O. L. LANCE.

AUTOMATIC RAILWAY SWITCH.

APPLICATION FILED OCT. 19, 1910.

**1,033,763.**

Patented July 23, 1912.

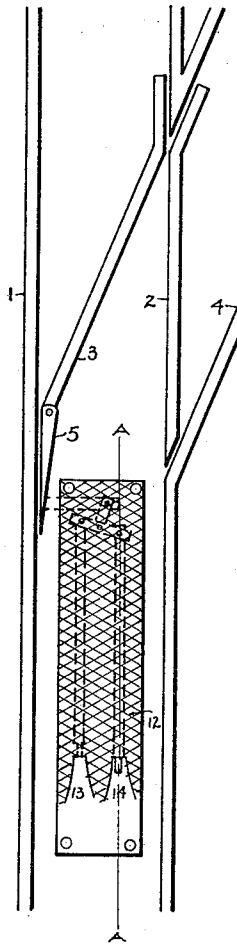


FIG. 1

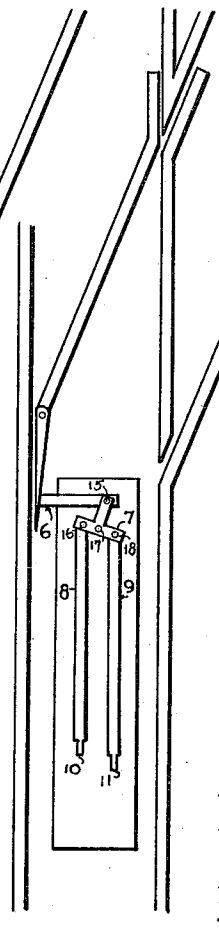


FIG. 2

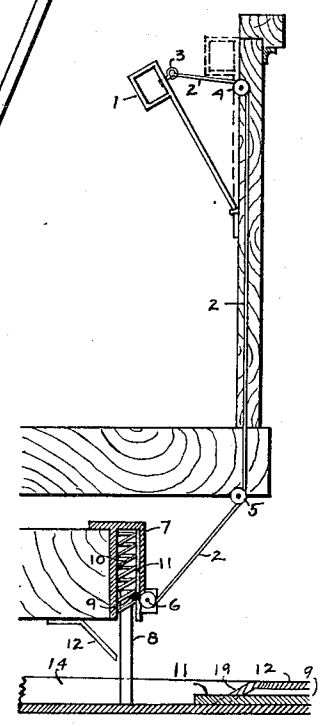


FIG. 3.

WITNESSES

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ORA L. LANCE, OF CORVALLIS, OREGON.

## AUTOMATIC RAILWAY-SWITCH.

1,033,763. Specification of Letters Patent. Patented July 23, 1912.

Application filed October 19, 1910. Serial No. 587,892.

*To all whom it may concern:*

Be it known that I, ORA L. LANCE, a citizen of the United States, residing at Corvallis, State of Oregon, have invented certain new and useful Improvements in Automatic Railway-Switches, and do hereby declare the following to be a full and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Said invention relates to improvements in automatic railway switches and the object is to provide a device of this class which may be operated by an attendant on a moving car as it approaches a switch.

Other objects and advantages will be hereinafter referred to and pointed out in the subjoined description.

In the accompanying drawings which are made a part of this application, Figure 1 is a plan view of a section of an ordinary railway track showing my switch-operating mechanism as applied thereto. Fig. 2 shows Fig. 1 with the covering plate 12 Fig. 1 removed, showing in clear detail the mechanism of the switch operating device. Fig. 3 is a sectional view of the front end of a car showing my attachment thereon for engaging and operating said switch throwing device together with a sectional view of Fig. 1 as seen at line A—A disclosing the mechanism to be operated upon being engaged by a device carried on the car.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 and 2 Fig. 1 indicate the main track rails and 3 and 4 the side track rails. Rail 3 is provided with a switch-tongue 5 Fig. 1 the end of which may be shifted into contact with rail 1 Fig. 1 which serves to direct a car onto the side-track rails 3 and 4. It is shifted out of contact with rail 1 Fig. 1 to retain the car on the main track rails 1 and 2. In order that the switch-tongue 5 Fig. 1 may be shifted from a moving car there is pivoted to it one end of a bar 6, Fig. 2. The other end of bar 6 is connected by pivot 15 Fig. 2 to the middle arm of a T shaped lever 7 Fig. 2. The T shaped lever 7 is pivotally mounted on a tie or other stationary part of the road-bed by means of pivot 17 Fig. 2 and to one of the arms is connected a bar 8 Fig. 2 by pivot 16 and to the other arm in like manner is connected a similar bar 9 Fig. 2. Said bars will be alternately engaged and shifted forward by a device carried on the car, which alternately opens and closes the switch by actuating the T shaped lever 7 Fig. 2 as this shifts switch-tongue 5 Figs. 1 and 2.

In plate 12 Fig. 1 are sunk two concave funnel-shaped guards 13 and 14 Fig. 1, the wide ends of which being on a level with the surface of the plate 12 and gradually deepen toward the narrow ends where they terminate with slanting ends 19 Fig. 3, in which are slots or holes through which extend ends 10 and 11 of bars 8 and 9 Fig. 2. Said ends move into and out of said guards 13 and 14 Fig. 1 alternately as the switch is opened or closed.

In order that the foregoing switch mechanism may be operated from the moving car, there is attached to the frame of the car trucks, or any preferred place, a casing 7 Fig. 3, which carries a depending shaft 8 Fig. 3 directly over funnel-shaped guard 14 Fig. 1. Said shaft 8 Fig. 3 is normally held in a raised position by coil-spring 10 Fig. 3. Fastened to a slug in the upper end of depending shaft 8 Fig. 3 is the end of a rope or cable 2 Fig. 3 which passes down and around pulley 6 Fig. 3, thence around pulley 5 Fig. 3, thence up over pulley 4 Fig. 3, thence to a slug 3 Fig. 3 in the handle 1 Fig. 3 to which it is fastened.

It will now be seen that when the motorman desires to direct the car onto side-track rails 3 and 4 he can do so from his place on the front platform of the moving car. To accomplish this he draws back handle 1 Fig. 3 which pulls with it a rope or cable 2 Fig. 3, one end of which is attached to the said handle the other end after first passing around the pulleys as indicated is attached to the upper end of depending shaft 8 Fig. 3, so that when the handle 1 Fig. 3 is drawn back the rope or cable will pull down depending shaft 8 Fig. 3 so that it will be carried into funnel-shaped guard 14 Fig. 1 where it will be directed into contact with end 11 Fig. 3 of bar 9 Fig. 3 whereupon said bar 9 will be shifted forward thus turning T lever 7 Fig. 2 which throws switch-tongue 5 Fig. 1 into contact with rail 1 Fig. 1 thus directing the car wheels onto said track rails 3 and 4 Fig. 1. When the end 11 Fig. 3 of bar 9 Fig. 3 has been shifted forward sufficient to operate the switch the end of depending bar 8 Fig. 3 which is

wider than end 11 of bar 9 Fig. 3, will have reached the slanting end 19 Fig. 3 which serves to raise said depending shaft out of engagement with end 11 of bar 9 Fig. 3. The switch is now thrown and the motorman releases his hold on handle 1 Fig. 3.

In order that the switch may be either opened or closed there are two car-carried attachments as described, one to be directed into funnel shaped guard 14 Fig. 1 to open the switch and one to be directed into funnel shaped guard 13 Fig. 1 when it is desired to close the switch.

What I claim is:

1. In a device of the class described the combination with track rails and switch rails having a movable tongue operating therewith, of means to automatically open or close said switch comprising a shifting bar pivotally connected to said switch tongue, means to actuate said bar, a T shaped lever centrally pivoted between the track rails, two bars pivotally connected with the arms of said lever and extending parallel between the track rails, a plate having two concave depressions with slanting ends having holes to receive the ends of said parallel bars.

2. In a device of the class described the combination with track rails and switch rails having a movable tongue operating therewith, a shifting bar connecting said switch tongue with a lever, means to operate said lever comprising two bars pivotally connected with the arms of said lever and extending parallel between the rails, a plate covering said bars having two depressions containing slanting ends through which are holes to receive the ends of said bars which are operated by a car carried device, all substantially as set forth.

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Witnesses:
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