out and locked.

C designates the locking-bolt, which is made of a substantial piece of metal and arranged in the lock to slide through the aperture 4 and supported in the lock on the inner face of the lower portion of the casing. The bolt has a lug 10 in its side, which prevents the bolt from being pushed out of the lock beyond this point, the lug lodging against the face of the case and holding the bolt from farther projection. The bolt is cored out from the rear, as shown at 11, (shown in dotted lines,) and in the core or socket is arranged a spring 12, mounted on a pin 13 in the casing, and operates to throw the bolt outward when in released condition. In the upper face of the bolt is a recess 14, which is engaged by the nose of the locking-dog, which engagement serves to hold the bolt retracted. On the upper surface of the bolt is arranged a plate 15, provided with studs 16, which enter holes in the casing and hold the plate in proper position. The inner edge of this plate is cut

away, as at 17, to provide room for the movements of the locking-dog. In the edge of the cut-away portion is a recess 18, which takes the lug of the locking-dog in case it projects below the key-slide. The upper face of the plate at the rear is recessed, as at 19, to afford room for the spring, which actuates the key-slide.

D designates the key-slide. This consists of a plate of metal having the end arranged in the hole 5 in the face-plate and formed with a lateral end projection 20, which lodges against the nose of the locking-dog when that element is engaged with the bolt. In the inner edge of the key-slide is a recess or notch 21, which takes the lug on the inner face of the locking-dog and operates to hold the key-slide in its retracted position. On the key-slide are formed bearings 21*, in which are mounted pawls 22 23, the free ends of which engage with ratchets on the wheels bearing the indicative characters, as hereinafter described. Springs 24 in the rear of the pawls bear with their free ends on the plate and operate to keep the pawls in engagement with the ratchets of the respective wheels. On a pin 25, let through the end of the casing, is arranged a coil-spring 26, which serves to throw the key-slide outward when it is released from the engagement of the locking-dog. Above the rear end of the key-slide in the casing is secured a bracket 27, recessed in its under side to take the upper portion of the spring 26 and serves the double purpose of holding the key-slide down in horizontal position and in conjunction with the recess in the plate 15 as a seat for the said spring.

E designates the locking-dog. This consists of a piece of metal mounted on a pivot 27* and having its outer end arranged in and projecting a short distance through the opening 6 to be convenient for manipulation. The inner end 28 of the locking-dog is bent downward and moves down to the recesses or cut-away portions of the plate and the key-slide behind the end of the bolt and holds the last element in locked position. On the face of the locking-dog is a laterally-extended lug 29, which engages in the recess 21 of the key-slide and holds that element in retracted position. The locking-dog is thrown into engagement with the end of the bolt by means of a spring 30, which bears down on the end of the dog and tends to always keep it in position for automatic engagement. In the casing is mounted an arbor or shaft 31, preferably having bearing-surfaces of different diameters, on which are mounted to turn thereon the wheels 31* 32, each one of which bears on its circumferential face certain characters, serving as dual indications of the registration at the place of shipment. On the inner side faces of the wheels are secured ratchets 33* 34, with which engage pawls 35 36, pivotally mounted in the casing to serve to hold the wheels from turning in reverse

direction, substantially as shown. The ratchets on the respective wheels are made of different lengths, in order that if the lock is tampered with the unauthorized person will have much trouble in turning the indications to the same registration as moved from. Between the wheels 31* 32 may be a spring-disk 37, which keeps the wheels in relative position on the shaft.

The parts may be assembled by first putting the bolt and its spring in position, then placing the plate over it, then arranging the key-slide in position, and then mounting the wheels in the casing and the parts are ready for operation.

The operation is as follows: When the bolt and key-slide are in retracted position, the nose of the locking-dog projects downward into the recess of the bolt and holds the bolt in that position, and the lug on the forward arm of the locking-dog, engaging in the recess of the key-slide, holds that element in retracted position. When the protruding or projecting end of the locking-dog is pressed down, the dog at the other end is lifted and withdrawn from engagement with the bolt, which is shot forward by the action of the spring at its rear, the forward movement of the bolt being stopped by the lodgment of the stud in the side of the bolt against the inner side of the face-plate of the casing. When the dog is carried still farther upward, the side lug on the forward arm is moved downward out of and below the notch in the key-slide and the slide left free to be shot forward. In this position both the bolt and the slide are free to be pushed back, and should both be pushed back to their limit the locking-dog springs down and holds them; but if the key-slide alone is pushed back the locking-dog, as soon as the side lug thereon registers with the notch in the slide, is sprung down with its nose behind the end of the bolt and holds it locked. The rearward movement of the slide carries with it the pawls thereon, which, being engaged with the ratchet on the wheels, turn the wheels one notch, and the position thus registered can be noted by inspection through the transparencies in the face-plate, and then record made on the way-bill of the car. To unlock the bolt, the locking-dog is pressed down, releasing the key-slide, which is moved outward, and the bolt is free and may be pushed back, together with the key-slide, into the casing. If the bolt is locked in its projecting position, it can only be released by withdrawing the locking-dog, and this cannot be done unless the key-slide is also released from its protracted position and shot forward, in which position it serves as a bolt to prevent the car-door from being moved back, and then if the key-slide is moved back to permit the car door to slide back or to lock the bolt back the pawls turn the wheels and present different characters from those recorded.

Having thus described my invention as required by the statute, I now proceed to particularly point out and distinctly claim the parts, improvement, and their combinations, that I claim as my invention, as follows:

1. In a car-door lock, the combination of a spring-actuated locking-bolt, a spring-actuated key-slide, and a locking-dog to hold the key-slide and bolt in locked relation, substantially as described.

2. In a car-door lock, the combination of a spring-actuated locking-bolt, a spring-actuated key-slide, pawls on the key-slide, two wheels journaled in the lock, having ratchets on their side faces and characters on their circumferential faces, pawls to hold the wheels against reverse movement, and a locking-dog to engage the key-slide and locking-bolt, substantially as described.

3. In a car-door lock, the combination of the spring-actuated key-slide having its forward end arranged to project beyond the face-plate and formed with a recess, pawls on the key-slide, wheels having ratchets to engage the pawls on the key-slide, and a locking-dog having a side lug to engage the recess in the key-slide and hold it in retracted position, substantially as described.

4. In a car-door lock, the combination of the spring-actuated locking-bolt formed with a recess in its upper face, the spring-actuated key-slide formed with a recess in its side edge, a locking-dog formed with a downward directed inner end to engage the recess of the locking-bolt, and a side lug to engage the re-

cess in the key-slide, substantially as described.

5. In a car-door lock, the combination, with the casing having a face-plate provided with suitable apertures, of a locking-dog, a key-slide, and a bolt, all arranged with their lugs to project through the apertures of the face-plate, whereby all or either of said elements may be manipulated from the exterior of the face-plate, substantially as described.

6. In a car-door lock, the combination of a spring-actuated locking-bolt, a spring-actuated key-slide, pawls on the key-slide, a locking-dog to engage the slide and the bolt, indicator-wheels journaled in the lock, and ratchets on the respective wheels of different lengths, substantially as and for the purpose specified.

7. In a car-door lock, the combination, with the casing, of a spring-actuated locking-bolt, a key-slide having its end projected through the face-plate of the casing, a locking-dog having its end projecting through the face-plate, and a hinged supplemental face-plate having apertures to fit over the projecting ends of the key-slide and locking-dog, substantially as described.

In witness whereof I have hereto set my hand in the presence of two attesting witnesses

LAMARTINE BISHOP.

Attest:

R. H. JOHNS,
WM. H. JONES.