April 8, 1941. H. J. FERRI 2,237,662

TOY RAILROAD

Filed Dec. 5, 1939

Fig. 1.

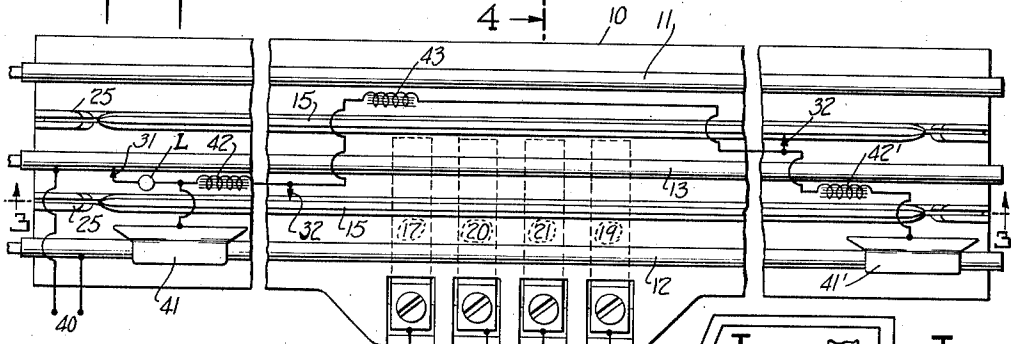


Fig. 2.

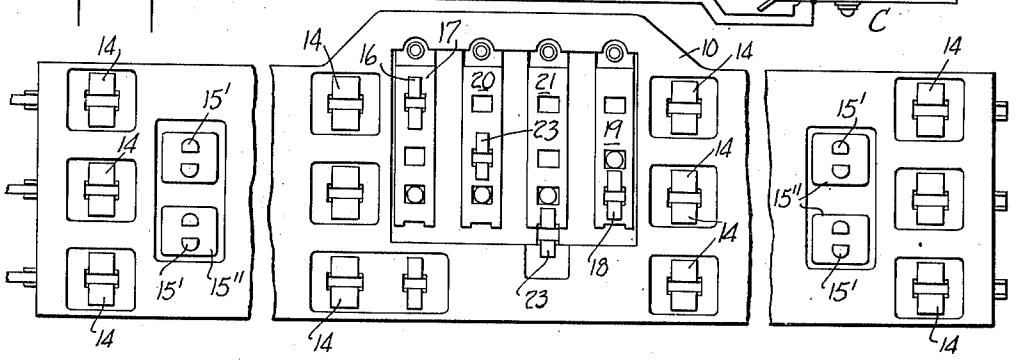


Fig. 3.

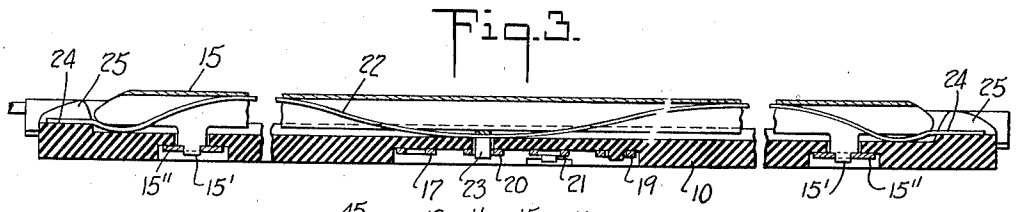


Fig. 4.

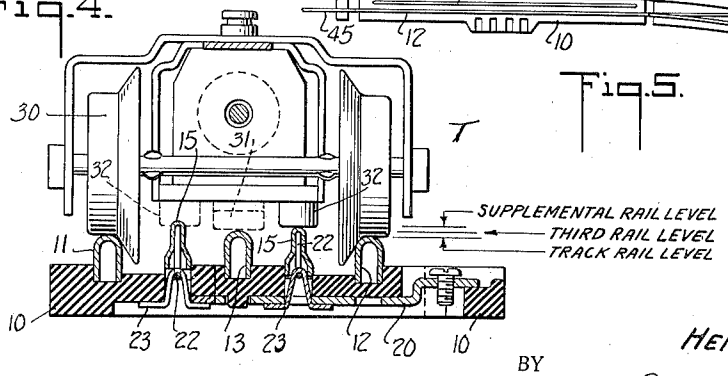
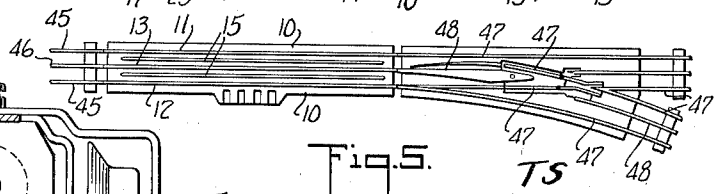


Fig. 5.



INVENTOR.
HENRY J. FERRI

BY

ATTORNEY.

Patented Apr. 8, 1941 2,237,662

UNITED STATES PATENT OFFICE

2,237,662

TOY RAILROAD

Henry J. Ferri, Port Richmond, Staten Island, N. Y., assignor to The Lionel Corporation, New York, N. Y., a corporation of New York

Application December 5, 1939, Serial No. 307,577

7 Claims. (Cl. 191—29)

This invention relates to toy railroads, and is more particularly directed toward toy vehicles and toy trackage designed to supply current to vehicle carried accessories.

Toy electric railroad trackage generally includes three rail track sections and track switch sections which may be arranged in various forms and where control of vehicle carried accessories, such as couplers and unloading devices, is to be had a special section of five rail track is employed. This track has two supplemental rails disposed between the power rail and the track rails and adapted to cooperate with current collectors carried by the trucks of the train.

The present invention contemplates the employment of depressible supplemental rails for the above purpose along with the employment of fixed current collectors on the trucks, the arrangement being such that the fixed contacts are carried at an elevation higher than the third rail or track rail level, so that there is no possibility that the fixed contacts will engage with third rail or track rail as the vehicle passes over switches and crossings. The supplemental rail is yieldingly urged upwardly by suitable spring means so as to assure a good contact.

The accompanying drawing shows, for purposes of illustrating the present invention, one of the many embodiments in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In the drawing:

Figure 1 is a top plan view of a five rail track section with wiring diagram superposed;

Figure 2 is an inverted plan view of the same;

Figure 3 is a longitudinal sectional view on the line 3—3 of Figure 1;

Figure 4 is a transverse sectional view on the line 4—4 of Figure 1 showing a toy truck in elevation; and

Figure 5 is a diagrammatic view of a portion of a track layout.

The special toy track section employs an insulating base 10 and fixedly carries two wheel bearing rails 11 and 12 and a power rail 13. These fixed rails are made of sheet metal bent to shape and each of the rails has fingers, such as 14, extending down through holes in the insulated body and bent over as indicated in Figure 2. Supplemental rails 15, 15 are also made of sheet metal and each of these has fingers such as 15' which pass down through holes in the insulating body and are bent over against stop plates 15'' as shown.

One of the wheel bearing rails 11 has fingers 16 bent over on to a conducting strap 17, while the propulsion rail 13 has fingers bent over on to a conducting strap 19. The supplemental rails 15, 15 are secured to conducting plates 20 and 21 by long sinuous springs 22 which pass under anchoring straps 23 as shown. The ends 24 of the springs are received in slotted lugs 25 formed in the insulating base. The construction just referred to securely but yieldably holds the supplemental rails 15, 15 in place and provides a current connection to the rails.

The relative levels of the track rails, the third rail and the supplemental rails are indicated by the legends in Figure 4.

A typical truck T of Figure 4 has wheels 30 riding on the wheel bearing rails, a contact roller 31 contacting with the third rail and a fixed contact 32 adapted to ride on one of the rails 15. Another truck on the train will be provided with another contact 32 adapted to ride the other rail 15.

Figure 1 diagrammatically illustrates the wiring for the special track section. Power is supplied to the wheel bearing rails and the third rail by circuit connections indicated at 40. A car may have one truck 41 connected to a lamp L and to the contact roller 31 which bears on the third rail. This truck may be connected to an uncoupler coil diagrammatically illustrated at 42 which in turn is connected to the contact 32 bearing on the lower supplemental rail 15. The other truck 41' is connected through a coupler coil 42' with the other contact 32 bearing on the other supplemental rail. The two contacts 32, 32 may be connected to an accessory circuit indicated at 43 adapted to be operated when the rail 15, 15 are at opposite potential. A controller C is shown as connected to the conducting straps 17, 19, 20 and 21, whereby the couplers and accessory may be controlled.

Figure 5 shows the five rail special section of track interposed between a regular three rail section of track having wheel bearing rails 45, 45 and third rail 46 and a track switch section TS having wheel bearing rails 47 and third rails 48. When the vehicle provided with the fixed contacts 32, whereby current can be picked up from the supplemental rails 15, passes through the track switch section, these contacts 32 will be at a level above the third rail and also at a level above the wheel bearing rails so that there is no likelihood of accidentally closing the circuit through the accessories, or through any of

the control devices employed in the track layout.

It is obvious that the invention may be embodied in many forms and constructions within the scope of the claims and I wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. A toy railroad having a track layout comprising interchangeable track sections each having wheel bearing rails and a centrally disposed current conducting rail and a track switch with similarly arranged wheel bearing and current conducting rails, and a toy train having trucks provided with wheels bearing on the wheel bearing rails, a current collector bearing on the current conducting rails, and wherein at least one truck has an off-center current collector fixedly secured between the wheels in a position to be above the central rails and the wheel bearing rails so as to clear all the rails of the track switch, and wherein at least one section of track includes a supplemental conducting rail in the path of the off-center current collector and has spring means urging the supplemental rail upwardly above the level of the other rails for engagement with the off-center current collector.

2. A toy railroad such as claimed in claim 1, wherein the spring means includes a sinuous spring received in the supplemental rail and secured to the base of the track section.

3. A toy railroad track section comprising an insulating base, fixed wheel bearing rails, a centrally disposed current conducting rail, means for securing the said rails to the base, a supplemental inverted U-shaped rail extending lengthwise of the track section between the current conducting rail and one of the wheel bearing rails, means for securing the supplemental rail for vertical movement relative to the base, and spring means housed in the rail for yieldingly holding the said rail in elevated position.

4. A toy railroad such as claimed in claim 3, wherein the spring is sinuous and has its central portion anchored to a contact secured to the base.

5. A toy railroad such as claimed in claim 3, wherein the spring is sinuous and has its ends received in slotted lugs carried by the base and disposed adjacent the ends of the supplemental rail.

6. A toy railroad track section comprising an insulating base, fixed wheel bearing rails, a centrally disposed current conducting rail, means for securing the said rails to the base, a supplemental inverted U-shaped rail extending lengthwise of the track section between the current conducting rail and one of the wheel bearing rails, and having extensions passing downwardly through apertures in the base, stops secured to the extensions to prevent removal of the said rail and to permit limited vertical movement of the rail, and spring means housed in the rail for yieldingly holding the said rail in elevated position.

7. A toy railroad track section comprising an insulating base, fixed wheel bearing rails, a centrally disposed current conducting rail, means for securing the said rails to the base, the base having near its ends upwardly extending lugs between the central rail and one of the wheel bearing rails, the lugs having upwardly opening slots, the base having three apertures in line with said lugs, and a fixed contact below the central aperture, a supplemental rail of inverted U-shaped cross section extending between the lugs and having extensions passing down through the end apertures, stops secured to the extensions to prevent removal of the rail and permit limited vertical movement thereof, and a sinuous wire spring received in and extending lengthwise of the supplemental rail, the ends of the spring being received in the slots in the lugs and the center of the spring being secured to the fixed contact.

HENRY J. FERRI.