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PATENTED OCT. 15, 1907.

L. J. LINDSAY & J. H. CARROLL.

DERAILING SWITCH.

APPLICATION FILED MAR. 18, 1907.

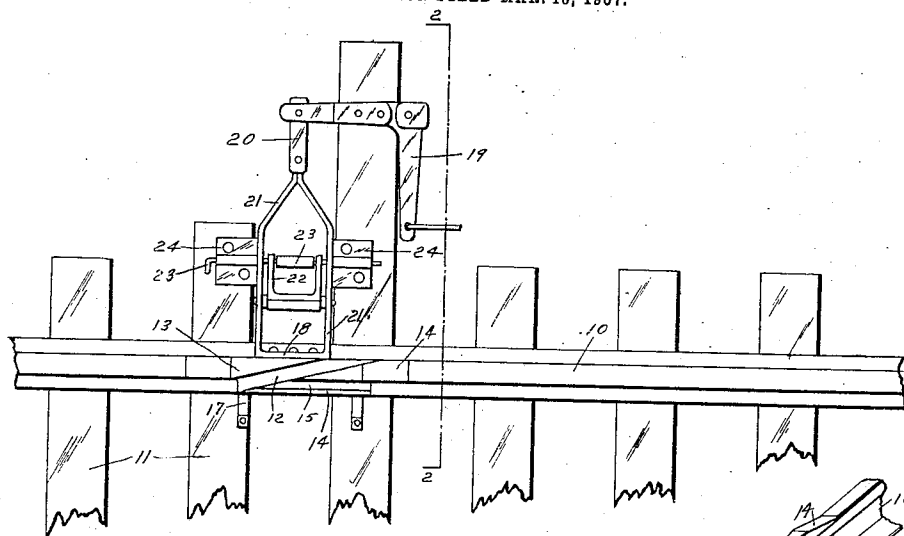


Fig. 1.

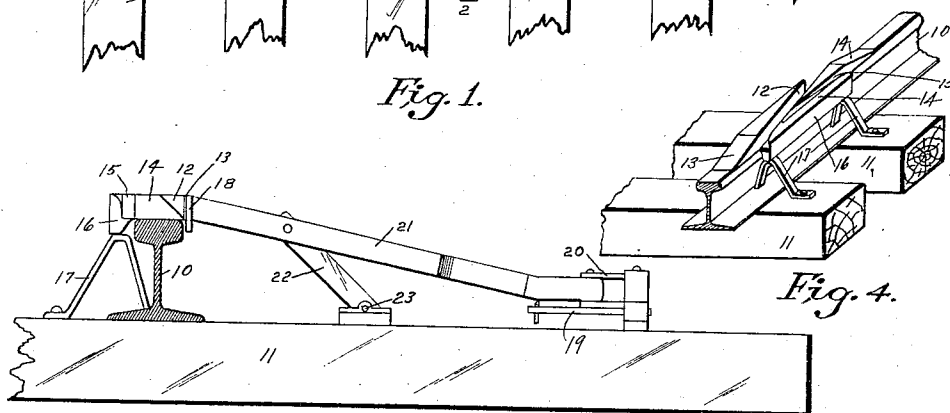


Fig. 2.

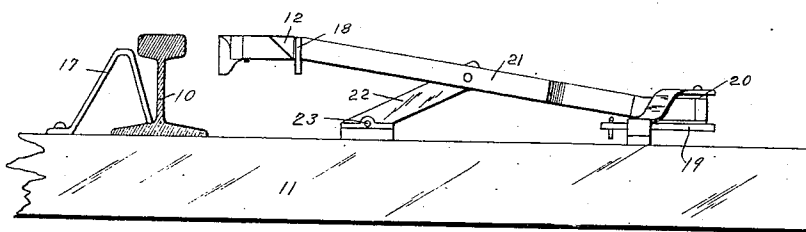


Fig. 3.

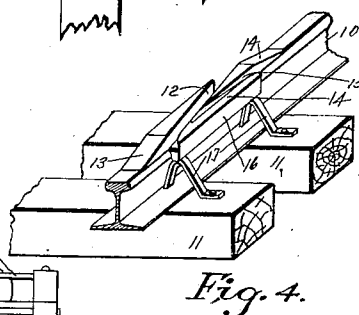


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

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DERAILING-SWITCH.

No. 868,197.

Specification of Letters Patent.

Patented Oct. 15, 1907.

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To all whom it may concern:

Be it known that we, LEROY J. LINDSAY and JOSEPH H. CARROLL, citizens of the United States, residing at Seymour, in the county of Wayne and State of Iowa, have invented a certain new and useful Derailing-Switch, of which the following is a specification.

The object of our invention is to provide a derailing switch of simple, durable and inexpensive construction so arranged that when in position for use, it will rest firmly upon the rail and be held against movement laterally in either direction and when a car wheel approaches it both the wheel tread and the wheel flange will rest upon the derailing switch and be directed to the outer side of the rail, thus avoiding danger of breaking the flange of the wheel and when the derailing switch is in its position out of use, it will stand wholly outside of the rails and out of contact therewith.

A further object is to provide a switch operating device of simple, durable and inexpensive construction that may be operated to move the switch proper from one position to another easily and quickly and with a minimum of applied power.

Our invention consists of certain details in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in our claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a plan view of a railway rail and our improved derailing switch applied thereto and shown in its position for use. Fig. 2 shows a sectional view on the line 2—2 of Fig. 1. Fig. 3 shows a similar view with the switch in its position away from the rail, and Fig. 4 shows a perspective view of the derailing plate resting on a rail.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the track rail and 11 the cross ties.

The derailing switch plate is preferably formed complete of a single piece of metal and is designed to lie flat on top of the rail 10. In its top is a diagonal groove 12 extending from a point at one end adjacent to the inner edge of the rail top to a point at its other end beyond the outer edge of the rail top. At the outer side of the groove 12 is the guide rib 13 and at the inner side is the guide rib 14. The ends of both of these ribs that are directly over the rail are beveled to a thin edge adjacent to the top of the rib. Formed in the rib 14 is a groove 15 so arranged as to receive the flange of a rail when moving in a direction toward the left of Fig. 1 and cause the flange to pass over the ribs 14 and 13 and direct the wheel to the rail after passing the derailing plate so that if a car wheel should approach the derailing plate going in the direction from right to left, as shown in Fig. 1, the wheel will not be derailed. On the under surface of the inner edge of the derailing

plate is a downwardly projecting flange 16 designed to prevent the derailing plate from moving outwardly off of the rail without first being elevated. We have provided a rigid support 17 fixed to the cross ties to engage and support said flange 17. Fixed to the outer edge of the derailing plate is a bar 18 projected downwardly below the top of the rail to prevent the derailing plate from moving inwardly off of the rail without first being elevated. By means of the flange 16 and the bar 18, the derailing plate will be firmly and securely held upon the top of the rail against movement either inwardly or outwardly without first raising the plate above the rail and on account of the shape of the ribs and grooves in the top of the derailing plate a car wheel approaching it from the left to the right will be raised above the rail, the tread portion of the wheel resting upon the rib 13 and the flange of the wheel resting in the groove 12 and the wheel will be carried thereby over the rail and be directed off of the rail at the end of the derailing plate. By thus having both the flange and the tread of the wheel supported by the derailing plate, we avoid danger of breaking the wheel flange during the process of derailing the wheel.

We have provided for operating the derailing plate as follows: Mounted upon one of the cross ties is a bell-crank lever 19. Pivoted in one end of this bell-crank lever is a link 20 extended in a direction toward the rail 10. Pivoted to the said link 20 is a derailing plate supporting frame 21 fixed to the derailing plate. Pivoted between the sides of the frame 21 is a lever 22 having parallel sides which are pivoted to a rod 23, which rod is detachably supported in the brackets 24 on top of the adjacent cross ties. The shape of the lever 22 is such that when the bell-crank lever 19 is adjusted from the position, shown in Fig. 1, to its other limit of movement, the derailing plate supporting frame 21 will be first moved in a direction causing the derailing plate to be elevated above the rail and then moved outwardly over the rail and then downwardly to the position shown in Fig. 3, or it will be supported out of contact with the rail and when the bell-crank lever 19 is moved in the opposite direction, the derailing plate will be moved toward the rail and elevated over it and then lowered to the position shown in Fig. 2. By using the link 20 to connect the bell-crank lever with the frame 21, we avoid all binding strains upon the bearings of said frame and the operation of the derailing plate from one position to another is made very easy.

Having thus described our invention, what we claim and desire to secure by Letters Patent of the United States, therefor is—

1. In a derailing switch, the combination of a derailing plate designed to rest on top of a rail, and provided with a diagonally arranged groove to engage a wheel flange, and cause the wheel to move over the rail to the outer side thereof, a supporting frame fixed to the plate, and extended outwardly therefrom, means attached to the outer

- end of the supporting frame for moving it toward and from the rail, and a lever fulcrumed to a stationary support between the rail and the outer end of the frame, and pivotally connected with the said frame between its ends,
- 5 said levers so shaped and proportioned that when the supporting frame is moved away from a rail, the derailing plate will first be elevated and then moved to a position spaced apart from the rail.
2. In a device of the class described, a derailing plate
- 10 designed to rest on top of a railway rail and having flanges at its sides to project downwardly along the sides of the rail and having in its top a diagonal groove to receive the flange of the rail, a raised rib having a beveled end to receive the tread portion of a wheel and cause it to move
- 15 from the top of the rail upwardly across the derailing plate to the outer edge of the rail, and a rib on the other side of the groove, said rib provided with a groove designed to direct a wheel flange upwardly over the rib and into the said diagonal groove to prevent said wheel from becoming
- 20 derailed.
3. In a device of the class described, a derailing plate designed to rest on top of a railway rail and having a diagonal groove therein, a rib at one side of said groove having a beveled portion projecting beyond the groove to the
- 25 top of a rail and also having a rib at the other side of the

groove projecting beyond the groove and extending to the top of the rail, said latter rib having a groove therein inclined from the bottom of the plate to the top of the rib adjacent to the said diagonal groove, the diagonal groove and the first-mentioned rib shaped to derail a wheel passing over the plate in one direction and the other rib and groove designed to carry a wheel over the derailing plate without derailing it.

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4. In a device of the class described, the combination of a derailing plate having flanges projecting below the stationary supports to receive the inner flange when the plate is resting on a rail, a supporting frame fixed to the plate and extended outwardly therefrom, a link pivoted to the outer end of the supporting frame, a bell-crank lever connected with said link and a lever fulcrumed to a stationary support and pivotally connected with the supporting frame, said lever so shaped and proportioned that when the supporting frame is moved away from a rail the derailing plate will first be elevated so that its flanges clear the rail.

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