No. 610,419. Patented Sept. 6, 1898.

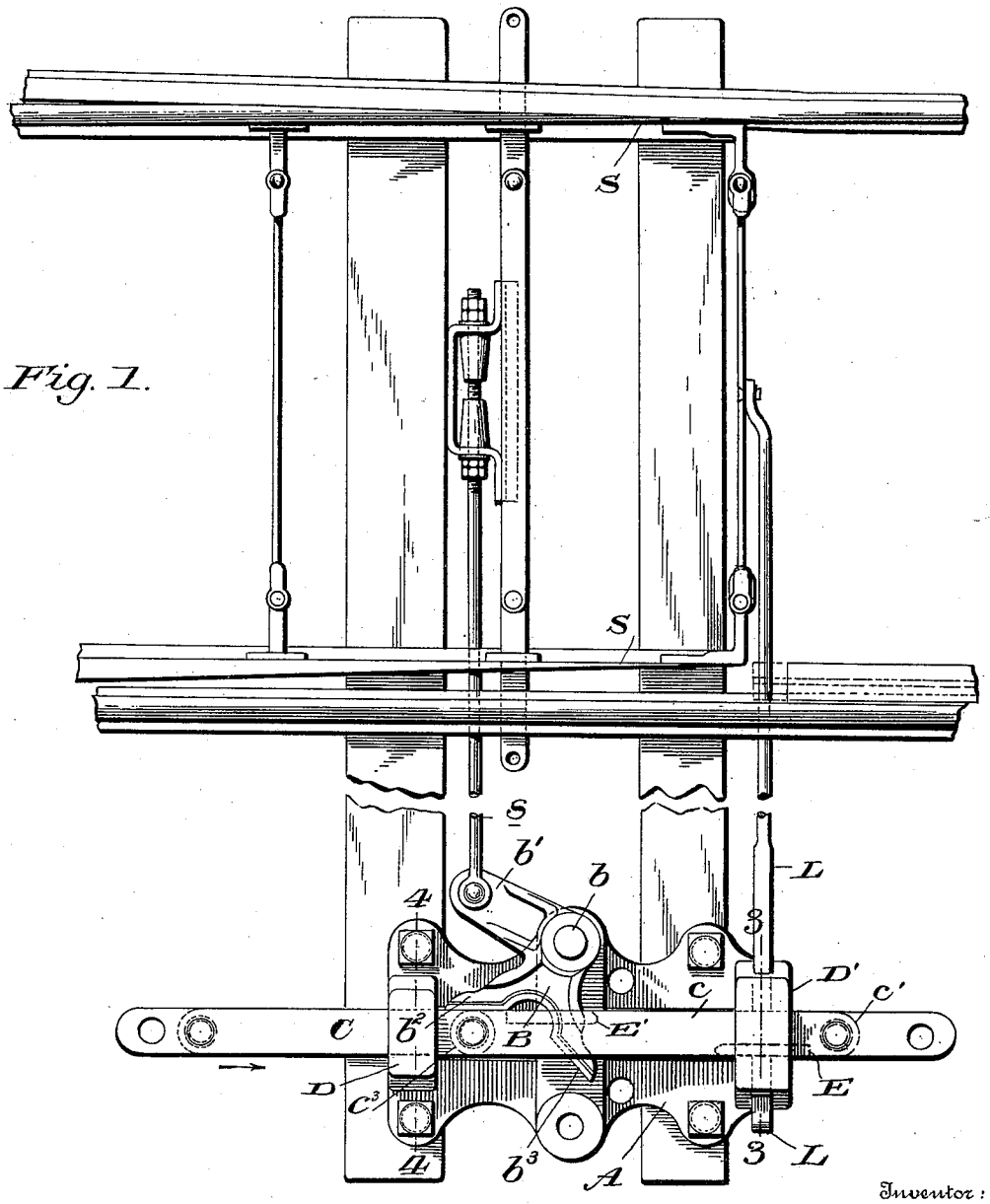
J. W. THOMAS, JR.

RAILWAY SWITCH AND LOCK APPARATUS.

(Application filed June 24, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses

L. C. Hills.

E. W. Goodrich

Inventor:

John W. Thomas, Jr.

By Marcellus Bailey his Attorney

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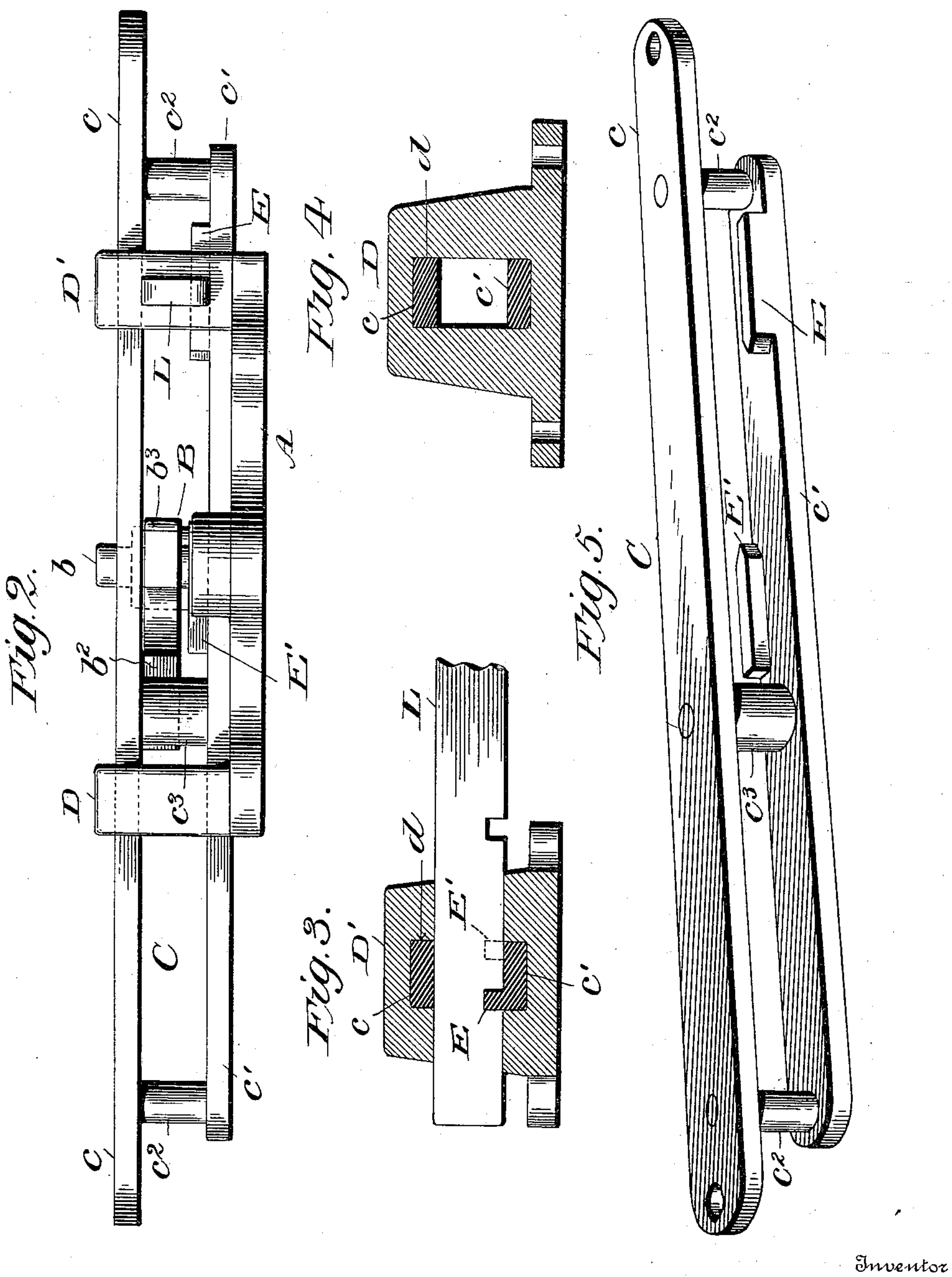

Witnesses
L. C. Hills
[signature]

Inventor:
John W. Thomas, Jr.
by Marcellus Bailey his Attorney

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UNITED STATES PATENT OFFICE.

JOHN W. THOMAS, JR., OF NASHVILLE, TENNESSEE.

RAILWAY SWITCH AND LOCK APPARATUS.

SPECIFICATION forming part of Letters Patent No. 610,419, dated September 6, 1898.

Application filed June 24, 1898. Serial No. 684,376. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. THOMAS, Jr., of the city of Nashville, in the State of Tennessee, have invented certain new and useful Improvements in Railway Switch and Lock Apparatus, of which the following is a specification.

My invention has relation to what is known as a "switch and lock movement"—that is to say, an apparatus by which a railway-switch is both thrown and locked in the position into which it may be thrown so as to be secure against accidental displacement. The apparatus for this purpose ordinarily consists of a pivoted wide-jawed bell-crank lever, usually termed an "alligator-jaw" lever, which is connected to the switch-points and operated by a stud or roll carried by a slide actuated from the signal tower or cabin, said slides carrying locking-dogs one or the other of which at the end of the stroke of the slide engages a notch in a locking-bar which is connected to and moves with the switch-points and plays through a guide in the base-plate of the apparatus crosswise of the path of movement of the slide. Apparatus of this kind is old and in general use.

My invention consists in a novel construction and arrangement of the working parts designed to promote the efficiency, durability, and cheapness of construction of the apparatus, which will first be described in connection with the drawings accompanying and forming part of this specification and will then be more particularly pointed out in the claim.

In the drawings, Figure 1 is a plan of the apparatus. Fig. 2 is a side elevation thereof. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a section on line 4 4, Fig. 1. Fig. 5 is a perspective view of the slide C.

In Fig. 1 I have represented the device connected to the points of a railway-switch.

A is the base of the apparatus, which is suitably secured alongside of the track in proximity to the switch-points S which it is to control.

B is the alligator-jaw lever, pivoted at b to the base-plate, having its arm b' coupled through suitable connections s with the switch-points and having its jaws $b^2 b^3$ adapted to play between the two bars $c\ c'$, which compose the slide C. This slide consists of the top and bottom bars $c\ c'$, which are riveted or bolted together at their ends, suitable spacing-pieces c^2 being employed to hold the two bars the proper interval apart. Between the two bars of the slide is secured the pin or anti-friction-stud c^3, which operates upon the alligator-jaw lever. This pin is at its ends secured to and riveted in the top and bottom bars, respectively, of the slide, and is thus supported against strain and held firmly in place against danger of being bent or broken when operating the alligator-jaw lever. The slide is supported and moves and is guided in end blocks or projections D D', which are formed in one casting with the base A and have formed in them openings d, through which the slide passes and by which it is guided in its movement. The end lug D' has also formed in it a cross channel or passage, through which the locking-bar L moves. The locking-dogs to engage the notches in the locking-bar are shown at E E'. They are located between the two bars $c\ c'$ of the slide and upon the upper face of the lowermost bar c'. Under this arrangement the locking-bar, which extends crosswise of the slide, passes between the top and bottom bars $c\ c'$ thereof, an arrangement which I find of advantage on the score of efficiency and simplicity.

By locating the locking-dogs E E' in the space included between the two bars $c\ c'$ of the slide I am enabled to obtain a slide which is of smooth unbroken exterior without projection of any sort, so that it can be drawn endwise out from its end bearing blocks or projections D D' and can be fitted to them in the same manner. I am thus enabled to make these end blocks D D' with solid tops, as shown, instead of making them open or slotted through at top and providing them with detachable and removable caps, as must be the case when the locking-lugs are upon either one of the exterior faces of the slide, because such a slide can be fitted to its bearing-blocks only by removing the caps from those blocks, so as to expose the slots or openings therein, and then, after the slide has been let down into them, closing them by replacing the caps. Furthermore, the locking-dogs while contained within the compass of the slide are still very accessible and exposed

to view, being for this purpose mounted upon the upper face of the lower bar c', where they are open to inspection and can be readily got at for cleansing or needed repairs.

The operation of the parts is as follows: With the switch in normal position, as in Fig. 1, the alligator-jaw lever assumes the position shown in that figure, with the pin c^3 holding the lever in that position by reason of its contact with the jaw b^2. When it is desired to shift the switch-points, the slide C, by suitable connections from the signal tower, is moved to the right. During this movement the pin c^3 at the proper time will meet the jaw b^3 of the alligator-jaw lever, and will thereby move the lever to its opposite position and cause it to pull over the switch-points, and these points will then be held in their reversed position by the pin c^3, which at the conclusion of the movement will rest against the jaw b^3 of the lever. During the first part of the movement of the slide and before the pin c^3 meets the jaw b^3 of the lever the locking dog or plunger E will be withdrawn from its notch in the locking-bar L, and after the points have been pulled over the other locking-dog, E', will enter and engage the other notch in the locking-bar.

If a detector-bar is used, it is coupled to the slide C and is so arranged that it will be raised during the first part of the stroke of the slide and will be lowered during the last part of the stroke of the slide, as will be understood without further explanation by those skilled in the art to which my invention relates.

Having now described my improvement, what I claim herein as new, and desire to secure by Letters Patent, is as follows:

In a switch and lock movement for operating and controlling railway-switches, a slide composed of top and bottom bars secured together at a proper interval apart, and locking dogs or plungers mounted upon the upper face of the under bar of the slide, in the interval or space between the two bars, in combination with a base provided with solid end bearing-blocks formed with openings for the guidance and support of the slide which passes through them, one of said bearing-blocks being formed also with an additional passage crosswise of the path of movement of the slide to accommodate the locking-bar which is to be engaged by the locking-dogs on the slide, these parts being constructed and arranged together substantially as and for the purposes hereinbefore set forth

In testimony whereof I have hereunto set my hand this 17th day of June, 1898.

JOHN W. THOMAS, JR.

Witnesses:
R. T. SAUNDERS,
THOS. A. CLARKSON.