

A. FROHNE.
 CROSSOVER FOR TOY RAILWAYS.
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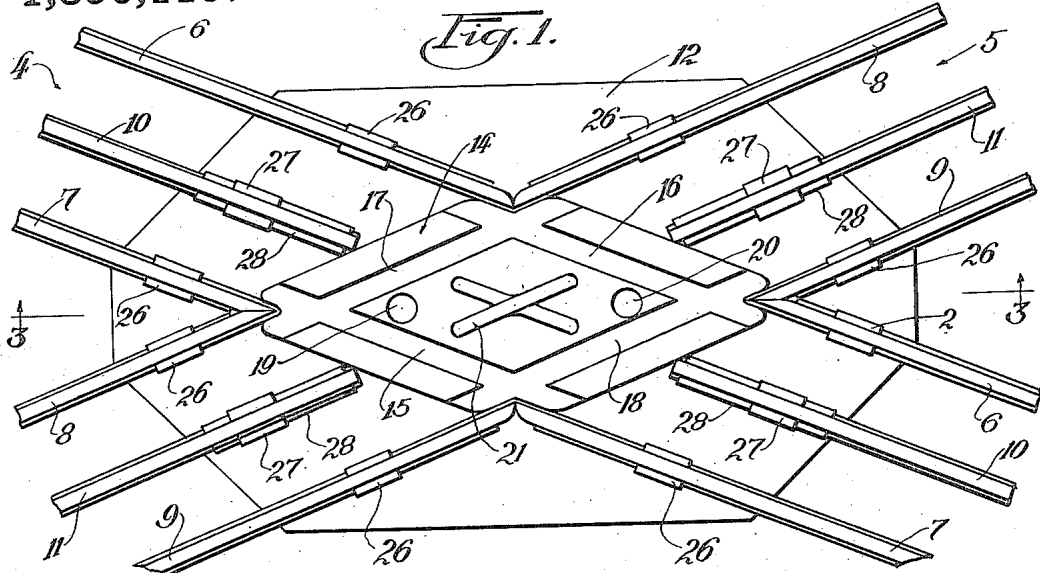


Fig. 1.

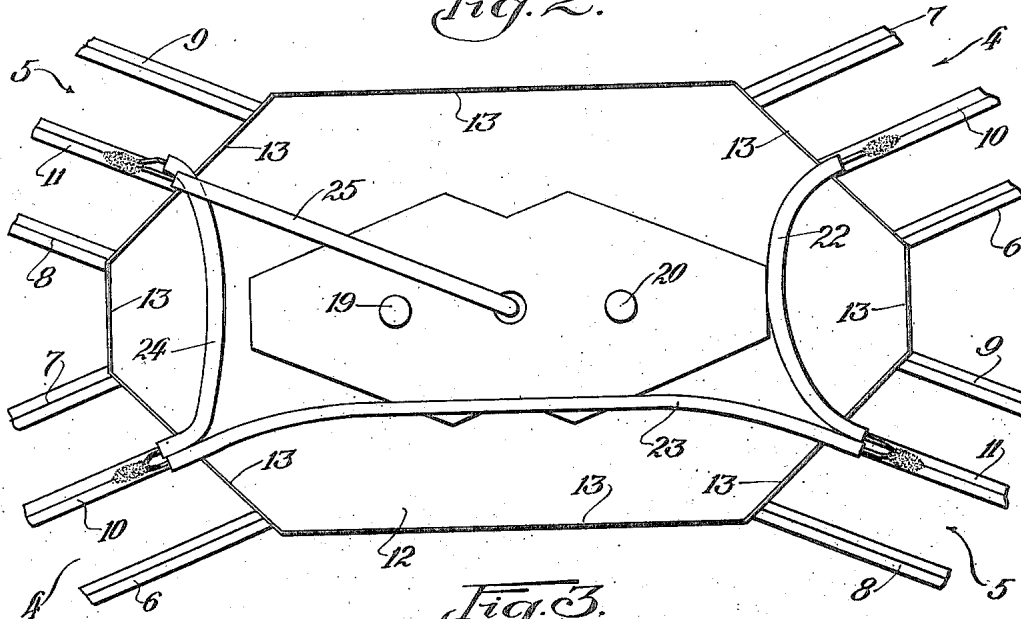


Fig. 2.

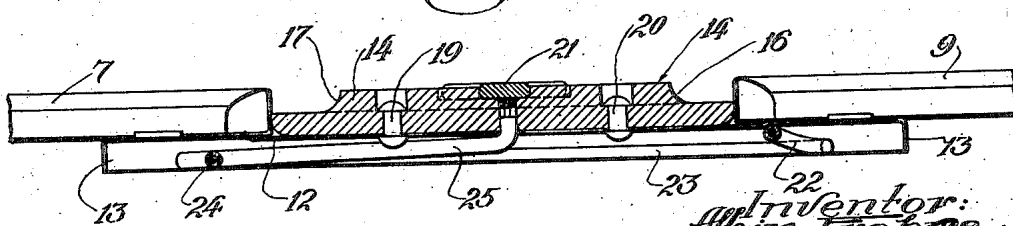


Fig. 3.

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 [Signature]

UNITED STATES PATENT OFFICE.

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CROSSOVER FOR TOY RAILWAYS.

1,390,119.

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To all whom it may concern:

Be it known that I, ALBIN FROHNE, a citizen of Germany, having declared my intention of becoming a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Crossovers for Toy Railways, of which the following is a specification.

The present invention has to do with certain improvements in cross-overs for toy railways and the like. It has particular reference to cross-overs intended for use in toy third rail railroads.

One of the objects of the invention is to provide a cross-over of such construction that the trolley contactors on the electric cars will not become grounded as they pass over the cross-over, thus preventing the establishments of short circuits.

Another object of the invention is to provide a very simple construction of cross-over and one which can be very cheaply manufactured and which will be very durable.

Another object of the invention is to so construct the cross-over that current will be delivered to the trolley contactor in a practically continuous manner as the cars travel over the cross-over.

Still another object is to provide a cross-over of such construction that the cars will run over it in a relatively smooth and easy manner, thus largely eliminating the jarring ordinarily attendant upon the passage over the cross-over.

Other objects and uses of the invention will appear from a detailed description of the same, which consists in the features of construction and combinations of parts hereinafter described and claimed.

Referring to the drawing:

Figure 1 shows a plan view of a 60° cross-over embodying the features of the present invention;

Fig. 2 shows a bottom view corresponding to Fig. 1; and

Fig. 3 shows a vertical cross section taken on the line 3—3 of Fig. 1, looking in the direction of the arrows.

The cross-over herein illustrated is designed to cross the tracks 4 and 5 which lie at an angle of substantially 60° to each other; but it will be understood that the features of the invention are not limited to a 60° cross-over or a cross-over of any other

particular angle. The track 4 includes the rails 6 and 7, and the track 5 includes the rails 8 and 9. The track 4 also includes the intermediate third rail 10, and the track 5 also includes the intermediate third rail 11.

The end portions of the rails 6, 7, 8, and 9 rest upon and are supported by a base plate 12 comprising a sheet of metal having its edge portion turned down to provide the flanges 13 which also constitute a foundation.

On the central portion of the base plate 12 is located a block 14 of insulating material, such as fiber. This block preferably has its edge portions formed to lie in the same directions as the directions of the tracks; and in the construction illustrated, the block 14 is of diamond shape. Its top surface lies substantially at the same elevation as the tops of the rails, and it is provided with the grooves 15 and 16 in alignment with the inside faces of the rails 6 and 7, and with the grooves 17 and 18 in alignment with the inside faces of the rails 8 and 9. These grooves accommodate the flanges of the cars traveling over the cross-over. The grooves are cut to the proper depth to bring their bottoms substantially at the correct elevation to support the flanges of the wheels traveling through, so that the cars will pass over the cross-over without any jarring. It will be observed that the corners of the block 14 are recessed to accommodate the end portions of the rails, so that the grooves 15, 16, 17 and 18 extend back of the ends of the rails a sufficient distance to take the load of the flanges of the wheels before the wheels leave the rails proper.

As stated above, the top surface of the insulating block lies substantially at the same elevation as the top surfaces of the rails, so that the wheels will be either supported by said top surface or by having their flanges ride on the bottoms of the grooves.

The insulating block 14 may be held in place in any suitable manner, as by rivets 19 and 20 which extend through the base plate 12. These rivets when used should be countersunk so as to carry their heads substantially below the top surface of the insulating block, so that the contactors riding over the surface of the block will not be grounded.

In order to maintain a more perfect conti-

2

nunity of the current supply to the third rail contactors as the car travels over the intersection, I have provided a cross shaped conducting section 21 in the central portion 5 of the block 14, the same being countersunk in the block 14 as clearly shown in Fig. 3, so that its top surface lies substantially at the same elevation as the third rails 10 and 11. Insulated wires 22, 23 and 24 may be 10 provided on the bottom of the intersection to join together the sections of third rail; and another wire 25 may be connected to one of the third rails or to one of said wires and to the conducting section 21 so as to 15 supply current to the same.

The running rails 6, 7, 8 and 9 may be fastened to the base plate 12 in any convenient manner as by means of the clips 26; and the third rails 10 and 11 may be 20 secured to the base plate in any convenient manner as by the clips 27 with the interposed sections of insulating material 28.

While I have herein shown and described only a single embodiment of the features 25 of my present invention, still I do not limit myself to the same except as I may do in the claims.

I claim:

1. A cross-over for a toy electric railway 30 including in combination a base plate having a downwardly depending peripheral flange, a pair of intersecting tracks having their end portions secured to said base plate, a block of insulating material mounted 35 upon the base plate at the point of intersection of the tracks and having its side portions in substantial alinement with the outside edges of the respective track rails, the top surfaces of the edge portions of said 40 block lying substantially at the same elevation as the tops of the respective track rails, there being grooves in the top surface of said block lying in substantial alinement with the inside edges of the respective track 45 rails and for the accommodation of the wheel flanges of the car, said grooves being of substantially the same depth as the depth of said wheel flanges, a pair of securing devices extending between said block and the 50 base plate and having their upper ends countersunk substantially above the top surface of the block, third rail sections extending longitudinally of the respective track 55 sections and having their inner ends lying adjacent to the block of insulating material and supported by and insulated from the base plate, a conducting section embedded in the central portion of the block and having its top surface exposed for contact 60 by a third rail contactor, and suitable wires joining together the end portions of all of the third rail sections and said conducting section, substantially as described.

2. A cross-over for a toy electric railway 65 including in combination a base plate, a

pair of intersecting tracks having their end portions secured to said base plate, a block of insulating material mounted upon the base plate at the point of intersection of the tracks and having its side portions in sub- 70 stantial alinement with the outside edges of the respective track rails, and top surfaces of the edge portions of said block lying substantially at the same elevation as the tops of the respective track rails, there being 75 grooves in the top surface of said block lying in substantial alinement with the inside edges of the respective track rails and for the accommodation of the wheel flanges of the car, means for securing said block to the 80 base plate, third rail sections extending longitudinally of the respective track sections and having their inner ends lying adjacent to the block of insulating material and supported by and insulated from the base plate, 85 a conducting section embedded in the central portion of the block and having its top surface exposed for contact by a third rail contactor, and suitable wires joining together the end portions of all of the third 90 rail sections and said conducting section, substantially as described.

3. A cross-over for a toy electric railway including in combination a base plate, a pair of intersecting tracks having their 95 end portions secured to said base plate, a block of insulating material mounted upon the base plate at the point of intersection of the tracks and having its side portions in substantial alinement with the respective 100 track rails, there being grooves in the top surface of the block lying in substantial alinement with the inside edges of the respective track rails and for the accommodation of the wheel flanges of the car, means 105 for securing said block to the base plate, third rail sections extending longitudinally of the respective track sections and having their inner ends lying adjacent to the block of insulating material and supported by and 110 insulated from the base plate, a conducting section located centrally in the block and having its top surface exposed for contact by a third rail contactor, and suitable wires joining together the end portions of all of 115 the third rail sections and said conducting section, substantially as described.

4. A cross-over for a toy electric railway including in combination a base plate, a pair of intersecting tracks having their end 12 portions secured to said base plate, a block of insulating material in the shape of a parallelogram, recesses in the corners of said block and for the accommodation of the end portions of the respective track rails, 12 means for securing said block to the base plate, there being grooves in the top surface of said block lying in substantial alinement with the inside edges of the respective track rails and for the accommodation of the 13

wheel flanges of the car, third rail sections extending longitudinally of the respective track sections and having their inner ends lying adjacent to the block of insulating material and supported by and insulated from the base plate, a conducting section located in the central portion of the block and having its top surface exposed for contact by a third rail contactor, and suitable wires joining together the end portions of all of the third rail sections and said conducting section, substantially as described.

5. A cross-over for a toy electric railway including in combination a base plate, a pair of intersecting tracks having their end portions secured to said base plate, a block of insulating material in the shape of a parallelogram, recesses in the corners of said block and for the accommodation of the end portions of the respective track rails, means for securing said block to the base plate, there being grooves in the top surface of said block lying in substantial alinement with the inside edges of the respective track rails and for the accommodation of the wheel flanges of the car, third rail sections extending longitudinally of the respective track sections and having their inner ends lying adjacent to the block of insulating material and supported by and insulated from the base plate, and suitable wires joining together the end portions of all of the third rail sections, substantially as described.

ALBIN FROHNE.