

June 5, 1928.

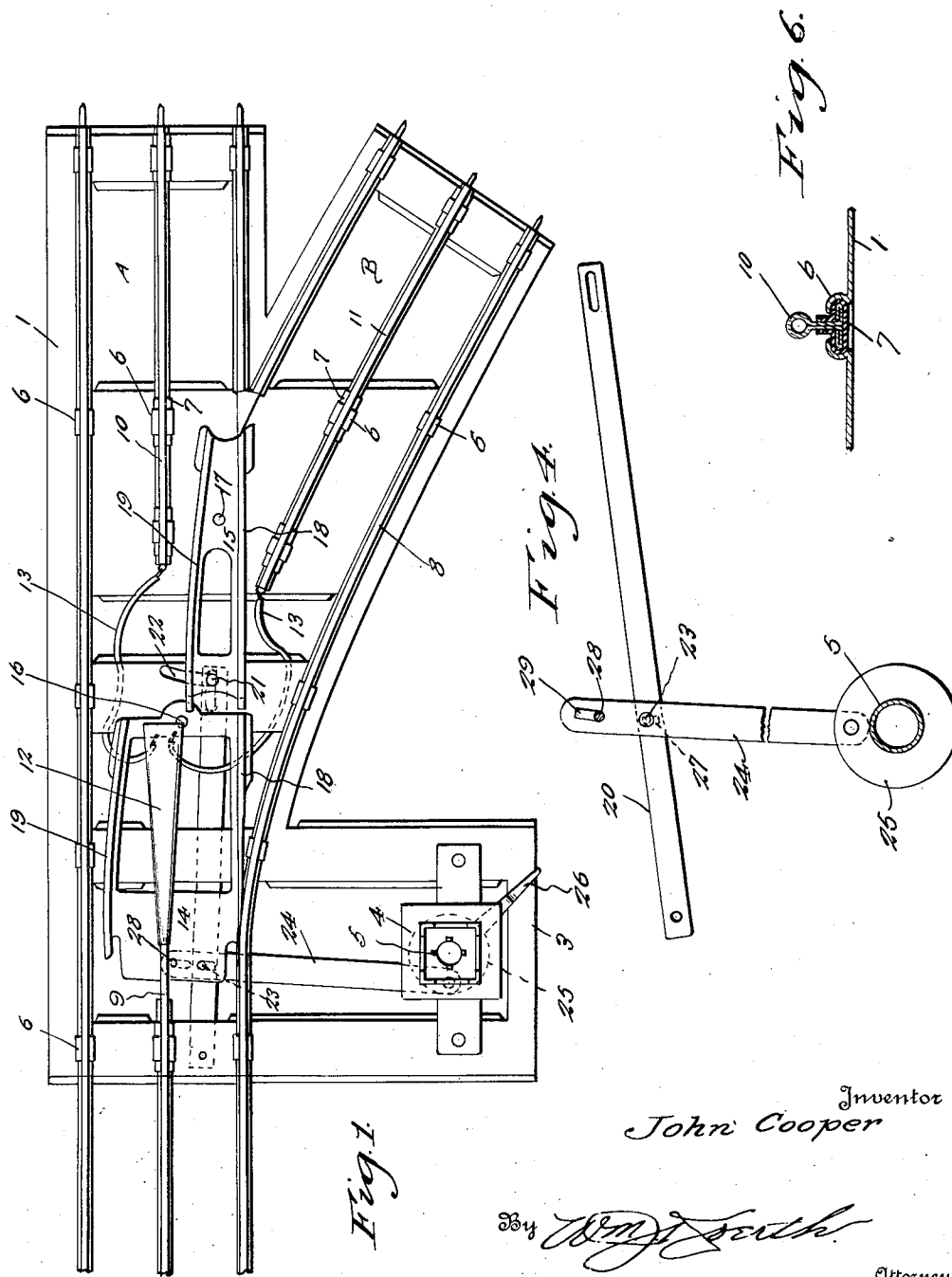
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J. COOPER

TOY ELECTRIC RAILROAD SWITCH

Filed May 6, 1927

3 Sheets-Sheet 1



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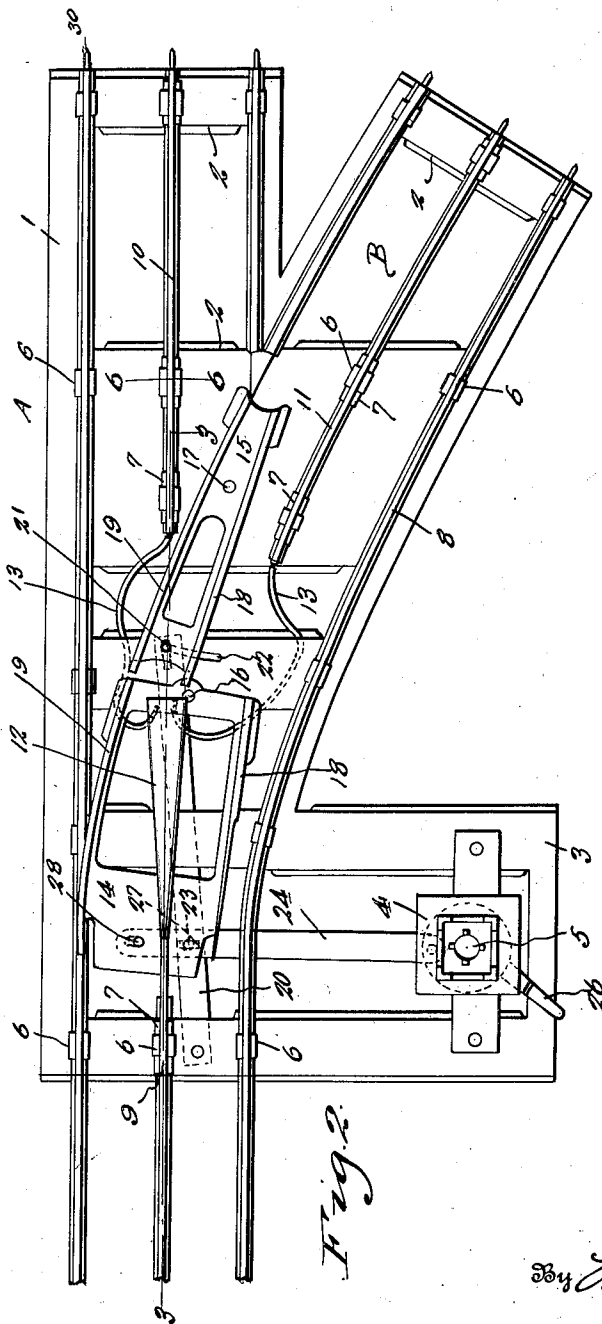


Fig. 2

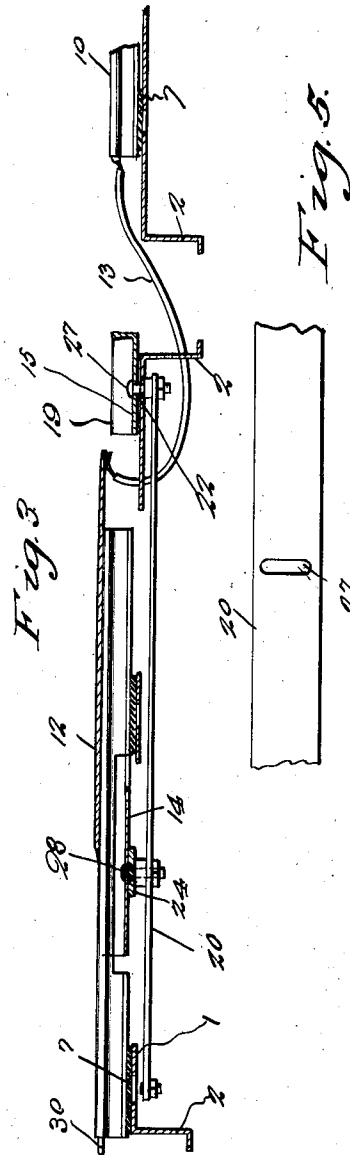


Fig. 3

Fig. 5

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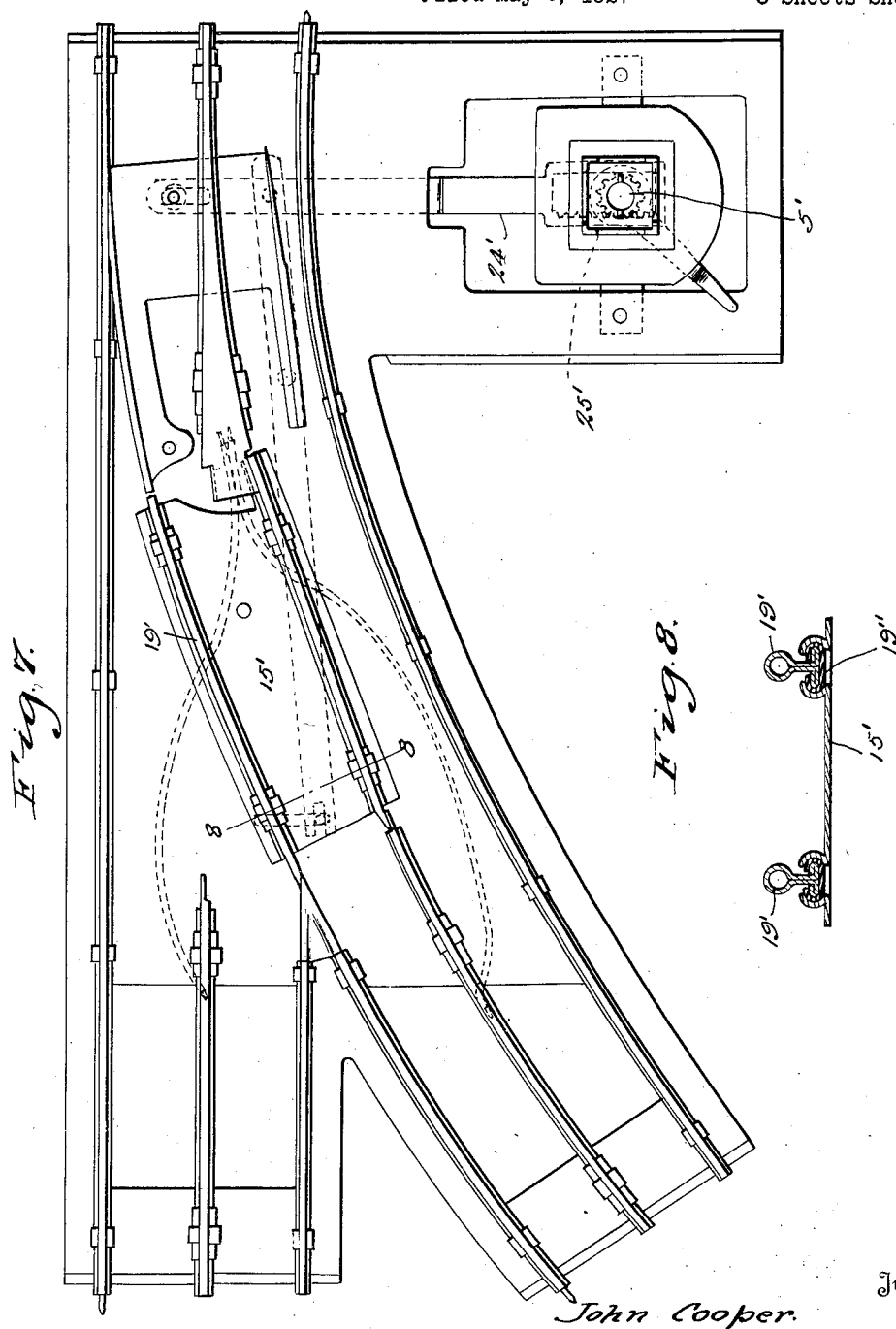
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TOY ELECTRIC RAILROAD SWITCH

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UNITED STATES PATENT OFFICE.

JOHN COOPER, OF EVANSTON, ILLINOIS.

TOY ELECTRIC-RAILROAD SWITCH.

Application filed May 6, 1927. Serial No. 189,348.

This invention relates to a switch for a toy electric railroad, the general object of the invention being to so form the switch members that they will leave a space between the third rail sections so that the shoes on the trains can pass from one third rail section to another without coming in contact with a grounded part of the device.

Another object of the invention is to form the tongue or switch members of two sections, with means for operating both sections from a single actuating means.

The invention also embodies a structure wherein the parts are so arranged that the rails of one section of the tongue will act to bridge the third rail sections and thus form a part of the third rail in order to permit the shoes on the train to pass from one third rail section to the other without jumping the gap between the sections.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a plan view of the invention, showing the switch member set to permit a train to pass along the main track.

Figure 2 is a similar view with the member set to cause a train to pass from the main track upon the branch track.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a view of the switch actuating means.

Figure 5 is a fragmentary view of the actuating lever for the small section of the switch member.

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

Figure 7 is a plan view showing a modification.

Figure 8 is a section on line 8—8 of Figure 7.

In these views, 1 indicates the base which is formed with the depending flanges 2 which act to support the base on a floor or other flat surface and which is provided with a lateral extension 3 at one end thereof for

supporting the tower 4 in which is journaled the shaft 5 of the operating means for the switch member. The rails of the main track A and the rails of the branch track B, as well as the third rails of said track, are fastened to the base by the tongues 6 struck up from the base, the third rails being insulated from the base, as shown at 7. The rail 8 is curved to form a part of the main track A and a part of the branch track B and the inner ends of the sections 9, 10 and 11 of the third rails are spaced quite a distance apart, with the inner end of the section 9 formed with a tapered part 12 which presents a broad flat surface to the shoe of a train, the free end of this part 12 being the wide end. Conductors 13 connect this wide part with the sections 10 and 11.

The tongue or switch member is composed of the two sections 14 and 15, the section 14 being pivoted to the base adjacent its inner end, as shown at 16, and the section 15 being pivoted to the base an appreciable distance from its outer end, as shown at 17. The section 14 is made much wider than the section 15 and each section is formed with a straight rail 18 and a curved rail 19.

A lever 20 is pivoted at its outer end to the under side of the base adjacent one end thereof, and said lever is connected by a pin or rivet 21 with the inner end of the section 19, said pin or rivet passing through a curved slot 22 formed in the base. A pin 23 connects this lever 20, intermediate its ends, with a lever 24, also arranged under the base and which is pivoted to the disk 25 which is connected with the lower end of the shaft 5 of the tower 4 and which is formed with the handle 26. The pin 23 passes through an enlarged opening 27 formed in the lever 20 and a pin 28 passes through a slot 29 formed in the inner end of the lever 24, said pin being connected with the outer end of the section 14.

From the foregoing it will be seen that when the shaft and disk are moved by the handle 26, the lever 24 will move the section 14 on its pivot 16 and at the same time said lever 24 will move the lever 20 to shift the section 15, and due to the slot 25 and opening 27, the section 15 will have greater movement than the section 14. Thus when the switch is to be moved to permit a train to pass over the main track, the handle 26 is moved toward the right, as shown in Figure 1, to place the switch member in a posi-

tion with its two sections having their straight rails 18 in alignment to complete the inner rail of the main track and with their curved rails spaced from the rails of the main track. When a train is to take the branch track, the handle is moved toward the left, as shown in Figure 2, which will place the switch sections in a position where their straight rails will be moved away from the rails of the two tracks and their curved rails in a position so that the wheels of the train will leave the rails of the main track and pass upon the rails of the branch track.

It will also be seen that due to the narrow formation of the section 15 of the switch member, in both positions thereof, a space is left between the flat part 12 of section 9 of the third rail and the sections 10 and 11, so that a shoe of a train can pass from one section to another without coming into engagement with any parts of the switch member so that said shoe will not come in contact with a grounded part as it passes from one third rail section to another.

I prefer to place pointed rods 30 in the outer ends of some of the rails so that these pointed rods can engage sockets in the abutting ends of the rails of the track of which the switch device forms a part.

In the modification shown in Figures 7 and 8, the section 15' of the tongue is made of greater dimensions than the section 15 of the first form of the invention and this section is so placed that its rails 19' will contact with the third rail sections on the base and thus bridge the space between these third rail sections so that a shoe of a train will pass from one third rail section over a rail 19' of the tongue section to the other section of the third rail so that in this form of the invention, current is supplied to the train at all times. The rails 19' of the tongue section 15' are insulated from the base of the section, as shown at 19'' so that current will pass from one of the third rail sections over the rail 19' to the next third rail section.

This modification also shows a slightly different form of operating means for the tongue sections as the member 24' is moved from the shaft 5' by the rack and gear shown generally at 25'.

Thus the form of the invention shown in Figures 7 and 8 is practically the same as that shown in the first form of the invention, though it acts to provide a continuous third rail for a train passing over the main track or the branch track instead of causing a gap in the third rail, as in the first form of the invention.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the

combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A switch for a toy electric train, comprising a base, rails thereon forming main and branch tracks, third rail sections on the base of both tracks, the inner ends of the sections being spaced apart, a switch member for enabling a train to pass over the main track or to take the branch track, said switch member being formed to leave a free space between the third rail sections to prevent a shoe of a train coming in contact with any part of said switch member as it passes over the space between two of the third rail sections and means for actuating the switch member.

2. A switch for a toy electric railroad comprising a base, rails thereon forming a main track and a branch track, third rail sections thereon for the two tracks, the inner ends of the sections being spaced apart, a switch device formed of two sections, the inner section being of less width than the other section so that a shoe of a train passing from one third rail section to another will not come into contact therewith as the shoe passes over the space between the sections of the third rail and means for actuating the two sections in unison.

3. A switch for a toy electric train comprising a base, rails thereon forming a main and a branch track, a pair of third rail sections on the base for the main track, a third rail section for the branch track, the inner ends of the sections being spaced apart, a switch member formed of two sections, the outer section being pivoted to the base at its inner end and the other section being pivoted to the base adjacent its outer end, this latter section being of much less width than the other section, the inner ends of the two sections being adjacent each other so that the wheels of a train will pass directly from one section on to the other, a lever pivoted to the base and to the narrow section, a second lever pivoted to the outer end of the wide section and to the first lever and manually operated means for moving the second lever.

4. A switch for a toy electric train comprising a base, rails thereon forming a main and a branch track, a pair of third rail sections on the base for the main track, a third rail section for the branch track, the inner ends of the sections being spaced apart, a switch member formed of two sections, the outer section being pivoted to the base at its inner end and the other section being pivoted to the base adjacent its outer end, this latter section being of much less width than the other section, a lever pivoted to the base and to the narrow section, a second lever, a pin and slot connection between the

two levers, a pin and slot connection between the end of the second lever and the outer end of the wide section of the switch member and manually operated means for
5 moving the second lever.

5. A switch for a toy electric railroad comprising a base, rails thereon forming a main track and a branch track, third rail sections on the base for the two tracks, the
10 inner ends of the sections being spaced apart, conductors connecting the third rail sections together, a switch tongue formed of

two sections, each section being pivotally connected with the base, the inner ends of the two sections being adjacent each other
15 so that the wheels of a train will pass directly from one section on to the other, manually operated means for moving both sections simultaneously, the second section being moved to a greater extent than the
20 first section of the tongue.

In testimony whereof I affix my signature.

JOHN COOPER.