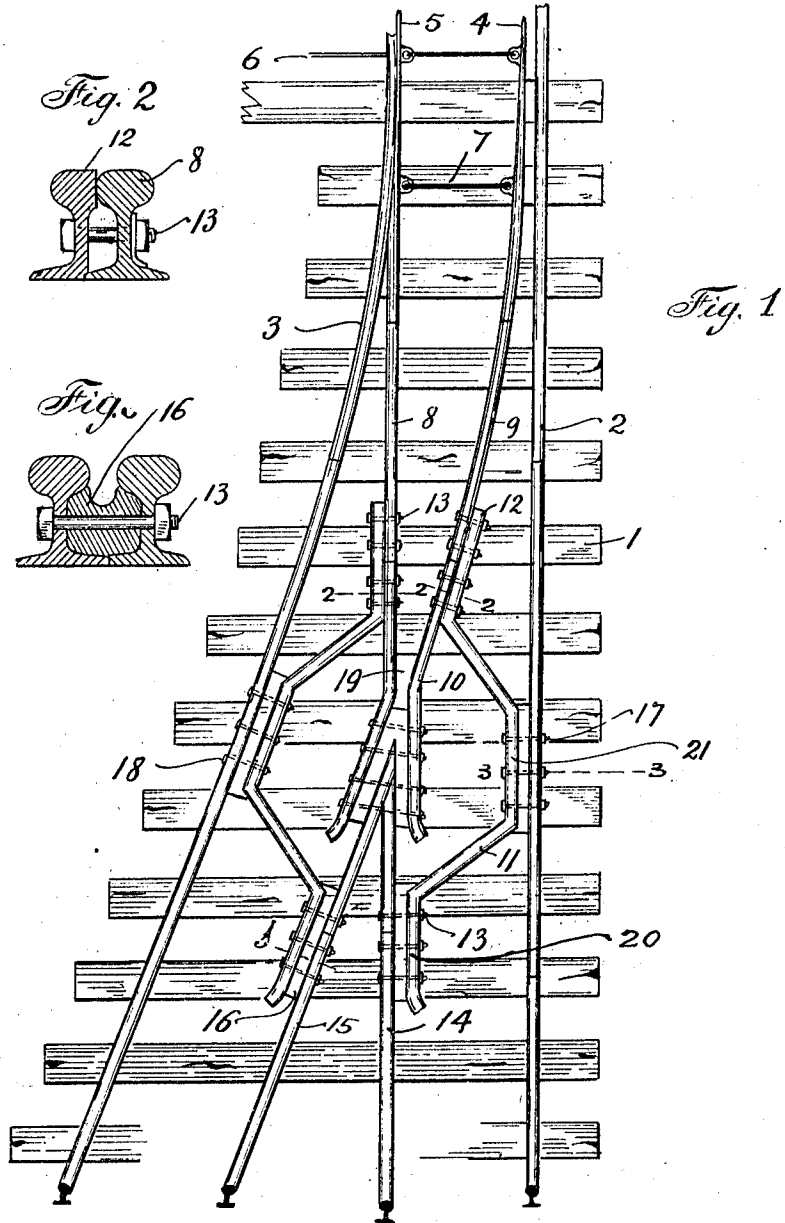


J. W. KELLEY.
GUARD RAIL.
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1,041,094.

Patented Oct. 15, 1912.



WITNESSES
L. W. Shaper
Jas. Winter

INVENTOR
John W. Kelley
By Robt. Kelly
Atty.

UNITED STATES PATENT OFFICE.

JOHN W. KELLEY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO DAVID R. MILLER
AND WILLIAM PANSCHER, OF CHICAGO, ILLINOIS.

GUARD-RAIL.

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To all whom it may concern:

Be it known that I, JOHN W. KELLEY, a citizen of the United States, residing at Chicago, Illinois, have invented a certain new and useful Improvement in Guard-Rails, of which the following is a specification.

The primary object of this invention is to provide an improved form of guard-rails adapted to be used in connection with frogs for railway tracks, and to provide a structure which is simple, inexpensive, which can readily be made out of materials which are nearly always on hand in every railway yard, and which will, in addition, be superior to all known devices of this class for the reasons hereinafter more particularly set forth.

In the drawings Figure 1 is a plan view of a portion of track including a frog equipped with this invention; Fig. 2 is a sectional view on the lines 2—2, Fig. 1; and Fig. 3 is a sectional view on the lines 3—3, Fig. 1.

The frog, in connection with which the invention is shown in the drawings, is represented as being used adjacent to a switch point, and the tracks are shown as being a main track and a side track; but it should be understood, however, that the invention can be used in connection with crossing tracks as well as in connection with switch points. In the specific form shown in Fig. 1, the various rails are supported upon the ties 1, there being the customary straight main-track rail 2, the bent rail 3, which is the left-hand rail of the main track, above the switch point and the left-hand rail of the switch track below the switch point. The point rails 4 and 5 are controlled by the lever 6 and link 7, and are connected, respectively, to the left-hand rail 8 of the main track and the right-hand rail 9 of the switch track. The frog 10 provides a crossing for rails 8 and 9.

The guard-rails 11 are shaped as shown in the drawings and are formed with arms 12 which are adapted to be secured by bolts 13 to the rails 8 and 9 and to the frog 10 at the joints between the frog and said rails, and, also, at the joints between the frog 10 and the rails 14 and 15, it being obvious from the drawings that rails 14 and 15 are the continuations of rails 8 and 9. At the joints nearest the switch point the guard-rail 12 preferably comes into direct contact with the rail 8, as shown in Fig. 2, but at the joint farthest

removed from the switch point the guard-rail and the rail upon which the wheels of the cars run are spaced apart by blocks 16 in order that room may be left for the flanges of the wheels. The guard-rails are bent so as to extend from the joints at the ends of the frog to the rails 2 and 3, and are bolted or otherwise secured to rail 2 at 17 and to rail 3 at 18. In this manner the guard-rail is not only spiked to the ties and bolted to the frog, as in former construction, but is directly connected both to that main-track rail and to that side-track rail which do not intersect at the frog. The members 11 may be made of old rails which, together with the appliances for bending the rails, are always to be found around a railway yard.

It will be noted that in this construction the guard-rail holds the frog in permanent position and prevents a relative sliding movement of the frog and of the main-track rails, because the frog cannot slip endwise along the track without pulling the rails 2 and 3. The frog being held in fixed relation to the rails 2 and 3, it is obvious that the frog cannot move in either direction and tighten the gage. The expansion and contraction of the metal, due to change in temperature, will neither tighten nor loosen the gage because no movement of the frog, either sidewise or endwise, is possible, and the guard-rail at all times holds the frog, the switch points, and the main rails in permanent position and true gage. The guard-rail 11 is secured to the main-track rail 2 directly opposite the heart of the frog so that the flanges of the wheels upon track 2 strike the inner surface of the web of the guard-rail at the same time that the other wheels of the same pairs are riding upon the frog; and, similarly, the guard-rail which is secured to the side-track rail 3 is fastened at a point directly opposite the heart of the frog. The two guard-rails tend to brace together the ends of the frog nearest the frog point. One of the weakest points about the average frog and the point where it tends most frequently to break from use, is at the crotch, but the guard-rails brace the frog so as to prevent spreading or splitting of the frog at or adjacent the crotch 19. The arm 12 of the guard-rail is practically parallel to the rail 9, and the arms 20 and 21 are practically parallel to the rails

2 and 14. The arm 12 serves as a fish-plate to bind the frog and rail 9 together.

It is obvious that many changes in the details of construction may be made without departing from the scope of the invention or of the various claims.

I claim as my invention:

1. In a device of the character described, the combination of track-rails, a frog, and a guard-rail, said guard-rail being secured to said frog at the joint between the frog and the switch-track rail and at the joint between the frog and the main-track rail, said guard-rail extending outwardly from said frog and being secured to the main-track rail at a point opposite said frog.

2. In a device of the character described, the combination of track-rails, a frog, and a guard-rail secured thereto and directly engaging the frog at the joint between the frog and the switch-track rail and secured to the frog but spaced apart therefrom at the joint between the frog and one main-track rail, said guard-rail being also secured to the other main-track rail at a point opposite said frog.

3. In a device of the character described, the combination of track-rails, a frog, a guard-rail secured thereto and having an arm extending parallel to one of the switch-track rails, an arm parallel to one of the main-track rails, said arms being secured, respectively, to the frog at the joints between said frog and the rails to which said arms are parallel, an arm parallel to the other main-track rail, and arms extending obliquely to the main-track rails and connecting said first-mentioned and said second-mentioned arms to said third-mentioned arm.

4. In a device of the character described, the combination of track-rails, a frog, a pair of guard-rails secured thereto, each being secured to said frog at the joint between the frog and one of the switch-track rails and at the joint between the frog and one of the main-track rails, both of said guard-

rails extending from said frog and being secured to the track rail at a point opposite said frog.

5. In a device of the character described, the combination of track-rails, a frog, and a guard-rail, said guard-rail being secured to said frog at the joint between the frog and one of the rails connected to the switch point and extending from said point to one of the rails.

6. In a device of the character described, the combination of track-rails, a frog, and a guard-rail, said guard-rail being connected at each of its ends to the ends of the frog, and being connected at a point adjacent the middle to a track rail.

7. In a device of the character described, the combination of track-rails, a frog, and a guard-member, said guard-member being formed of a rail and being secured to said frog at the joint between said frog and the switch-track rail, and extending therefrom to one of the main-track rails.

8. In a device of the character described, the combination of a frog, a switch-track rail and a main-track rail, and a member which is secured as a fish-plate at the joint between the frog and one of the switch-track rails and which is secured also to one of the main-track rails.

9. In a device of the character described, the combination of a frog, a pair of main-track rails, a pair of switch-track rails, and a pair of guard-rails, each of said guard-rails being secured to said frog at the joint between the frog and one of the rails connected thereto, and being secured also to the track rail opposite said frog.

In testimony whereof I have hereunto affixed my name in the presence of two witnesses.

JOHN W. KELLEY.

Witnesses:

WILLIAM PANSCHER,
RALPH L. ASHCROFT.