M. RYAN.

GUARD RAIL.

APPLICATION FILED FEB. 26, 1912.

1,038,969. Patented Sept. 17, 1912.

Fig. 1.

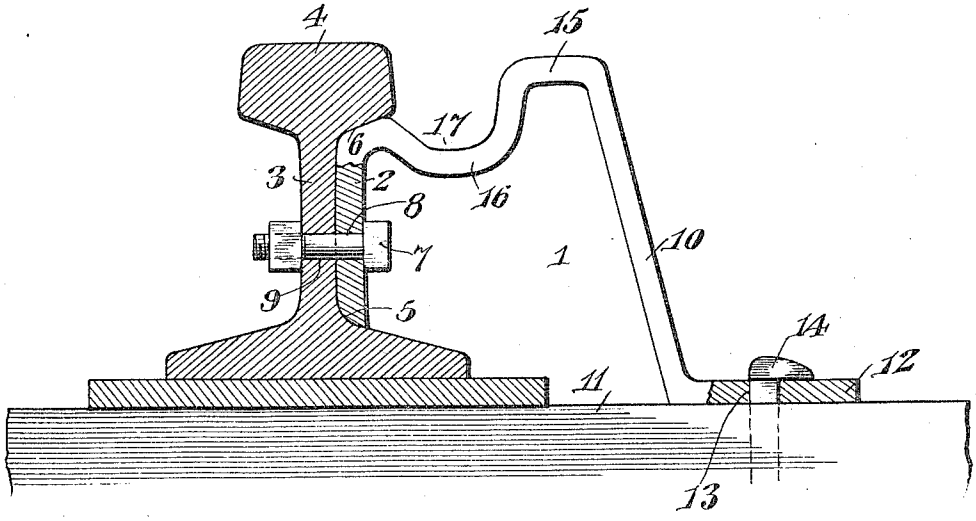
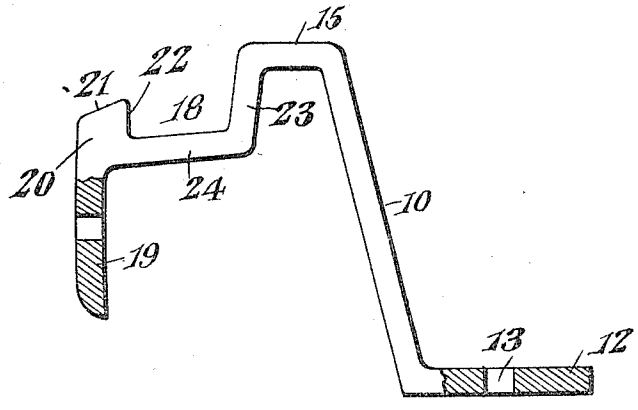


Fig. 2.



WITNESSES

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GUARD-RAIL.

1,038,969. Specification of Letters Patent. Patented Sept. 17, 1912.

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To all whom it may concern:

Be it known that I, MICHAEL RYAN, a citizen of the United States, residing at Somerville, in the county of Somerset and State of New Jersey, have invented a new and useful Guard-Rail, of which the following is a specification.

The invention relates to improvements in guard rails.

Heretofore when a railroad crosses a street or a road, planks have generally been used inside and outside of the rails, and the great difficulty has been with the inside planks as the flanges of the car wheels continuously force dirt and snow down between the rail and such planks, lift the latter, which sometimes results in derailing cars or otherwise injuring a train equipment, and frequently in causing the feet of persons and animals to become caught between the planks and the rails.

The object of the present invention is to provide a simple, efficient and comparatively inexpensive guard rail, adapted to dispense with inside planks, and capable of eliminating all danger incident to the use of the latter, and adapted also to be easily applied to a track and readily removed therefrom to permit the latter to be repaired or for any other purpose.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing and pointed out in the claim hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is an end elevation partly in section of a guard rail, constructed in accordance with this invention, and shown applied to a rail and a cross tie. Fig. 2 is a similar view, showing a slightly different form of guard rail.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates a guard rail constructed of pressed steel and provided with a straight inner vertical side or wall 2, fitting flat against the web 3 of the rail 4 from the bottom flange to the head thereof, and having a lower beveled or rounded edge 5, to fit the bottom portion of the rail and an upper beveled edge or face 6 to conform to the configuration of and fitted against the underside of the head of the rail. The vertical side or wall 2 is secured to the web of the rail by transverse bolts 7, arranged at suitable intervals and extending through registering openings 8 and 9 of the side or wall 2 and the web 3. The guard rail is designed to be constructed in sections of any preferred length, say from twelve to fifteen feet, and they are designed to be cut away at the rail joint so as to fit the fish plates thereof. The guard rail is also provided with a straight inclined outer wall 10, spaced from the rail 4 and extending upwardly from the cross tie 11 and formed integral with a foot flange 12, connected with the inclined side or wall 10 at the bottom thereof and provided with openings 13 to enable it to be secured to the cross ties by spikes 14. The foot flange 12 is designed to be spiked to each of the cross ties and be seated upon the same in spaced relation with the bottom of the rail. The inclined side or wall 10 extends upwardly to a point above the plane of the upper edge of the vertical side or wall 2, and it is connected with the same by an integral top consisting of a straight approximately horizontal portion 15 and a longitudinally grooved portion 16. The straight horizontal portion 15 extends inwardly from the top of the side or wall 10 in the direction of the rail, and the grooved portion 16 extends downwardly from the horizontal portion 15 and inwardly to the head of the rail, being connected with the side or wall 2 at the upper edge. The horizontal portion 15 is located slightly below the tread of the rail, but in the plane of the head thereof, and the grooved portion 16, which extends below the head of the rail, forms a flange-way for the passage of the flanges of the car wheels to prevent the same from coming in contact with the guard rail. The groove 17 extends downwardly from the lower face of the head of the rail, and the flat head 15 and the inclined wall 10 are adapted to obviate the necessity of providing an inner plank, and the space between the rails may be filled in with broken stone, or any other suitable material. When it is desired to board such space, the guard

rail will prevent the boards or planks from being forced upward by the action of the car wheels. When it is desired to repair the track or take up the guard rail for any other purpose, the spikes may be extracted and the bolts removed.

When the guard rail is constructed of cast steel, it is preferably in the form shown in Fig. 2 of the drawing, the groove 18 being angular and the vertical side or wall 19 being enlarged at its upper portion at 20 to form the inclined upper face or edge 21. The enlargement is also provided with a vertical side face 22, constituting one of the side walls of the groove 18. The opposite side wall 23 and the bottom 24 of the groove are also preferably straight instead of curved, as shown in Fig. 1.

The ends of the guard rail will in practice be curved outward from the rails in the usual manner, so that there will be no liability of the flange of a wheel striking against the end of the guard rail.

What is claimed is:—

A guard rail of the class described comprising an inner vertical side or wall adapted to fit against the web of a rail and extending from the bottom flange of the same to the head thereof and having an inclined upper edge fitting against the underside of the head of the rail and extending from the web to the side face of the head, an outer inclined side or wall provided at the bottom with a foot flange seated upon the cross tie in spaced relation with the rail and adapted to be spiked to the same, an integral top having an approximately horizontal head portion at the top of and extending inwardly from the inclined outer side or wall, and a longitudinally grooved portion extending downwardly from the head portion and inwardly to the upper portion of the inner side or wall, the bottom of the groove being located below the plane of the inclined upper edge of the inner side or wall, and bolts piercing the inner side or wall for securing the same to the web of the rail.

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

MICHAEL RYAN.

Witnesses:

EDWARD KELLEY,

SAMUEL P. SUTPHEN,