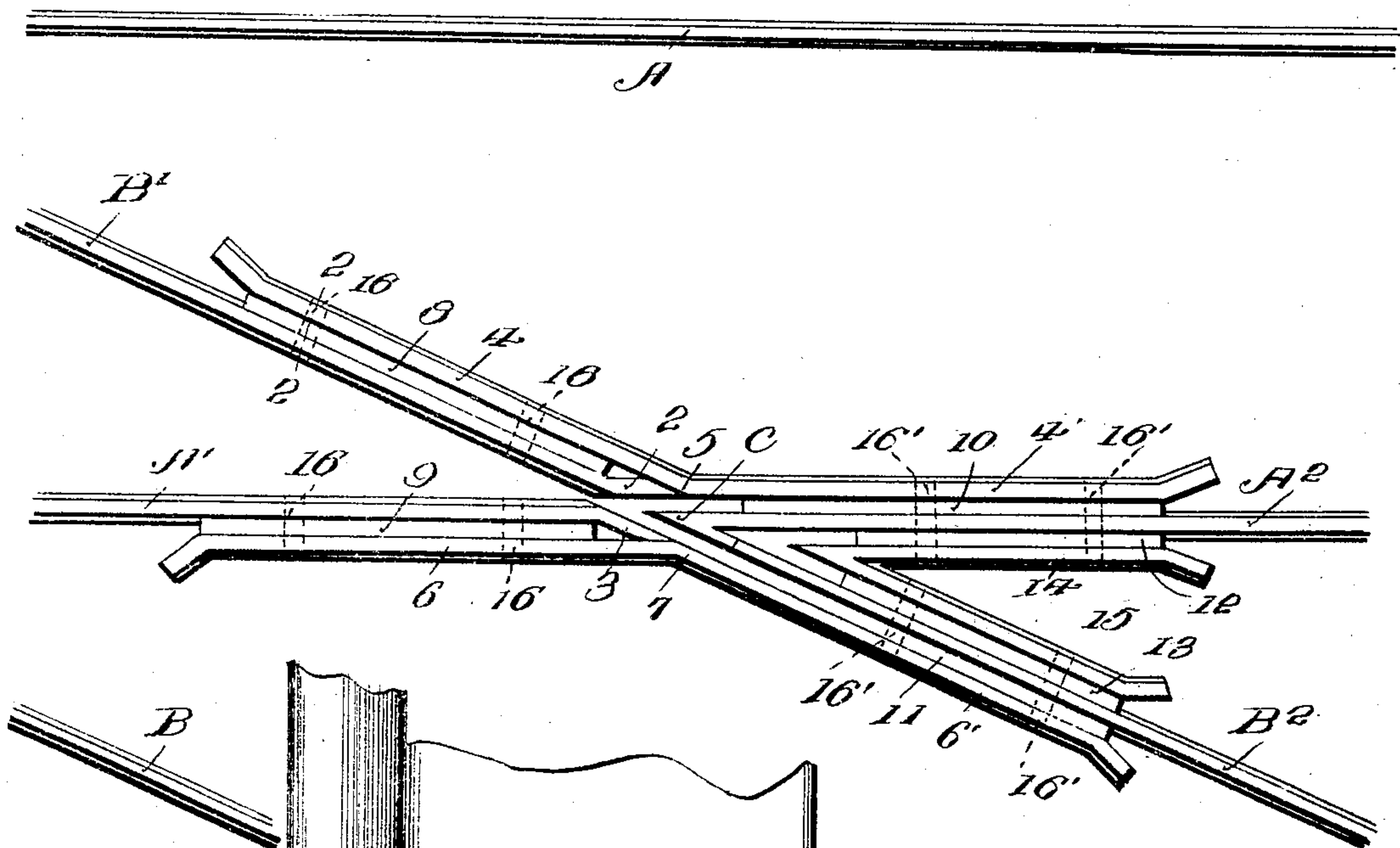


R. P. DELANEY.  
GUARDED FROG.  
APPLICATION FILED APR. 19, 1910.

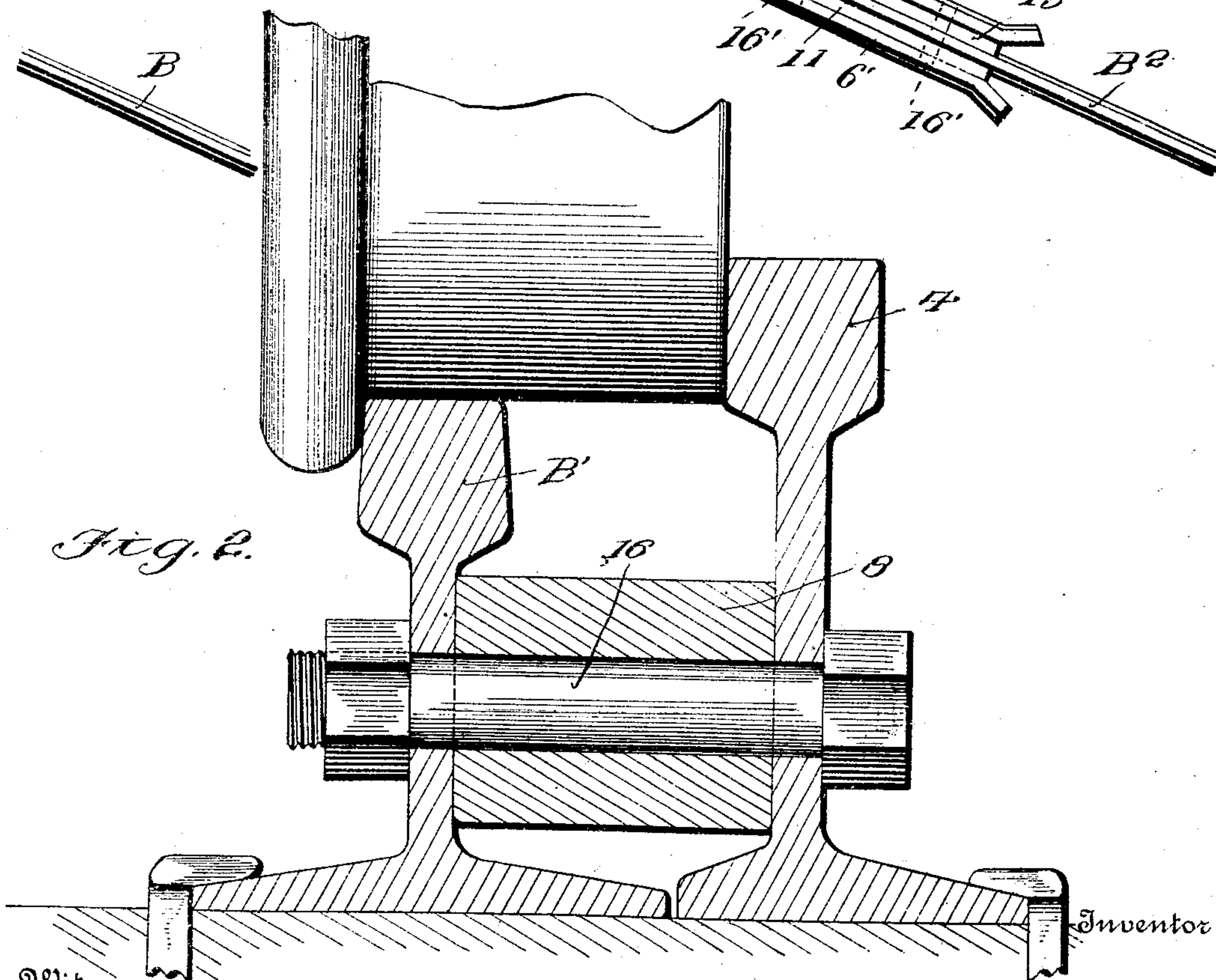
968,837.

Patented Aug. 30, 1910.

*Fig. 1.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

RICHARD P. DELANEY, OF FAIRCHANCE, PENNSYLVANIA.

## GUARDED FROG.

968,837.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed April 19, 1910. Serial No. 556,417.

*To all whom it may concern:*

Be it known that I, RICHARD P. DELANEY, citizen of the United States, residing at Fairchance, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Guarded Frogs, of which the following is a specification.

My invention relates to crossing frogs as used for railways and the object of the invention is to provide a very simple and effective form of frog which will positively act to prevent the wheel from jumping the track when approaching the point and will positively guide the wheels so that the flanges of the rails will not engage over the point and throw the car off of the track.

The invention consists in the provision of guard rails which are located on each side of the crossing and main rail and extend parallel thereto opposite to the switch point and also in the provision of an interior guard rail mounted between the converging crossing rail and main track rail.

My invention is shown in the accompanying drawings, wherein:

Figure 1 is a plan view of my improved guarded frog; and Fig. 2 is a section on the line 2—2 of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to these figures, A—A'—A<sup>2</sup> designate the main rails of a line of track and B—B'—B<sup>2</sup> a line of rails extending across the main rails. These rails A—A'—A<sup>2</sup> and B—B'—B<sup>2</sup> are of any ordinary construction and are of the usual or standard form in cross section, as shown in Fig. 2. The rail B' is bent at its extremity, as at 2, while the rail A' is likewise bent at its extremity, as at 3. The rail A<sup>2</sup> extends, of course, in alinement with the rail A' and converges toward and meets the rail B<sup>2</sup> of the cross track, the two rails being cut away at their meeting points, as at C to form the point of the frog. The main guard rails are designated 4, 6, 14 and 15 and may be made either of T-rails of the ordinary or standard form, such as shown in Fig. 2, or of a solid casting. The guard rail 4 extends parallel to the rail B' and is angularly bent at its middle, as at 5, the portion 4' of the guard rail extending parallel to the rail A<sup>2</sup>. The

guard rail 6 is also bent at its middle, as at 7, one portion of the guard rail extending parallel to the rail A' while the other portion 6' extends parallel to the rail B<sup>2</sup>. The guard rails 4 and 6 are separated or spaced from the rails A' and B' and rails A<sup>2</sup> and B<sup>2</sup> by means of separating blocks 8, 9, 10 and 11.

The separating blocks 8 and 9 are of less length than the distance between the ends of the rails 4 and 6 and the point at which these rails are bent, and are held to the guard rails and to the cross and main rails of the track by means of bolts 16 which pass through the separating blocks and are provided with nuts on the opposite ends thereof. The portions 4' and 6' of the guard rails are also separated from the rails B<sup>2</sup> and A<sup>2</sup> by means of the separating blocks previously referred to, of like character to the separating blocks 8 and 9 and through these blocks and rails pass the bolts 16'.

Mounted between the rails A<sup>2</sup> and B<sup>2</sup> at the junction thereof are the guard rails 14 and 15, these rails converging and being cut away at their meeting points so that both rails 14 and 15 are parallel to the rails A<sup>2</sup> and B<sup>2</sup>. The guard rails 14 and 15 are likewise separated from the track rails A<sup>2</sup> and B<sup>2</sup> by means of separating blocks 12 and 13. The bolts 16' used in this portion of the frog pass through the rails 6', the separating blocks, the track rail B<sup>2</sup> and the separating blocks 14, so that the guard rails 14 and 15 and the main and side rails are all held in solid engagement with each other. The bolts also pass through the guard rail 4', separating blocks 10, the main rail A<sup>2</sup>, the separating blocks 12 and the guard rail 14. It will thus be seen that the main track rails and the side track rails are held in rigid relation with each other and that both interior and exterior guard rails are provided, these guard rails being extended higher than the standard rails forming the main track and cross track, as shown in Fig. 2.

My improved guarded frog may be formed of T-rails or of a solid steel casting.

It is to be observed that the points 5 and 7 where the guard rails 6 and 4 are bent, are placed beyond the point C and that the portions 2 and 3 of the rails A' and B' are in alinement with the portions 4' and 6' of the guard rails 4 and 6. Thus the car wheel is guided by the guard rail until its flange



has passed over the point C no matter in which direction the car is moved, and that it is impossible for the wheel by any means to move from the main rail to the cross rail 5 or from the cross rail to the main rail.

It is particularly to be noted that the wheel is guided in the proper position to pass the point C by reason of its rim engaging with the guard rail and that the 10 flange of the wheel is not guided. Thus there is no danger of breaking the flange, and, furthermore, there is no danger of the wheel being misguided by reason of a broken flange. As soon as the wheel passes the be- 15 ginning of one of the guard rails, it is held in such position that the flange will not ride up or the wheel be directed upon the wrong track.

One of the advantages of my guarding 20 frog is that the space between the main rail and the guard rail can be filled so that the foot of a walker need not be caught between the guard rail and the main rail, as very often happens with the ordinary frog. 25 Furthermore my improved frog does away with the second guard rail on the opposite side of the track from the frog, and inasmuch as it is impossible for the wheel to get off the track at the point of the frog it is 30 particularly good for mine use, as the mine-car wheel is loose on the axle and the guarded frog is protected at this point.

Having thus described the invention, what is claimed as new is:

35 1. A railway frog comprising spaced main rails, spaced crossing rails extending at an angle to the main rails, an angular guard rail extending parallel to one of the main rails and then extending parallel to one of the 40 cross rails in spaced relation thereto, an oppositely disposed guard rail extending parallel to the other crossing rail and then parallel to the other main rail, converging guard rails disposed between one of the main 45 rails and the adjacent crossing rail, and means for rigidly holding said guard rails

and track rails in spaced relation to each other.

2. A railway frog comprising spaced main track rails, spaced crossing track rails 50 at an angle to the main rails, an angular guard rail extending parallel to one of the main rails and then extending parallel to one of the crossing rails, an oppositely disposed guard rail extending parallel to the 55 other crossing rail and then parallel to the other main rail, converging guard rails disposed between one of the main track rails and the adjacent crossing rail, and separating blocks disposed between the track rails 60 and the guard rails, and bolts passing through the track rails, guard rails and said spacing blocks.

3. A railway frog, comprising a main rail in two sections spaced from each other, the 65 end of one of said sections being flared, a crossing rail also in two sections, and the end of one of said sections being outwardly bent to correspond to the outwardly bent end of the section of the main rail, angular 70 guard rails extending along parallel to corresponding sections of the main and crossing rails and engaging with the outwardly turned ends of the sections of the main and crossing rails and then extending parallel 75 to the opposite sections of the main and crossing rails, spacing blocks located between the said guard rails and the said track rails, converging guard rails disposed between one of the sections of the main rail 80 and the adjacent section of the crossing rail, spaced blocks located between said converging guard rails and the track rails, and means for holding said track rails, guard rails and spacing blocks in rigid relation to 85 each other.

In testimony whereof, I affix my signature in presence of two witnesses.

RICHARD P. DELANEY. [L. s.]

Witnesses:

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