No. 828,949. PATENTED AUG. 21, 1906.

G. W. MERRELL.

GUARD RAIL BRACE PLATE.

APPLICATION FILED MAY 15, 1906.

FIG. 1.

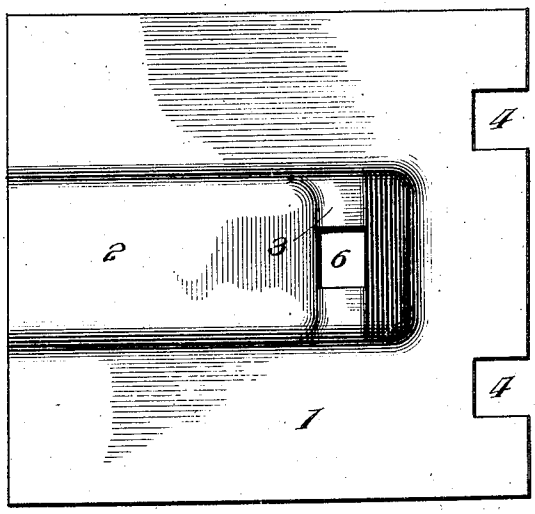


FIG. 2.

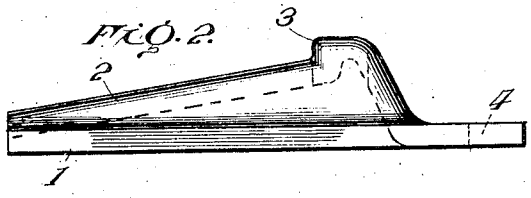
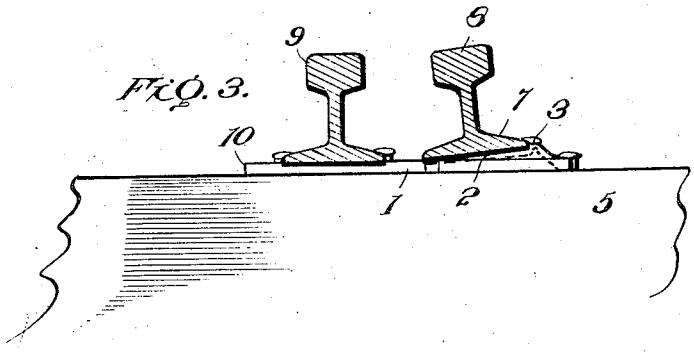


FIG. 3.



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UNITED STATES PATENT OFFICE.

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GUARD-RAIL BRACE-PLATE.

No. 828,949. Specification of Letters Patent. Patented Aug. 21, 1906.

Application filed May 15, 1906. Serial No. 316,993.

To all whom it may concern:

Be it known that I, GURDON W. MERRELL, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Guard-Rail Brace-Plates; and I do hereby declare the following to be a full, clear, 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.

My invention relates to certain new and useful improvements in means for securing guard-rails of railroads in proper position and maintaining the same in such position.

It is well known to those familiar with railroad construction that guard-rails are absolutely necessary at many points in railroad-tracks, and particularly on curves, to prevent the wheel in any truck of a passing engine or train from mounting and crossing over the outside of the curve. This guard-rail is located between the two track-rails and so near the rail on the inside of the curve that it will engage the flange of the wheel and prevent the opposite wheel from mounting the outside rail. As the weight and size of rails have steadily increased, many railroads are using rails of such width at the base that two rails laid side by side are necessarily (owing to the width of base) too far apart for one of said rails to act as a guard-rail for the other, owing to the consequent distance between the tops of the rails being so great that a wheel on the outside may mount the outside rail before the flange of the opposite wheel would contact with the guard-rail, and hence the guard-rail loses its efficiency.

My invention is designed to overcome the conditions referred to and to provide a guard-rail brace-plate for use under guard-rails, which shall tilt the guard-rail toward the track-rail to such predetermined extent as to secure the exact or necessary gage-distance between the tops of the two rails and at the same time serve to thoroughly brace the guard-rail.

With these ends and objects in view my invention consists in the details of construction and arrangement hereinafter and more fully described.

In order that those skilled in the art to which my invention appertains may know how to make and apply my improved guard-rail brace-plate and fully appreciate its advantages, I will proceed to describe its construction and the manner of using the same, referring by numerals to the accompanying drawings, in which—

Figure 1 is a plan view of the plate. Fig. 2 is a side elevation of the same, and Fig. 3 is a detail view showing a railroad-tie and my improved plate in side elevation with an inside track-rail and guard-rail in cross-section and secured in proper relation.

Similar reference-numerals indicate like parts in the several figures of the drawings.

The brace-plate is composed, preferably, of steel or iron pressed into shape, with a flat base 1 adapted to rest upon and to be secured to the railroad-tie, and is formed with a central raised portion 2 of any predetermined inclination terminating at its upper extremity in a projection or shoulder 3. The base 1 extends beyond the raised portion, as shown, and is formed with spike-passages 4 4 for spikes, which serve to secure the plate in proper position upon the tie 5. Another spike-passage 6 is formed in the plate back of the shoulder or projection 3 to receive a spike which passes through the plate and into the tie in such manner that the head embraces the base 7 of the rail 8, as clearly shown in Fig. 3.

In Fig. 3 the inside track-rail is designated by the numeral 9 and is secured in the usual manner to the tie 5 upon an ordinary tie-plate 10 of any desired thickness, and, as shown, my improved guard-rail brace-plate at its lower edge is of the same thickness as the tie-plate 10, so that the bases of the two rails 8 and 9 at their adjacent edges are in the same plane when said rails are of the same weight and height, and the proper gage between the tops of said rail is secured by the predetermined inclination of the bearing-surface 2 of the brace-plate. It will, however, be understood that one of the advantages of my improved brace-plate resides in the fact that by increasing the thickness or height of said plate and its predetermined inclination, guard-rails of lighter weight and less height than the standard track-rail may be used.

While I have shown the brace-plate with a single and central raised and inclined bearing-surface terminating at the upper extremity in a shoulder or projection, it will be understood that I do not wish to be limited in this particular and that, if thought desirable, the plate may be formed with similar bearing-surfaces in duplicate, and likewise

the width of the bearing-surface may be increased and provision made for the employment of a greater number of spikes.

As heretofore stated, my improved guard-rail brace-plate may be used with rails of the present standard weight to secure results unattainable without such a plate, and, on the other hand, the thickness of the plate and the inclination of the bearing-surface are to be determined by the height and contour of the two rails to be used as guard-rail and track-rail, respectively, and such plate not only acts to support the guard-rail, but to also serve as an efficient brace for said rail.

While, as I have heretofore stated, I prefer to produce my device by pressing steel or iron plates into the form described and shown, I do not wish to be limited in this respect, as said plates may be made in any other manner.

Having described the construction and advantages of my improved guard-rail brace-plate, what I claim as new, and desire to secure by Letters Patent, is—

A guard-rail brace-plate formed of a single piece of metal with suitable spike-holes therein, and having an inclined bearing-surface for the rail, said bearing-surface terminating at its upper extremity in a shoulder or projection adapted to contact with the edge of the base of the rail, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GURDON W. MERRELL.

Witnesses:
E. M. WILSON,
W. H. PAYNE.