Nov. 22, 1955 F. PETTIT 2,724,557

TOY RAILROAD TRACKS AND CURRENT CONNECTORS

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Fig. 1.

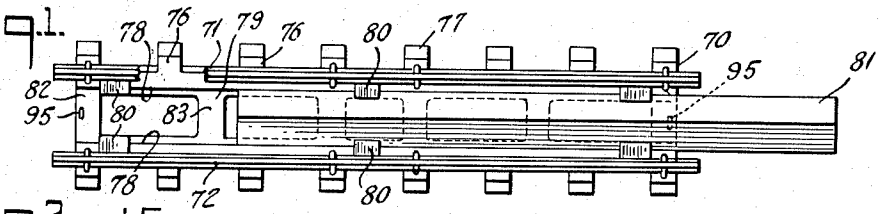


Fig. 2

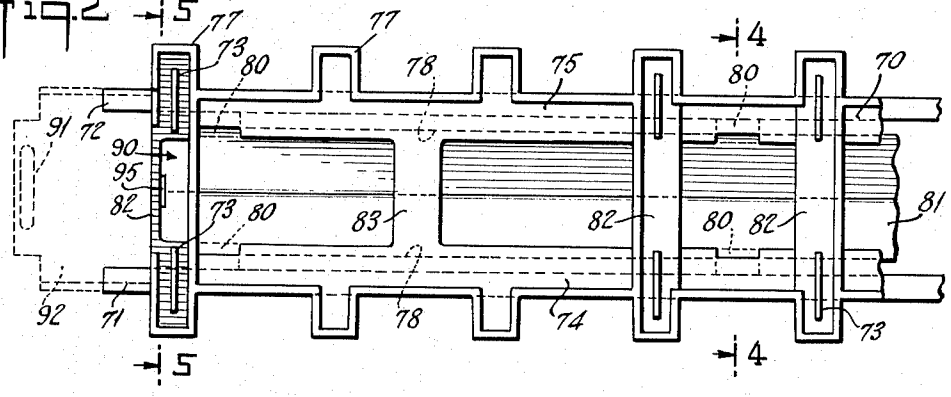


Fig. 3.

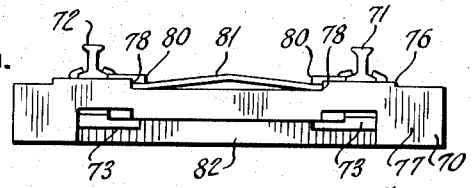


Fig. 4.

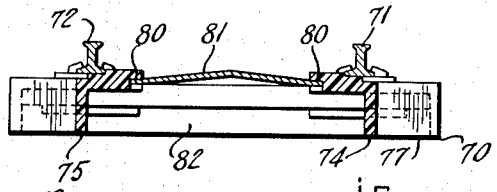


Fig. 5.

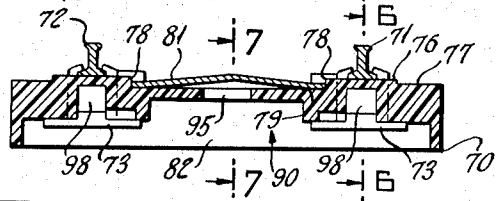


Fig. 6.

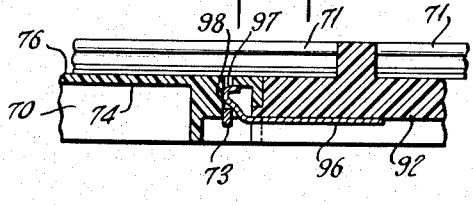
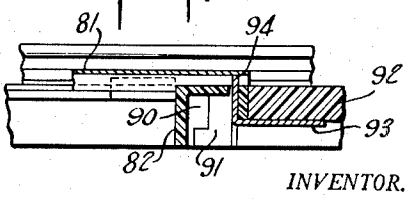


Fig. 7.



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Fig. 8.

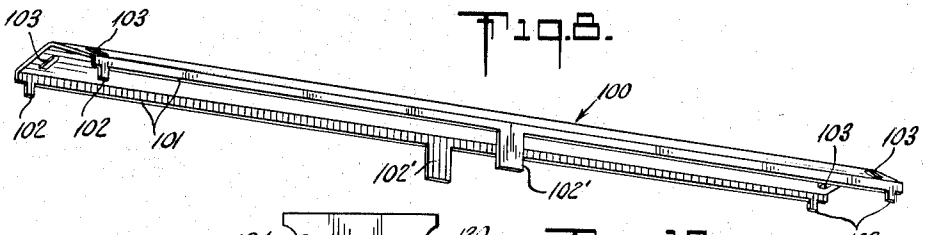


Fig. 9.

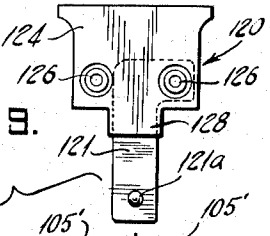
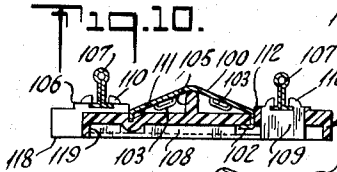


Fig. 10.



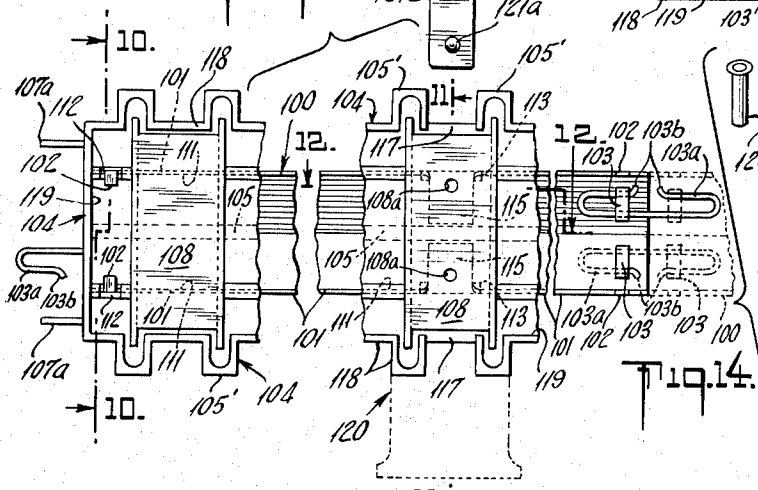


Fig. 14.

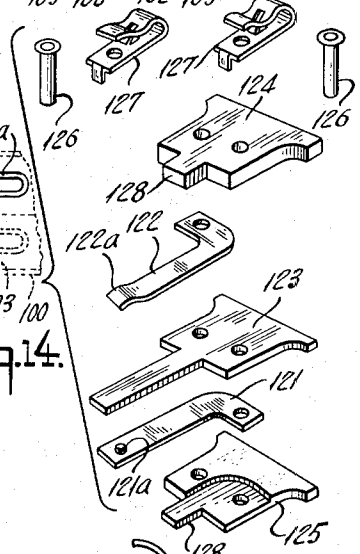


Fig. 11.

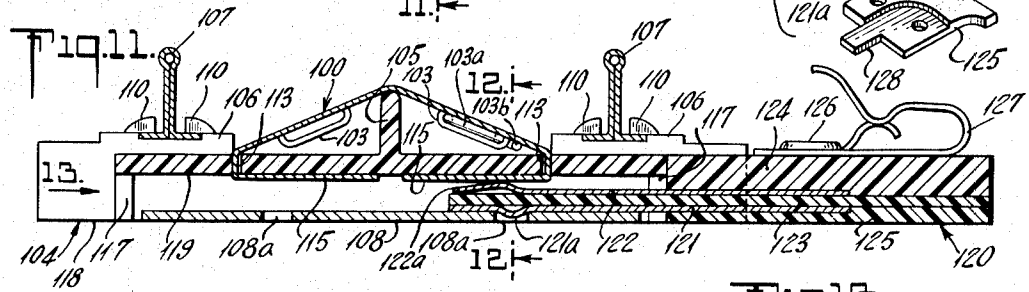


Fig. 12.

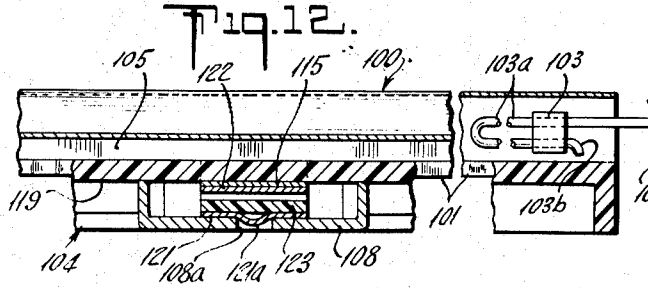
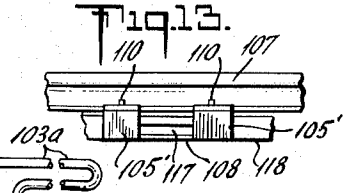


Fig. 13.



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TOY RAILROAD TRACKS AND CURRENT CONNECTORS

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Application March 26, 1951, Serial No. 217,587

14 Claims. (Cl. 238—10)

The present invention relates to toy railroad tracks and current connectors, and is more particularly directed toward toy railroad tracks employing two or more rails supported on an insulating base, such as cross ties and connectors for connecting such rails to extraneous circuits.

The present invention contemplates toy railroad trackage having the usual spaced wheel bearing rails and an interposed power rail which is less conspicuous than the power rail ordinarily employed between the two wheel bearing rails of toy railroads. According to this feature of the present invention, the power rail is in the form of a rather flat inverted V-shaped sheet metal strip which occupies nearly all the space between the flanges of the wheel bearing rails and which provides a ridge halfway between the rails and disposed in a position to contact with the current collectors carried by the rolling stock. This power rail is preferably made of black metal and along with black metal rails and black plastic insulating bases to support all the rails the nature of the track as a third rail is less apparent.

Where the insulating base is a single piece of molded insulating material the elements for holding the power rail in place may be molded integral with the remainder of the insulating base and the power rail slid longitudinally into place and held there.

In the preferred construction, however, the inverted V-shaped, sheet metal power rail is secured to the insulating base by prongs which pass through the base, and one of these is utilized as a contact member for conducting current to the power rail. An improved current connector is provided whereby the power rail and the track rails may be connected to a power supply circuit, a signal circuit or other control circuit.

The accompanying drawings show, for purposes of illustrating the present invention, two embodiments of track in which the invention may take form, and one form of current connector, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a top plan view of a preferred form of toy track section bearing the slidable third rail and showing the third rail partly removed;

Figure 2 is an inverted plan view of the track section of Figure 1 at an enlarged scale;

Figure 3 is an end view of the track section of Figures 1 and 2;

Figures 4 and 5 are sectional views on the line 4—4 and 5—5, respectively, of Figure 2;

Figures 6 and 7 are fragmentary longitudinal sectional views on the lines 6—6 and 7—7, respectively, of Figure 5;

Figure 8 is a perspective view of a modified form of V-shaped power rail as seen from below;

Figure 9 is an inverted plan of a track section with parts broken away, and showing a current connector adjacent the track section;

Figure 10 is a transverse section in line 10—10 of Figure 9, showing the fastening of the V-shaped rail to the plastic base;

Figures 11 and 12 are transverse and longitudinal sectional views on the lines 11—11 and 12—12, respectively, of Figure 9, at a large scale and showing the current connector in its inverted position;

Figure 13 is a fragmentary elevational view in the direction of the arrow 13, Figure 11; and

Figure 14 is an exploded perspective view of the current connector.

The construction shown in Figures 1–7 of the drawings contemplates the employment of a unitary molded insulating base 70 extending the entire length of a track section. This base carries two wheel bearing rails 71 and 72 which are secured in place by metal rail fasteners 73 such as claimed in application of Joseph L. Bonanno, Serial No. 607,176, filed July 26, 1945, since abandoned in favor of application Ser. No. 217,582, filed March 26, 1951 and now Patent No. 2,673,689.

The insulating base 70 has two longitudinally extending elements 74 and 75 whose outer walls are spaced substantially the same as the outer flanges of the rails 71 and 72. The upper faces of these longitudinal elements have slightly raised portions 76 which receive the rails 71 and 72. The longitudinal elements carry outwardly exetnding tie simulating elements 77 and are stepped adjacent the inner flanges of the rails, as indicated at 78 to provide longitudinally extending, upwardly facing surfaces 79.

The insulating base is provided with pairs of overhanging elements 80 which are at a slightly higher level than the surfaces 79 forming grooves. These overhanging elements are inherently resilient and are spaced at just the right height so as to form longitudinal guideways for an inverted V-shaped rail element 81 adapted to form the power rail. This rail element is of the same length as the insulating base and when slid into position may look like a part of the base, even though it is made of metal. In order to save material in making the base it is cored out from underneath, as will be apparent from the inverted plan view in Figure 2. It also has transverse elements 82 which connect elements 74 and 75 and form supports for the track, and connecting webs 83.

When these track sections are to be used with one of the forms of track connector shown in my Patent No. 2,479,022 granted August 16, 1949, the track section and connector fit together as indicated in Figures 2, 6 and 7.

The transverse elements 82 at the ends of the section are provided with downwardly opening pockets 90 which receive lugs 91 on the track connectors 92. Each connector carries a contact strip 93 bent upwardly, as indicated at 94, and passing through holes such as 95 in the base of the track section and engaging the power rail 81. Each connector also carries two contact strips spaced the same as the wheel bearing rails. One such strip is shown at 96, Figure 6. It has spring ends 97 engaging the rail fasteners 73, so that adjacent rails may be connected electrically. The spring ends 97 enter recesses 98 above the center of the rail fasteners 73.

In the modified form of construction, illustrated in Figures 8–14 inclusive, the shallow sheet metal V-shaped rail is made somewhat differently. Here the rail 100 of shallow V-shaped cross-section has continuous vertical reenforcing flanges 101, each of which carries at its ends relatively narrow prongs 102 and near the center, longer, wider prongs 102'. It is slitted and offset, as indicated at 103, for power rail connectors 103*a* formed of bent spring wire and having stops 103*b*. A molded plastic base 104 has a central rib 105, tie-simulating portions 105' and elevated portions 106, carrying the wheel bear-

ing rails **107** with projecting rail connecting pins **107***a*. Rail connectors **103***a* and **107***a* cooperate with rails of adjacent sections to electrically connect them.

The rails **107** are held in place by fasteners **108** in the form of relatively wide, shallow sheet metal stampings having portions **109** extending up through openings in the base **104** and secured onto the rail flanges, as indicated at **110**. This form of track rail fastener is described and claimed in Joseph L. Bonanno Patent No. 2,673,689.

Adjacent each of the wheel bearing rails **107**, the base **104** has a longitudinally extending groove **111** adapted to receive flanges **101**, **101** of the V-shaped rail. In this manner the edges of the center rail are hidden. Near the ends of the track section base, the holes are provided at **112**, for the prongs **102**. These prongs are bent over, as indicated in Figures 9 and 10, fastening the ends of the rail **100** in place. The rib **105** engages the apex of the V and prevents accidental crushing of the rail. Near the center, the base **104** is provided with holes **113**, located between the ties where the central rail fastener member **108** is used.

The prongs **102'** may pass down through the holes **113** and are bent over, as indicated at **115**. They are spaced above the fastener **108**. The bending over of the prongs **102** and **102'** will securely hold the sheet metal rail in place on the track base, and the sheet metal rail will then cover all the space between the elevations **106**, which carry the track rails so that the third or power rail appears to be a part of the road-bed. It may have a hammered surface to simulate ballast.

In addition to holding down the center of the power rail, the prongs **102'**, when bent over, as indicated at **115**, are also utilized for making current connections with the power rail. To give access to the contact member **115**, the base is provided with side openings **117**.

The periphery **118** of the insulating base is flat so that the base rests evenly on a table or other support, the base is recessed, as indicated generally at **119**, to reduce weight and accommodate the rail fasteners **108** and **115**.

The current connector is shown generally at **120**. The details of the current connector appear more clearly at Figure 14. It employs a lower contact blade **121** and an upper contact blade **122**, separated by an insulator **123**. The two blades and the intervening insulator are secured between the two insulating plates **124** and **125** by rivets **126**, which also secure wiring clips **127** in place.

The connector, when assembled, as shown in Figures 9, 11 and 12, can be employed with the track section. The contact blades **121** and **122** and the insulator **123** are thin enough to pass through opening **117** and long enough so that the inner end **122***a* of the upper contact will bear against the under surface of the bent-over prong or contact **115**. The lower contact **121** has a bump **121***a* adapted to enter a hole **108***a* in the fastener **108**. The bottom of the connector is even with the bottom **118** of the base.

The insulators **124** and **125** are provided with central projections **128**, which are adapted to enter between the tie-simulating members **105'** of the base. When the connector is in place, one of the terminals is connected to the wheel bearing rails and the other to the power rail, so that the current may be supplied to the track circuit or current may be taken from the track circuit for operating signals and the like.

The present application is a continuation in part of my application Serial No. 607,135, filed July 26, 1945, since abandoned in favor of the present application.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claims, I wish it to be understood that the particular forms shown are but two of these forms, and 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 track section comprising an insulating base, two conducting wheel bearing rails secured to the base, and a power rail secured to the base, the power rail being in the form of a length of sheet metal of shallow inverted V-shaped section, the top of the inverted V being midway between the wheel bearing rails, the side edges of the power rail being closely adjacent to and insulated from the wheel bearing rails, so as to cover the base between the wheel bearing rails to thereby simulate the appearance of usual two-rail railroad trackage.

2. A toy railroad track section, such as claimed in claim 1, wherein the insulating base has a longitudinal groove in the upper face between the wheel-bearing rails, the groove being partially interrupted by overlying elements spaced along the sides of the groove, and the power rail is slidable lengthwise of the groove and having its edges passing under the overlying elements so that the latter hold the power rail in place.

3. A toy railroad track section, such as claimed in claim 1, wherein the insulating base has a vertical rib engaging the apex of the V-shaped rail.

4. A toy railroad track section, such as claimed in claim 1, wherein the edges of the V-shaped rail are downwardly flanged and the insulating base has longitudinal grooves to receive the flanges.

5. A toy railroad track section, such as claimed in claim 1, wherein the edges of the V-shaped rail have downwardly extending prongs extended through the base and folded back against the bottom of the base.

6. In toy railroad trackage, having a track section, including an insulating base, a transversely extending U-shaped metal member having its bottom spaced below the base and side elements, extending up through the base, and spaced wheel bearing rails, at least one of which secured to the top of the base by the side elements, the combination therewith of a power rail of shallow, inverted, V-shaped cross-section having a securing prong passed through a hole in the base and bent against the bottom of the base above the bottom of the U-shaped metal member to thereby provide vertically spaced conductors, one connected to the power rail and the other to the said wheel bearing rail.

7. The combination of claim 6, including a plug member having two conductors, one above the other and insulated from one another and insertable into the space between the first-mentioned conductors.

8. A toy railroad track section comprising an insulating base, two conducting wheel bearing rails carried on the base, a rail fastening device of U-shaped cross-section having its bottom portion spaced below the base and its upper portions secured to one of the wheel bearing rails, a power rail having a fastening prong extending through the base and bent against the under-surface of the base directly above the rail-fastening device, and a current connector in the form of a plug insertible into the space between the rail fastener and prong and having two conductors insulated from one another, one engageable with the prong, the other with the rail fastener.

9. A track section such as claimed in claim 8, wherein the base has laterally extending tie-simulating elements aligned with the upper portions of the rail fastener and the plug has laterally disposed, cut-back portions engageable with the tie-simulating elements.

10. A toy railroad track section comprising an insulating base adapted to rest on a flat support and having a downwardly opening recess with its top wall spaced above the bottom of the base and side walls with lateral openings, a power rail on top of the base, power rail securing means, including a conducting member bearing against the top of the recess, wheel bearing rails, and means for securing the latter rails to the base, including a transversely extending, U-shaped sheet metal fastener between the side openings, the member being housed in the recess and having its bottom below the first conduct-

ing member, to thereby form two opposed spaced conductors available for plugging connection through said side openings to an extraneous circuit.

11. In combination a toy railroad track section comprising an insulating base adapted to rest on a flat support and having a downwardly opening recess with its top wall spaced above the bottom of the base and side walls with lateral openings, a power rail on top of the base, power rail securing means, including a conducting member bearing against the top of the recess, wheel bearing rails, and means for securing the latter rails to the base, including a transversely extending, U-shaped sheet metal fastener between the side openings, the member being housed in the recess and having its bottom below the first conducting member, to thereby form two opposed spaced conductors available for plugging connection through said side openings to an extraneous circuit, and a plug having two conductors, insulated from one another and insertable through one of the openings to bring its conductors into engagement with the two spaced conductors, the bottom of the plug being at the same level as the bottom of the base.

12. The combination of claim 11, wherein the plug has on its upper surface two wire connectors connected to its respective plug conductors.

13. In toy railroad trackage, a sectionalized power rail

in the form of shallow inverted V-shaped sheet metal sections, end to end, each section having near its ends downwardly offset slitted portions, and spring wire clips received in the slitted, offset portions of two adjacent sections for electrically connecting them to another.

14. In toy railroad trackage, two shallow inverted V-shaped power rails end to end, each rail having a downwardly offset slitted portion aligned with a similar portion of the other rail, and a rail connector in the form of an elongated spring wire loop, one side of which is open, the ends of the loop being received in the offset portions of the rails, the loop having outwardly bent stops at its ends, which limit the extent the loop end may enter the opening formed by the slitted offset portion of the rail.

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