Sept. 10, 1940. R. Z. SCHREFFLER 2,214,310

TOY RAILWAY SWITCH

Filed March 15, 1940 2 Sheets-Sheet 1

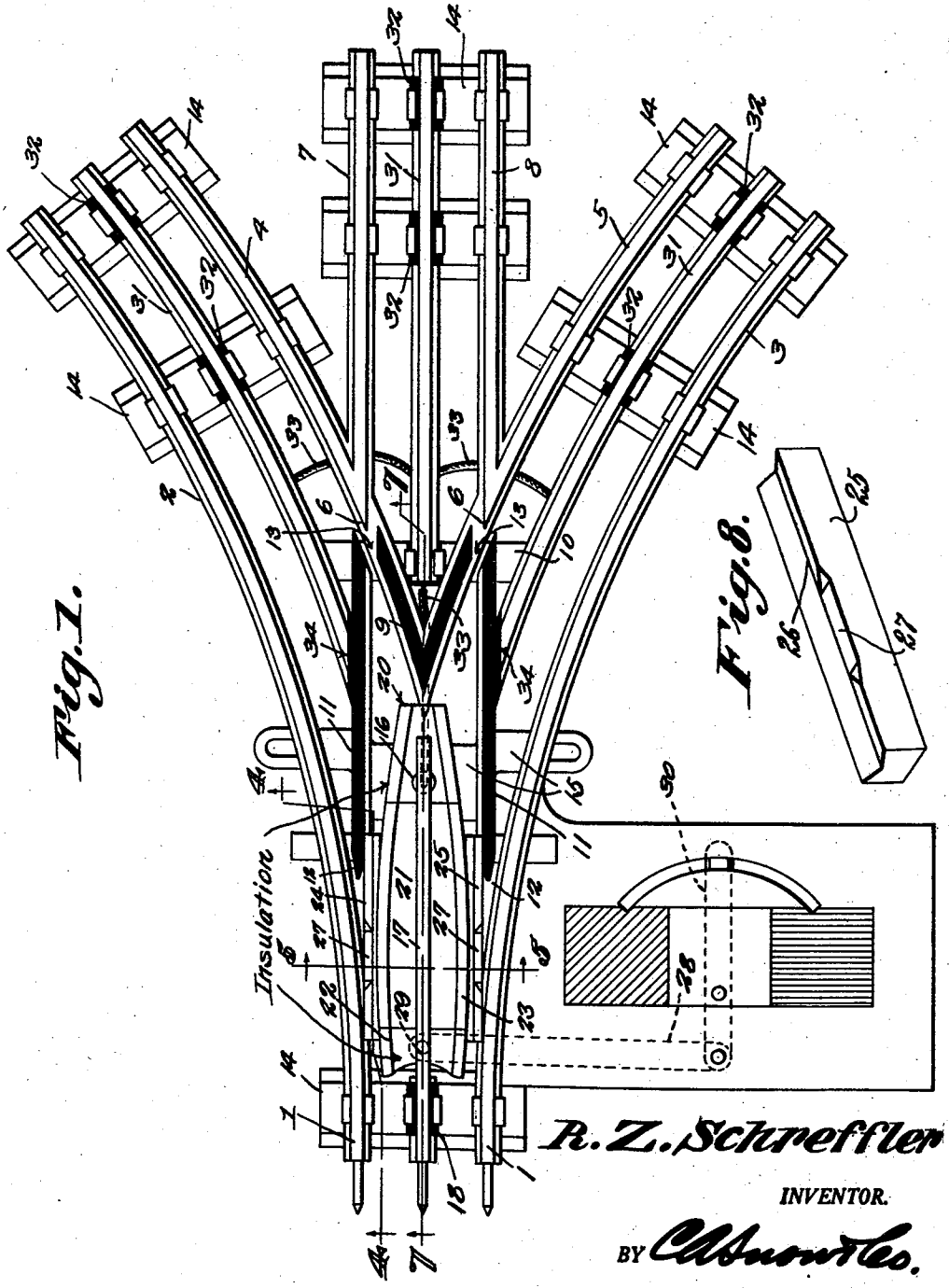


Fig. 1.

Fig. 8.

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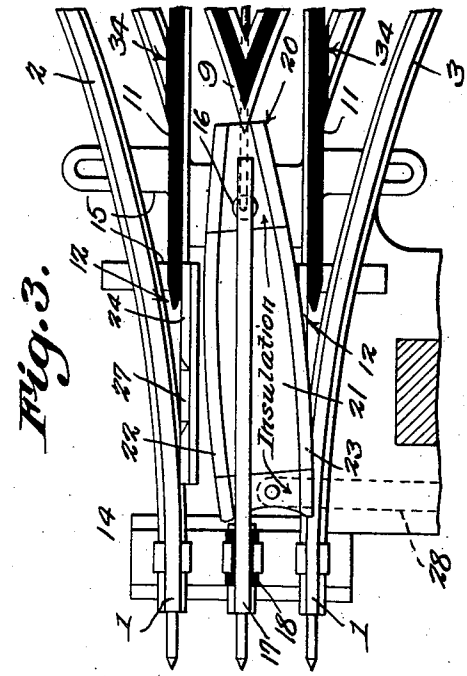


Fig. 3.

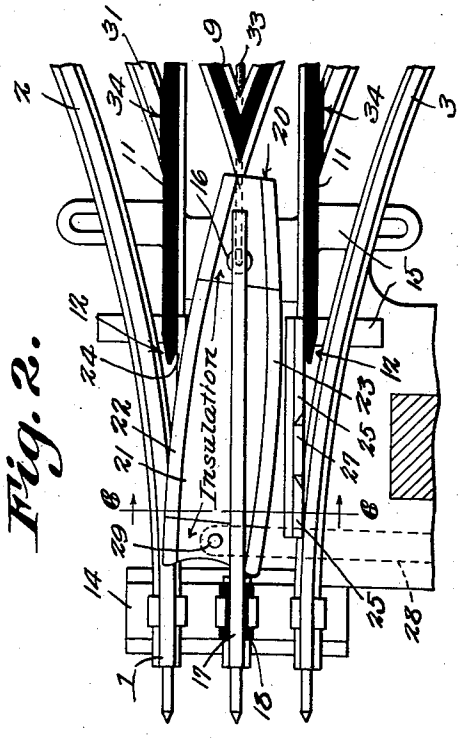


Fig. 2.

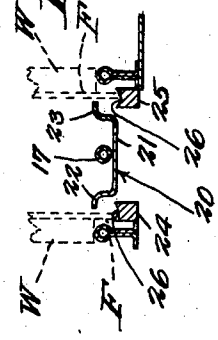


Fig. 5.

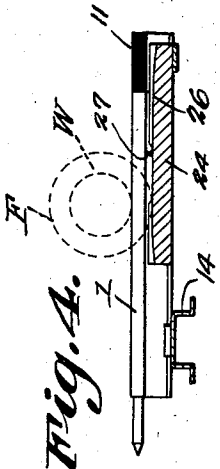


Fig. 4.

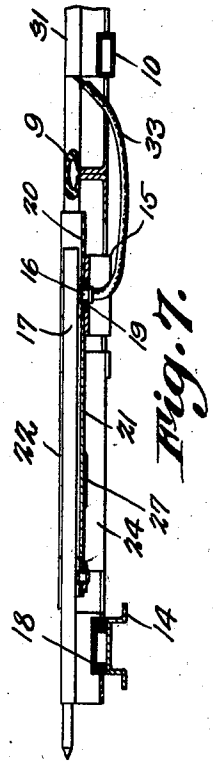


Fig. 7.

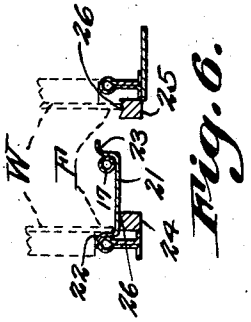


Fig. 6.

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2,214,310

TOY RAILWAY SWITCH

Robert Z. Schreffler, Philipsburg, Pa.

Application March 15, 1940, Serial No. 324,200

5 Claims. (Cl. 246—403)

This invention relates to a switch for use as a unit of the track of a toy railway, one of the objects being to provide a three-way switch utilizing a single shiftable tongue whereby a train approaching the switch can be directed onto any one of three tracks.

Another object is to provide a track section including a Y and an intermediate straight-away portion, said section including a tongue which can be brought into position to direct a train onto either portion of the Y or onto the straight-away portion.

A still further object is to provide a three-way switch the shiftable tongue of which has means for operating the same whereby, when the tongue is placed in an intermediate position, the wheels of the train will move past the Y portion and onto the straight-away portion without danger of derailment.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings

Figure 1 is a plan view of a track section having the present improvements combined therewith.

Figure 2 is a plan view, on a reduced scale, showing the tongue positioned to guide a train onto the right-hand branch of the Y.

Figure 3 is a similar view showing the tongue shifted into position to guide a train onto the left-hand branch of the Y.

Figure 4 is a section on line 4—4, Figure 1.

Figure 5 is a section on line 5—5, Figure 1.

Figure 6 is a section on line 6—6, Figure 2.

Figure 7 is a section on line 7—7, Figure 1.

Figure 8 is a perspective view of one of the bridging bars.

Referring to the figures by characters of reference 1 designates the rails of the main branch of the track section, each of these rails merging into the outer curved rails 2 and 3 of the side branches of the section. The inner rails 4 and 5 of these side branches converge to points 6 located at the terminals of the side rails 7 and 8 of the central or straight-away branch of the section, these rails 7 and 8 being in line with the straight end portions of the rails 1.

Interposed between the points 6 are the spaced terminals of a frog 9 the diverging sides of which are spaced from the points 6 but substantially in line with the rails 4 and 5 respectively. This frog is carried by a bed plate 10.

The frog 9 projects between parallel rail sections 11 alined with the rails 7 and 8 but spaced from the points 6 as shown and also spaced from the rails 2 and 3 respectively at those ends thereof where they merge, along curved lines, into the rails 1. Thus clearances 12 are provided between rail sections 11 and rails 2 and 3 respectively and additional clearances 13 are provided between these rail sections 11 and the points 6. Thus it is possible for the wheels of a railway train to travel straight ahead from rails 1 onto the rail sections 11 after bridging the gaps 12 and from these rail sections 11, it is possible for the wheels of the train to pass over the gaps 13 and onto the points 6 and the rails 7 and 8.

Additional bed plates 14 are used for connecting the rails 1 adjacent to their free ends and also for connecting the rails 2 and 4 and the rails 3 and 5 at any points needed so as to insure maintenance of the proper railway gauge at all points along the track sections. Another bed plate 15 connects the rails 2 and 3 to the rail sections 11 and also carries a stud 16 which is insulated therefrom. This stud is anchored at its upper end to a third rail section 17 one end of which is midway between the free ends of the rails 1 while the other end is spaced from but located adjacent to the point of the frog 9. This third rail is held against movement and, in an electrical equipment, is insulated from the bed plates 14 and 15 above which it is located. Insulations used for this purpose has been indicated at 18 and 19.

Mounted on the stud 16 so as to swing laterally relative thereto is a tongue 20. This tongue is in the form of a plate having a substantially flat intermediate portion 21 while the side edges of the plate, which are slightly curved from end to end are formed with upwardly and outwardly turned flanges 22 and 23. The tongue is so proportioned that when it is in its normal position, as shown in Figure 1, clearances are provided between the flanges 22 and 23 and the rails 1 and the rail sections 11. When the tougue is swung laterally in one direction, however, flange 22 will ride onto one of the rails 1, thereby closing the adjacent gaps 12, as shown in Figure 2, while

the other end of said flange will be extended toward and close to the point of the frog 9 so as to form substantially a continuation of the rail 5. When the tongue is swung laterally to its other extreme position, the parts will be located as in Figure 3 at which time the flange 23 will overlie and rest on the other rail 1, bridging the adjacent gaps 12 and also extending toward the point of the frog 9 so as to form substantially a continuation of the rail 4.

Located at the inner sides of the rails 1 and at the inner sides of the rail section 11, are bridging bars 24 and 25 located below the level of the top faces of the rails and having longitudinal grooves 26 of such depth as to accommodate and be engaged by the peripheries of the flanges F of the car wheels W. At each of the gaps 12 the outer side walls of the grooves 26 are cut away as shown at 27 so that the flanges of the car wheels in said grooves are thus free to move laterally out of the grooves.

The switch tongue is adapted to be moved into any one of its three positions shown in Figures 1, 2 and 3, by means of a shifting bar 28 extending thereunder and pivotally-connected thereto, as shown at 29, this bar being actuated by a suitable lever 30 which can be moved to any one of three positions.

If the track is a part of an electric railway system, third rails 31 will be located between and parallel with the rails 2 and 4, 7 and 8, and 5 and 3, these all being insulated from the bed plates or ties 14 as shown at 32. The frog 9, under these conditions, can be made of insulating material and the tongue 21 can be made wholly or in part of suitable insulating material having requisite strength. Obviously the third rails can be electrically connected by means of wires indicated generally at 33.

The rails can be of any suitable construction following ordinary standards and the section herein described and illustrated, comprising a single unit, can be assembled readily with corresponding tracks of a toy railway system.

Obviously the various parts can be insulated wherever found necessary in order to insure maintenance of the circuits while the track section is in use and under some conditions it will be found desirable to make each of the rail sections 11 of insulating material, or, if preferred, they can be insulated from the third rails as shown at 34.

When the tongue 21 is in its intermediate position, as shown in Figure 1, a train approaching the same from the left in said figure will move along the rails 1 and when the wheels reach the bridging bars 24 and 25, the flanges F thereof will enter the grooves 26 and be guided thereby so as to carry the wheels across the gaps 12 and onto the rail sections 11 from which they will pass, as ordinarily, to the points 6 and thence to the rails 7 and 8.

If a right turn is desired, the tongue 21 is shifted to the position shown in Figure 2. This will bring one end of flange 22 on the adjacent rail 11 so that the tongue will extend across the adjacent gaps 12. Thus as the train moves onto the rails 1, the left wheels will travel onto flange 22 while the depending flanges of said wheels will overlie the tongue 21 and be deflected toward the right by flange 22. Thus the flanges on the right-hand wheels, which had entered the groove in bridging bar 25, will be forced through the cut-away portion or space 27 on said bar so that the right-hand wheels can travel onto the rail 3 while the left-hand wheels, moving along flange 22, will pass onto the frog 9 and thence to the rail 5. When the tongue is shifted to its other extreme position, the foregoing operation will be reversed, the wheels passing from rails 1 on the rails 2 and 4, the right-hand wheels travelling along the flange 23 and being guided thereby to the frog 9 attached to the rail 4 while the flanges of the left-hand wheels, which are in the groove 27 in bridging bar 24 will move through the clearance 12 onto rail 2. Under all conditions the third rail section 17 will remain stationary and alined with the rail 31 of the intermediate or straight-away section of the section.

While the grooves 26 constitute efficient guides for the wheel flanges, the tongue 21 will also act as a guide to guide the wheels in the proper direction, when it is in its intermediate position. As the sizes of wheel flanges in toy trains are not always uniform, this tongue will cause the wheels to move straight ahead until the flanges come into proper contact with the walls of the grooves 26.

It is to be understood that the improvements herein described are applicable to all types of electrical, mechanical, and hand-operated trains or the like.

What is claimed is:

1. A three way switch for toy railway systems including main rails merging into the outer side rails of side tracks, an intermediate track, inner side rails of the side tracks converging toward the respective rails of the intermediate track to form points, rail sections alined with the rails of the intermediate track and between and spaced from the rails of the side tracks, a frog interposed between and spaced from said points and from the side rails and constituting continuation of the inner side rails of the side tracks, bridging bars connecting the inner sides of the main rails and rail sections and having longitudinal grooves proportioned to receive the flanges of wheels mounted on the rails, there being gaps between the rail sections and the main rails and the outer sides of the bridging bars having the walls of the grooves cut-away adjacent to the gaps, and a tongue mounted for lateral swinging movement between the rail sections and the bridging bars, each tongue having an upwardly and outwardly extended longitudinal flange positioned for movement onto one of the main rails and substantially into line with one of the rails of a side track.

2. A three-way switch section for toy railway systems including a main track having its rails merging into the outer rails of side tracks, an intermediate track between the side tracks and having its rails converging toward the adjacent side rails of the side tracks to provide points, track sections interposed between said points and the rails of the main track and spaced therefrom, there being gaps between said rail sections and the main track rails, bridging bars extending across the gaps below the tops of the rails and each having a longitudinal flange receiving groove, the outer side wall of each groove being cut-away adjacent to the gap between the main rails and the rail sections, a tongue mounted for lateral swinging movement between the rail sections, said tongue having upwardly and outwardly extended side flanges extending longitudinally thereof and proportioned to move onto the respective main rails to bridge the gap adjace[illegible]

to said rail and to align with one of the rails of a side track.

3. A three way switch section for toy railway systems including main rails merging into the outer side rails of side tracks, intermediate track rails converging toward the inner side rails of the side tracks to form points, track sections interposed between and spaced from said points and the main rails to provide gaps between said rail sections and the main rails, bridging bars secured along the inner sides of the main rails and the rail sections and extending across said gaps, each of said bridging bars having a longitudinal flange in the top thereof for the reception of the flange of a wheel travelling along the rail and rail section, one wall of the groove being cut-away at the gap, a tongue mounted for lateral swinging movement between the main rails and the rail sections, said tongue having upwardly and laterally extending flanges at the sides thereof, and means for shifting the tongue relative to the rails to position one of said flanges on one of the main rails and across the gap adjacent thereto and also to position said flange substantially in line with the inner side rail of one of the side tracks.

4. In a three way switch section for toy railway systems, connected rails and rail sections providing a main track, side tracks extending therefrom, and an intermediate track alined with the main track, there being gaps between the side tracks and the main track, rigid connections between the rails and rail sections, bridging bars extending across the gaps at the inner sides of the rails and rail sections, each bar having a longitudinal flange proportioned to receive the flange of a car wheel mounted on the rail, the outer side of each bar having a portion of the groove wall cut-away and opening into the adjacent gap, a tongue mounted for lateral swinging movement between the rails of the main track and between the gaps, said tongue having upwardly and laterally extended longitudinal flanges, each flange being proportioned to move onto one of the rails of the main track and to bridge the gaps and align with one of the rails of a side track, and means for actuating the tongue to position it in engagement with either rail of the main track or in a mid-way position therebetween.

5. In a three way switch section for toy railway systems, connected rails and rail sections providing a main track, side tracks extending therefrom, and an intermediate track alined with the main track, there being gaps between the side tracks and the main track, rigid connections between the rails and rail sections, bridging bars extending across the gaps at the inner sides of the rails and rail sections, each bar having a longitudinal flange proportioned to receive the flange of a car wheel mounted on the rail, the outer side of each bar having a portion of the groove wall cut-away and opening into the adjacent gap, a tongue between the rails of the main track, a third rail overlying and extending longitudinally of the tongue, said third rail being fixedly mounted, a stud integral with the rail and constituting a pivot for the tongue, upwardly and laterally extended flanges positioned longitudinally of the tongue, and means for moving the tongue laterally in either direction to position one of the flanges in engagement with and lapping one of the rails of the main track and substantially in line with one of the rails of a side track.

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