

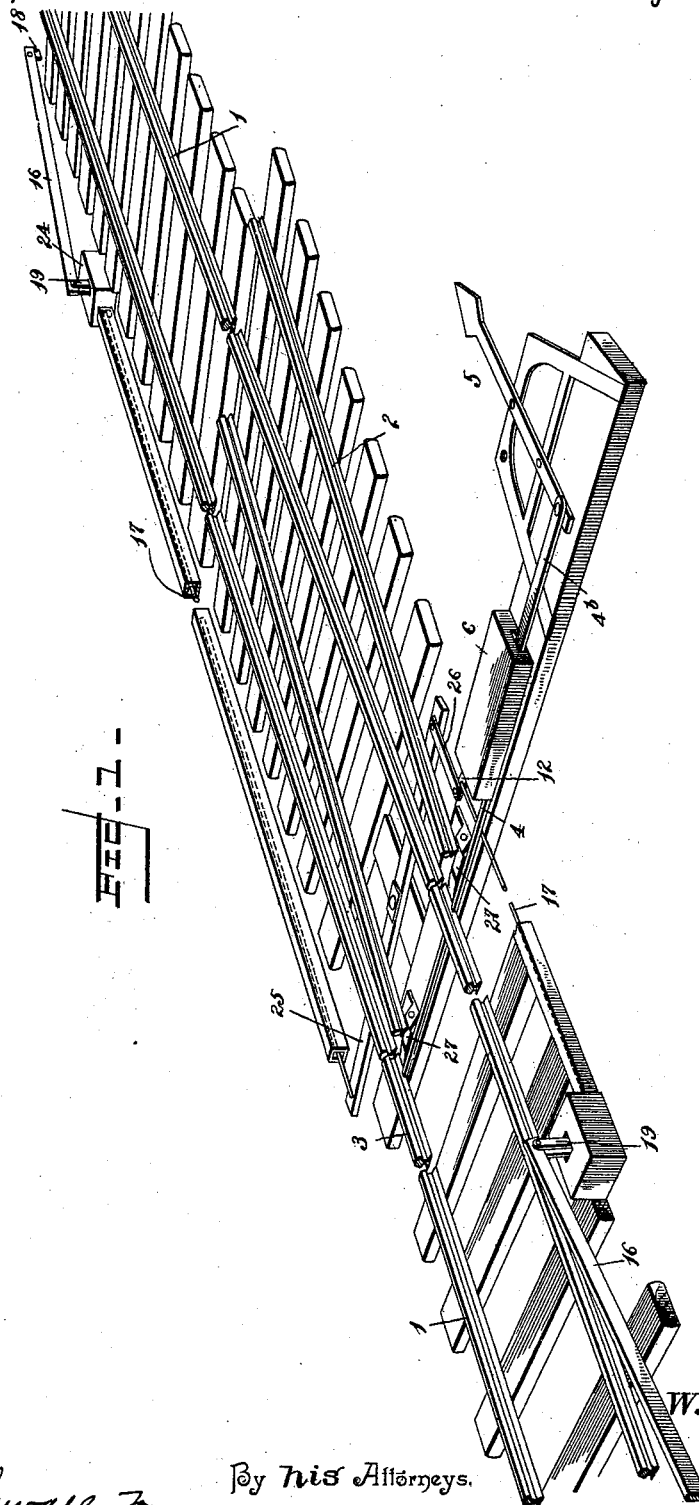
(No Model.)

2 Sheets—Sheet 1.

W. I. WANDS.  
AUTOMATIC SWITCH CLOSER.

No. 522,308.

Patented July 3, 1894.



Inventor  
**W. I. Wands**

Witnesses.

Conf. Duane, Jr.  
O. B. Wolfe.

By *his* Attorneys,

Chas. Snow & Co.

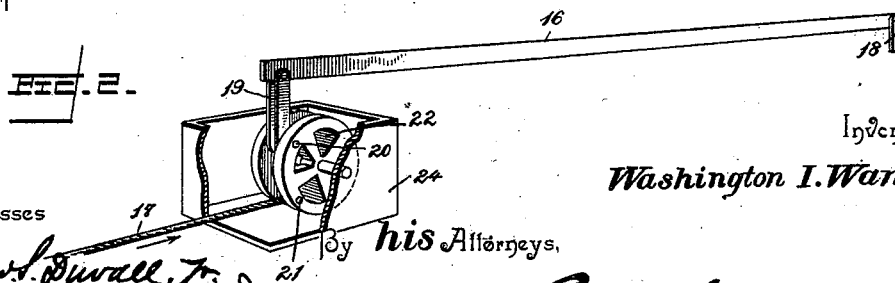
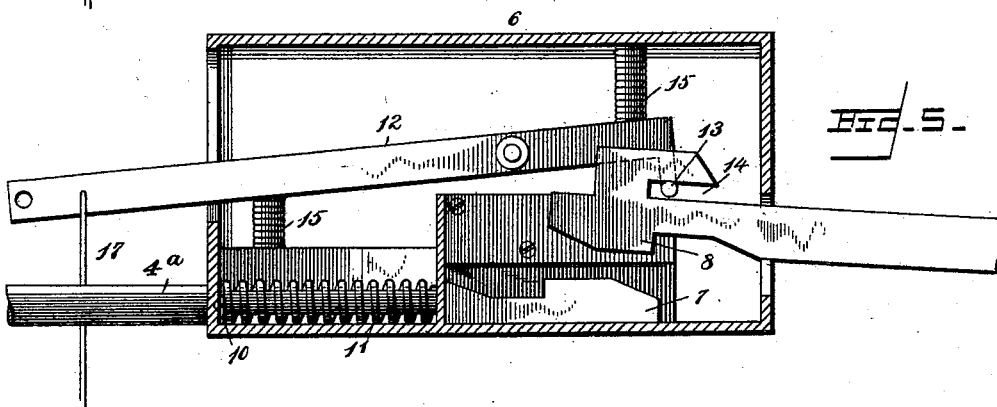
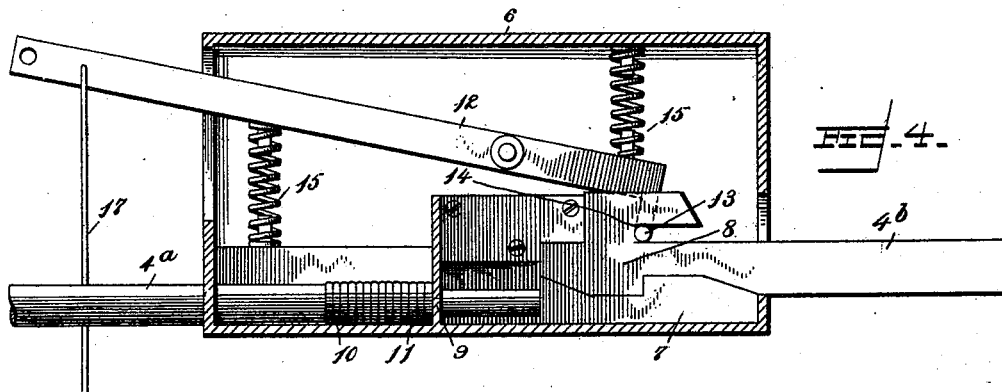
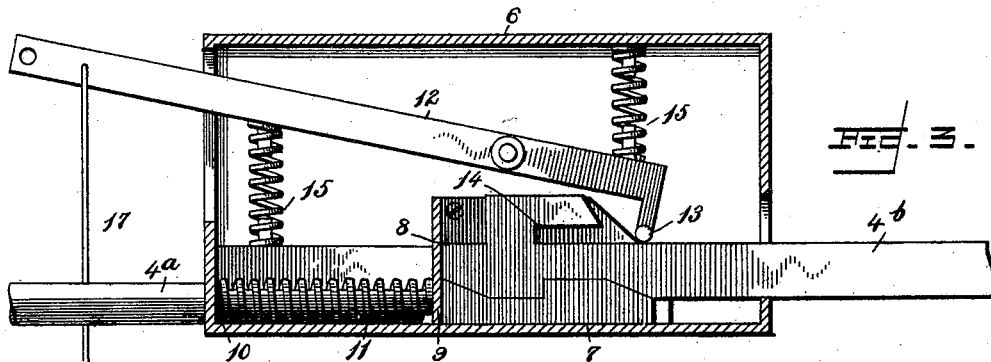
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2 Sheets—Sheet 2.

W. I. WANDS.  
AUTOMATIC SWITCH CLOSER.

No. 522,308.

Patented July 3, 1894.



Witnesses

*Edw. S. Duwall, Jr.*  
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# UNITED STATES PATENT OFFICE.

WASHINGTON I. WANDS, OF KIRWIN, KANSAS, ASSIGNOR OF ONE-FOURTH  
TO HENRY W. LANDES, OF SAME PLACE.

## AUTOMATIC SWITCH-CLOSER.

SPECIFICATION forming part of Letters Patent No. 522,308, dated July 3, 1894.

Application filed November 21, 1893. Serial No. 491,540. (No model.)

*To all whom it may concern:*

Be it known that I, WASHINGTON I. WANDS, a citizen of the United States, residing at Kirwin, in the county of Phillips and State of Kansas, have invented a new and useful Automatic Switch-Closer, of which the following is a specification.

My invention relates to a switch closer adapted to be operated by the train when approaching the switch from either direction, and the objects in view are to provide simple and efficient mechanical means for accomplishing the automatic closing of the switch when the parts of the closer are released by contact with a trip located on the line of the track; and to provide means whereby the switch-rails may be set for the side-track without interfering with the automatic closing devices, or preventing the subsequent return of the rails to their normal positions in connection with the main track.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view of a switch-closing mechanism embodying my invention. Fig. 2 is an enlarged view, with the casing partly broken away, of the trip or trigger whereby the closing mechanism is released. Fig. 3 is a detail view, with the casing partly broken away, of the closer as seen when the switch-rails are in connection with the main track. Fig. 4 is a similar view showing the parts as arranged when the switch-rails are set for the siding track. Fig. 5 is a similar view, showing the arrangement of the parts when released by the operation of the trip or trigger.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the rails of the main track, 2 the rails of the siding track, and 3 the switch-rails which in Fig. 1 are shown in connection with the main track.

4 represents the horizontal, longitudinally-movable switch-bar, which extends beneath and is secured to the switch-rails near their free ends, the other end of said switch-bar being pivotally connected to the lower end of

the switch-lever 5. This switch-bar is divided and comprises two sections or members, which for convenience I will term the rail-section 4<sup>a</sup> and the lever-section 4<sup>b</sup>. These sections overlap within the box or casing 6, and are provided at their contiguous ends with shouldered jaws 7 and 8, respectively, the extremities of said jaws being beveled to facilitate their re-engagement after disconnection.

Between a stationary partition 9, located in the box or casing 6, and a shoulder 10, upon the rail-section of the switch-bar, is a powerful actuating or return spring 11, the function of which is to move the switch-bar toward the track and thus close the switch by bringing the switch-rails into alignment with the main track rails. When the jaws carried by the members of the switch-bar are in engagement, as shown in Fig. 3, the switch-bar may be drawn back by means of the switch-lever 5, to open the switch or bring the switch-rails into alignment with the siding; but, inasmuch as the lever-section of the switch-bar is pivotally connected to the operating lever and is, therefore, capable of a swinging movement, it will be seen that by elevating the jaw 8 the rail-section of the switch-bar will be returned by the actuating spring. Hence, even if the operating lever is locked in the siding-track position, the switch-rails may be returned to their normal or closed position.

In connection with the above-described mechanism I employ a trip-lever 12, also located in the box or casing 6, and provided with a lateral stud 13, which is arranged in position to engage a slot 14, in the jaw 8, when the switch-bar is drawn back to the siding-track position, as shown in Fig. 4. This trip-lever is held, normally, with its stud 13 in alignment with the slot 14, by means of the springs 15, as clearly shown in said Fig. 4. The mechanism whereby this trip-lever is operated after the engagement of the stud 13 with the slot 14 to disconnect the jaws 7 and 8, consists of a trigger 16, arranged near one side of the main track at a considerable distance from the switch, and preferably about three hundred feet; and a counterbalance wheel operated by said trigger and connected, by means

of a cable 17, to the outer or free end of the trip-lever 12. Said trigger consists of a bar of steel, or similar material, pivoted at one end to a standard 18, inclined upwardly toward its free end and provided with a depending link 19, which is fulcrumed upon a bolt 20, on the said wheel. The cable 17, which is preferably of wire, is connected to the other bolt 21, which is located at such a point upon the wheel that when the link 19 is depressed the cable is drawn in the direction indicated by the arrow in Fig. 2. This trigger is adapted to be operated by any suitable arm projecting laterally from the engine of an approaching train, said arm being fixed, whereby as it passes along the upper edge of the trigger the latter is depressed at its free end, thus turning the wheel, drawing upon the wire cable, and throwing the trip-lever into the position shown in Fig. 5, in which the jaws are disengaged and the switch-bar is returned by its actuating spring 11 to its normal position. The counterbalance wheel is provided with a weighted portion 22 to return the trigger to its normal position and allow the cable to be retracted by the springs 15, when said trigger is relieved from engagement with the bar carried by the engine. The wheel is preferably arranged in a box or housing 24, and the cable should be similarly arranged for safety.

From the above description it will be apparent that to set the switch for the siding track, it is necessary to move the switch-bar in opposition to the resistance of the actuating or return spring 11, and therefore when the trip-lever, which is brought into positive engagement with the jaw 8 by the retraction of the switch-bar, is operated by contact with a trigger, it being understood that a trigger constructed as above described is arranged on the main track on each side of the switch, the jaws 7 and 8 will be disengaged, thus removing all opposition to the return, by the actuating spring, of the switch-rails. To communicate the motion of the cable which is arranged upon the far side of the track to the trip-lever, I employ a horizontal intermediate lever 25, which is connected to the trip-lever by a link 26.

In order to facilitate the return of the switch-rails to their normal position, and avoid all unnecessary friction in the movement thereof toward said normal position, I employ wedge-blocks 27, whereby the ends of the switch-rails are elevated slightly as they are moved to alignment with the switch-track. Hence, upon the return movement less resistance is offered and the operation of the actuating or return spring is rendered more positive and certain.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a switch-closing mechanism, the combination of a switch-bar comprising detachable sections connected, respectively, to the switch-rails and an operating lever, and provided with interlocking jaws, an actuating or return spring connected to the rail-section of said switch-bar, a trip-lever connected to one of the interlocking jaws, and means to be operated by a train for moving said trip-lever to disengage the jaws, substantially as specified.

2. In a switch-operating mechanism, the combination of a divided switch-bar having independent sections connected respectively to the switch-rails and an operating lever and provided with interlocking jaws, the jaw of the lever-section being provided with a longitudinal slot, an actuating or return spring connected to the rail-section of the switch-bar, a spring-actuated trip-lever provided with a lateral stud to engage the longitudinal slot in the jaw of the lever-section of the switch-bar when the switch-bar is retracted to the siding-track position, a trigger adapted to be operated by an approaching train, and connections between the trigger and said foot-lever, substantially as specified.

3. In a switch-operating mechanism, the combination of a switch-bar comprising independent rail and lever sections connected, respectively, to the switch-rail and an operating lever and provided with interlocking jaws, an actuating spring to normally hold the rail-section in the main-track position, a trip-lever arranged in operative relation with said jaws to engage the jaw of the lever-section when the switch-bar is retracted to the siding-track position, a pivoted trigger arranged adjacent to the main track, a counterbalance wheel operatively connected to the free end of said trigger, and a cable connecting the trip-lever to the counterbalance wheel, whereby when the trigger is depressed the trip-lever is actuated to disengage the jaws which unite the sections of the switch-bar, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WASHINGTON I. WANDS.

Witnesses:

HENRY W. LANDES,  
E. H. HOWARD.