

UNITED STATES PATENT OFFICE.

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DERAILING-SWITCH.

SPECIFICATION forming part of Letters Patent No. 711,308, dated October 14, 1902.

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To all whom it may concern:

Be it known that I, JOSEPH C. HARE, a citizen of the United States, residing at Greencastle, in the county of Putnam and State of Indiana, have invented certain new and useful Improvements in Derailing-Switches, of which the following is a specification.

My invention relates to an improvement in derailing-switches, primarily for preventing a cut of cars from passing accidentally from a side track onto the main track.

The object of my invention is to produce a device of the class described which may be readily thrown into or out of operative position and which will be absolute in operation.

A further object of my invention is to so form the switch that when in operative position it will insure the derailment of cars passing in one direction along the track, but when cars pass in the opposite direction along the track they may ride safely over the switch and remain upon the track.

The accompanying drawings illustrate my invention.

Figure 1 is a plan showing my device in operative position upon a rail. Fig. 2 is a side elevation. Fig. 3 is an end elevation. Fig. 4 is a transverse section on line 4 4 of Fig. 1. Fig. 5 is a transverse section on line 5 5 of Fig. 1. Fig. 6 is a traverse section on line 6 6 of Fig. 1. Fig. 7 is a transverse section on line 7 7 of Fig. 1.

In the drawings, 10 indicates a body-plate of sufficient thickness to bear the stress which will be placed upon it, and this plate is provided along one edge with a series of ears 11, adapted to be pivoted upon a horizontal axis parallel to the rail 12 in suitable standards 13, attached to the ties 14. Erected upon plate 10, at a point inside of the rail 12 a distance somewhat greater than that occupied by the flange of a car-wheel, is a longitudinal rib 15, which at its middle is curved toward the rail to form a point or inset portion 16. Erected upon plate 10, opposite one end of rib 15, is a rib 17, which extends to a point somewhat beyond the point 16 of rib 15. This rib 17 is carried by that portion of plate 10 which rests upon the rail 12 and is formed with a wedge-shaped tongue 17', which projects from the plate 10 out along rail 12, the upper face of

the tongue 17' being inclined and leading upward from the rail to the highest point of rib 17. The angle of inclination of the top face of tongue 17', the height of rib 17, and the length of the tongue are such that the tread of a car-wheel will strike the tip of the tongue and will ride up along the incline, passing from thence to the tip of rib 17 without the flange of the wheel seriously engaging the plate 10. That vertical face of rib 17 which lies opposite rib 15 is inclined to the rail 12 and leads from the inside of the rail to its outside, so as to form between ribs 17 and 19 a channel 18, which leads from one side of the rail to the other across the top thereof.

Projected from that end of plate 10 opposite tongue 17' is an inclined wedge-shaped tongue 19', which leads upward to a V-shaped rib 19 of substantially the same height in its main portion as rib 17. The vertical face of rib 19 which lies opposite the adjacent portion of rib 15 is substantially parallel with the adjacent portion of rib 15, so as to form a channel 18', through which the flange of a car-wheel may pass. The tip or apex of rib 19 is preferably rounded and declined slightly, as shown at 20, and that vertical face which lies adjacent to the inner end of rib 17 is made substantially parallel thereto, so as to aid in forming a continuation of the channel 18. Point 16 of rib 15 is considerably nearer the rail than are the ends of the rib, and at the bottom of point 16 is preferably formed a fillet, as shown at 16'. This fillet engages the flange of the wheel and assists in deflecting the wheel into the proper channel.

In operation a car-wheel passing from left to right in Fig. 1 will have its tread brought first into engagement with the projecting tongue 17' and will ride up the incline thereof onto rib 17, the flange of the wheel clearing or practically clearing plate 10 and lying in channel 18. As the car-wheel advances the flange of the wheel comes in contact with the point 16 of rib 15 and fillet 16' at the bottom thereof and is by it deflected toward the inclined vertical face of the rib 17 and guided into that portion of channel 18 which lies between the ends of ribs 17 and 19. The flange of the wheel is thus lifted above the rail and passed over the same, so as to be derailed.

If the car-wheel is passing from right to left in Fig. 1, however, the tread of the wheel comes into engagement with the wedge-shaped tongue 19' and rides up the incline thereof onto rib 19, the flange of the wheel lying in groove 18'. As the wheel rolls forward upon rib 19 it is gradually lowered by the declined end 20 of the rib, so as to allow the flange of the wheel to run upon plate 10. During this advancement the flange of the wheel has come into engagement with the right-hand end of the rib 15 and has been by it and the point 16 thereof deflected toward rib 17. Continued advancement brings the tread of the wheel upon the declined end 17' of rib 17, so that the wheel will ride up on said rib. The flange of the wheel is then brought into engagement with the inclined vertical face of rib 17 and by it deflected in the opposite direction into groove 18. The wheel then passes down the inclined tongue 17' to the track, so that cars passing in this direction over my device will not be derailed.

So far as I am aware I am the first to produce a derailing-switch which can be applied to a rail and which is of such construction that cars passing in one direction upon the track will be derailed thereby, while cars passing in the opposite direction will pass safely thereover and return to the track.

I claim as my invention—

1. A derailing-switch consisting of a body-plate, a pair of aligned inclines arranged to lie upon a track-rail and leading toward the plate, a flange-channel extending diagonally across the line of the inclines between the ad-

jacent ends thereof, and means for engaging the flange of a wheel and deflecting the same into the diagonal channel when the wheel runs in one direction but allowing the flange to pass said channel when running in the opposite direction.

2. A derailing-switch consisting of a body-plate, ribs 17 and 19 carried thereby and so arranged as to form a diagonal flange-channel therebetween, inclines 17' and 19' extending in opposite directions and leading upward to the ribs 17 and 19, respectively, the said inclines being adapted to lie upon a track-rail, a rib 15 arranged in conjunction with ribs 17 and 19 to form a flange-channel substantially parallel therewith and connecting with the first-mentioned flange-channel, and a deflecting-point 16, substantially as described.

3. A derailing-switch consisting of a body-plate, a Y flange-channel formed therein, with one arm leading diagonally across the plate, means at each end of the plate for elevating a wheel from the track so as to direct the flange into the adjacent end of one arm of the channel, and means for engaging said flange and deflecting the same into the diagonal arm of the channel when the wheel runs across the body-plate in one direction only.

In witness whereof I have hereunto set my hand and seal, at Greencastle, Putnam county, Indiana, this 22d day of February, A. D. 1902.

JOSEPH C. HARE. [L. S.]

Witnesses:

F. E. PECK,
F. E. CRAWLEY.