Oct. 28, 1930. J. C. KOERBER 1,779,605

TRACK STRUCTURE FOR TOY ELECTRIC RAILWAYS

Filed Dec. 31, 1928 2 Sheets-Sheet 1

Fig. 1.

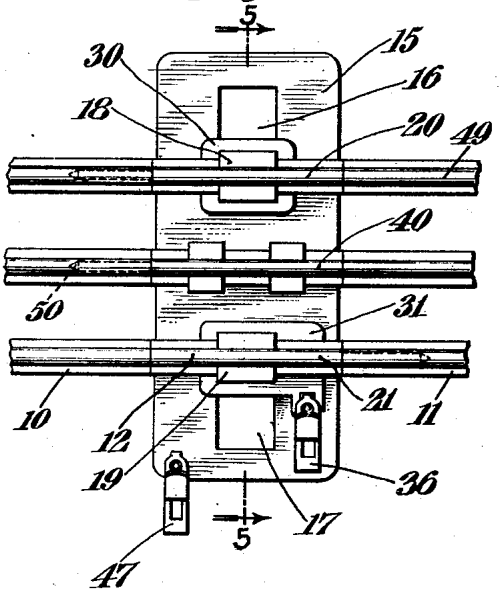


Fig. 2.

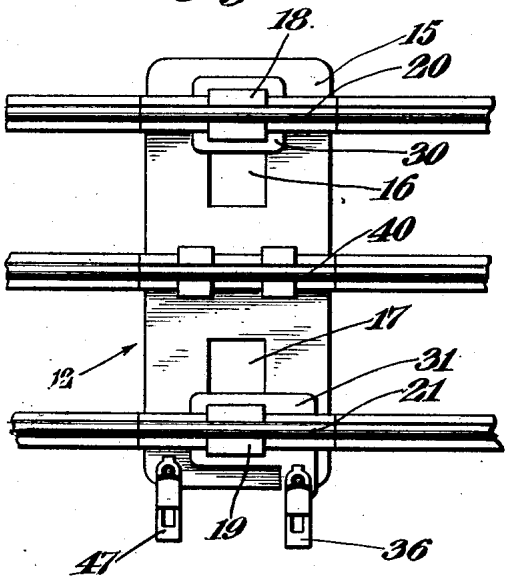


Fig. 3.

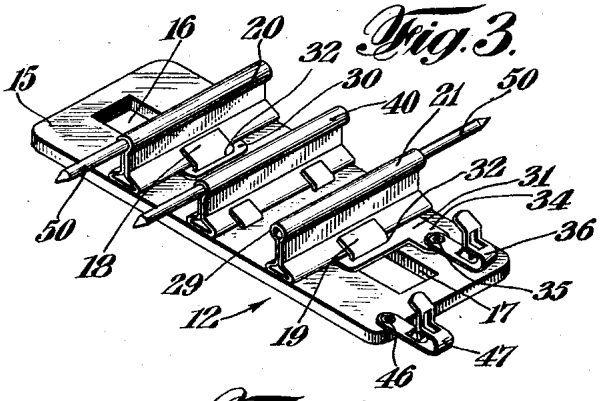


Fig. 4.

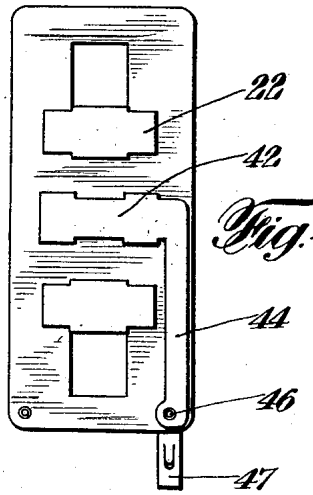
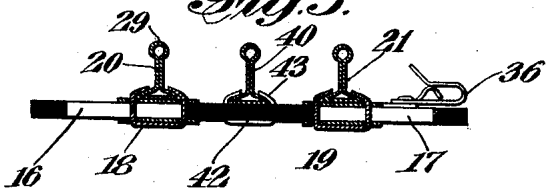


Fig. 5.



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TRACK STRUCTURE FOR TOY ELECTRIC RAILWAYS

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Fig. 9.

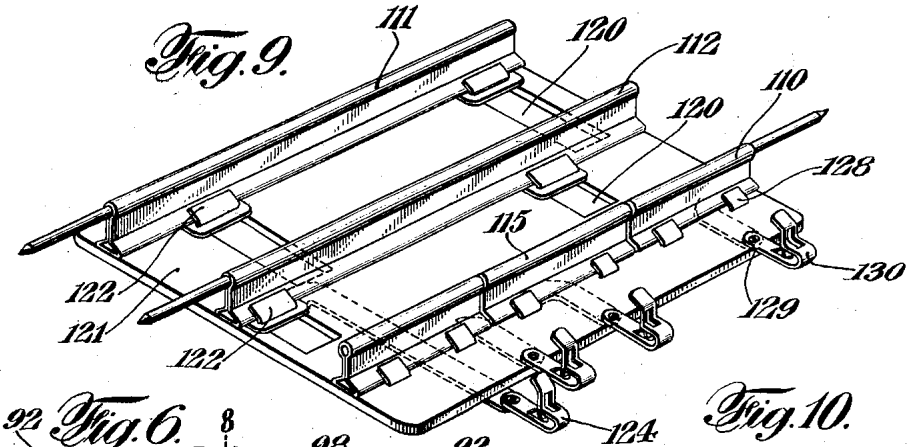


Fig. 6.

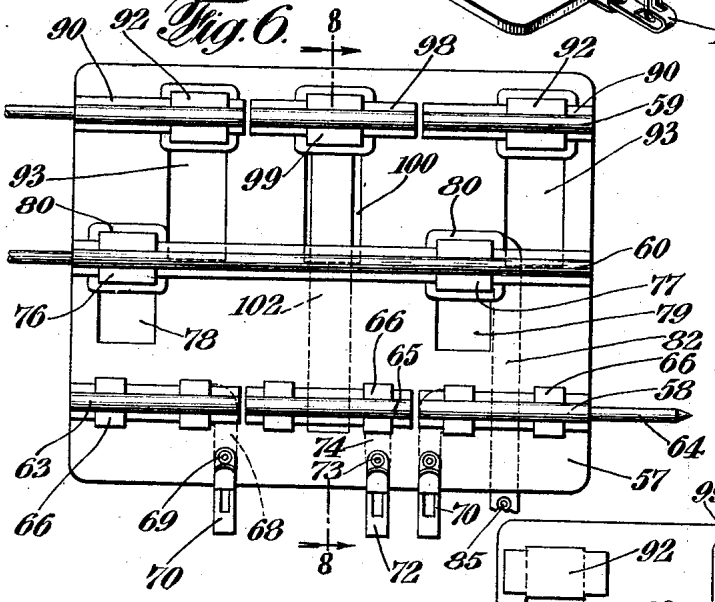


Fig. 10.

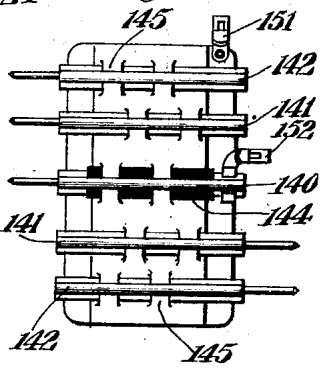


Fig. 8.

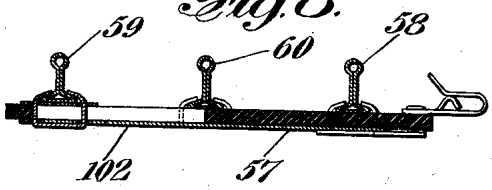
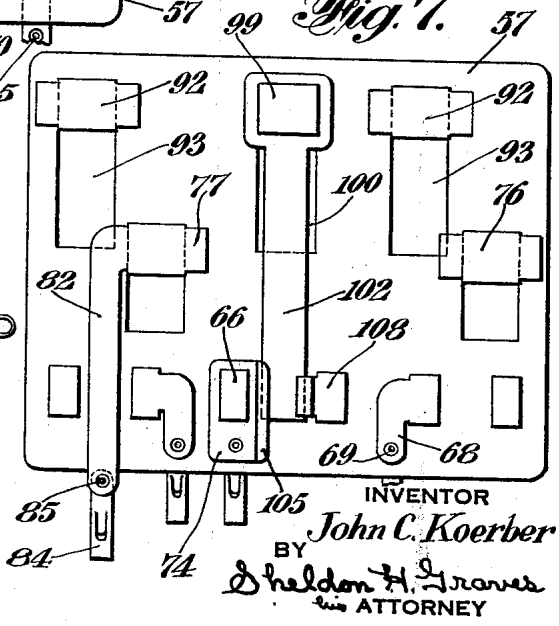


Fig. 7.



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UNITED STATES PATENT OFFICE

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TRACK STRUCTURE FOR TOY ELECTRIC RAILWAYS

Application filed December 31, 1928. Serial No. 329,592.

This invention relates to toy railways and more particularly to the track constructions for mechanical or electrical toy railways.

One object of my invention is to provide an improved toy railway track, the rails of which are adjustable toward and away from one another, so that the track may be altered from a track of one gauge to track of another gauge.

A further object of my invention is to provide an improved toy railway track section which is so constructed that it may be joined end to end with track sections either of wide gauge or of narrow gauge, so as to form with such track sections a continuous track.

A further object of my invention is to provide an electric toy railway track or track section, the rails of which are adjustable as above indicated and wherein means is provided for electrically connecting the rails to an external circuit.

A further object of my invention is to provide an improved toy electric railway track section with improved means for connecting the rails of the section with one or more electric circuits and wherein the use of the usual conducting track clips is avoided.

Other objects of my invention will appear from the following description taken in connection with the accompanying drawing, wherein:

Figure 1 is a top plan view of a track section showing one embodiment of my invention and wherein the track section is shown as joined to sections of narrow gauge track.

Figure 2 is a view similar to Figure 1 but showing my improved section joined to sections of wide gauge track.

Figure 3 is a perspective view of the improved track section shown in Figures 1 and 2.

Figure 4 is a bottom plan view of the structure shown in Figure 3.

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a top plan view of a track section showing a modified form of my invention wherein the outside rails, each include a short insulated portion designed for use in the operation of wayside signals, cross gates, or similar devices.

Figure 7 is a bottom plan view of the structure shown in Figure 6.

Figure 8 is a sectional view taken on the line 8—8 of Figure 6.

Figure 9 is a perspective view of a track section showing a still further modification, and

Figure 10 is a perspective view of a still further modified form of my invention.

Referring to Figure 1, reference characters 10 and 11 represent ends of narrow gauge track sections of the type commonly employed in toy electric railways and joining the ends 10 and 11 is a short track section 12 which forms with the remaining sections a continuous track having two outer wheel bearing rails and an intermediate third rail or power rail.

The track section 12 comprises a base 15 of insulating material which is formed with two longitudinal slots, 16 and 17, respectively, which extend inwardly from points adjacent to the opposite ends of the base. Mounted to slide in the slots 16 and 17 are sheet metal clips 18 and 19 respectively, which extend upwardly through the slots and are bent at their upper ends over the flanges of the wheel bearing rails 20 and 21 of the track section. For the purpose of retaining the clips 18 and 19 in their respective slots, the bottoms of these clips are formed with lateral extensions 22 which bear against the under face of the base 15 and bearing against the upper face of the base are sheet metal plates 30 and 31, each of which is provided with two slots 32 through which the upper ends of clip 18 or 19 respectively, extend. If desired the metal plates 30 and 31 may be made resilient so as to press upwardly against the lower face of the rail flanges and downwardly against the upper face of the base 15 and in this manner serve to hold the clips and attached rails in their adjusted positions along the base.

The metal plate 31 is formed at one corner with an extension 34 to which is secured, as by means of an eyelet 35, a terminal binding

member or clip 36 adapted to hold a terminal wire.

Rigidly secured to the base 15, between the rails 20 and 21 and insulated therefrom, is a third rail or rail section 40. The third rail 40 is secured to the base 15 by a sheet metal member 42, located beneath the base and provided with lugs 43 which extend upwardly through the base and are bent over the lower flange of the third rail 40.

Member 42 is formed with a portion 44 which extends along the underside of the base 15 and is secured to the base at its outer end by an eyelet 46. Eyelet 46 extends through the base and serves to hold a terminal binding member or clip 47.

The rails of the section 12 are formed of sheet metal, and have hollow tubular heads 29 in which are secured projecting pins 50, employed for connecting the section to the adjacent sections of track as shown in Figures 1 and 2. The pins 50 project into the tubular heads of the corresponding rails of adjacent sections and serve to hold the track sections together.

To adapt the section 12 for engagement with sections of a narrow gauge track, the rails 20 and 21 are pressed inward toward the centre rail so that they occupy the positions shown in Figures 1 and 3. The section 12 may then be joined to the adjacent ends of sections of narrow gauge track in the usual manner by pushing the pins 50 of one section into the tubular openings at the rail ends of the adjacent section. To adjust the section 12 for attachment to sections of standard wide gauge track the rails 20 and 21 of the section 12 are pushed outwardly to the outer ends of the slots. The section 12 may then be connected to adjacent sections as shown in Figure 2. It will be noted that the section 12 embodies a terminal means adapted to connect one of the wheel-bearing rails of the track to a terminal of an external circuit and also a second terminal means adapted to connect the intermediate or third rail to another terminal of an external circuit. By these terminal means the wheel-bearing rails of the assembled track may be connected to one terminal of a source of supply and the power or third rail to the other terminal of such source.

In the track section shown in Figures 6 to 8 inclusive, the adjustment for wide and narrow gauge is by movement of one of the wheel-bearing rails and the intermediate power rail, instead of by movement of both of the wheel-bearing rails as in the form of invention shown in Figures 1 to 5. The modification shown in Figures 6 to 8 also differs from that shown in Figures 1 to 5, in that the wheel-bearing rails in the form of invention shown in Figures 6 to 8, each comprise a number of insulated rail sections and provision is made for connecting different rail sections with different terminals.

The track section shown in Figures 6 to 8 comprises an insulating base 57, to which is secured a stationary wheel-bearing rail 58, a movable wheel-bearing rail 59 and a movable third or power rail 60. The rail 58 comprises end sections 63 and 64 respectively and an intermediate insulated section 65. The end sections 63 and 64 are secured to the base 57 by clips 66. One of the clips 66 which serves to secure the rail section 63 and one of the clips 66 which serves to secure the rail section 64 to the base, may be extended beneath the base as indicated at 68 and be connected by means of an eyelet 69 to a terminal binding member or clip 70. In this manner the rail sections 63 and 64 may each be electrically connected with an external circuit or the two rail sections 63 and 64 may be electrically connected with one another. The intermediate insulated rail section 65 may be connected to a binding clip 72 by means of an eyelet 73 and a plate 74 secured to the bottom of the base 57 by the eyelet 73 and by one of the clips 66.

The intermediate adjustable rail 60 is secured to the base by means of clips 76 and 77 which are movable respectively in slots 78 and 79 formed in the base 57. Interposed between the base and the power rail 60 and held in position by the clips 76 and 77 are metal plates 80 which are similar in form to the plate 30 shown in Figure 3. The clip 77 is formed beneath the base 57 with an extension 82 which projects outwardly from one end of the base and carries a terminal binding member 84 which is secured to the outer end of the extension 82 by an eyelet 85.

The movable wheel-bearing rail 59 is formed of three sections, two outer sections 90, each of which is secured to the base 57 by sheet metal clips 92 which extend through and are movable in slots 93 in the base. The wheel-bearing rail 59 also comprises an insulated intermediate section 98 which is secured to the base by a clip 99 that extends through and is movable in a slot 100 in the base. The clip 99 also serves to secure to the underside of the base, a metal strip 102 which forms an electrical connection between the clip 99 and the metal plate 74, thus serving as part of an electrical connection between the insulated rail section 98 and the terminal binding member 72. Strip 102 is preferably formed of resilient metal and bears downwardly against an offset portion 105 of the plate 74, one edge of the strip 102 being located between the offset portion 105 of the plate 74 and the bottom of the base 57 as shown in Figure 7. To prevent lateral movement of the strip 102 away from the plate 74 I may provide a guiding plate 108 secured to the bottom of the base 57 at the opposite edge of the strip 102.

While I have shown the end sections 90 and

the intermediate section 98 of the wheel-bearing rail 59 as independently adjustable along their respective slots, it is obvious that these several sections may be connected together by insulating material so that the entire rail section 59 may be adjusted as a unit.

Also, while I have shown separate terminal means connected respectively to the power rail and each of the sections of the rail 58, it is obvious that in certain cases one or more of these terminal means may be omitted.

In the modification shown in Figure 9, I provide a stationary or fixed wheel-bearing rail 110, a movable wheel-bearing rail 111 and a movable third or power rail 112. The stationary rail 110 has a short section 115 which is spaced at its ends and so insulated from the remaining portions of the wheel-bearing rail 110. The rails 111 and 112 are movable along the slots 120 formed in the base 121, these rails being held by clips 122 which extend through and are movable along the slots.

Electrical connection between a terminal of an outside circuit and the third rail 112 is through a binding member 124 secured to an extension of one of the clips 122, this extension being shown in dotted lines in Figure 9. The separate sections of the wheel-bearing rail 110 are secured to the base 121 by means of clips 128 which may be extended beneath the base as indicated in dotted lines to form electrical connection between each rail section and an eyelet 129 and thence through the eyelet to the binding member 130.

It will be seen that in the form of my invention shown in Figures 1 to 9 that I provide a fixed or stationary base and adjustable rails and terminal means. I may if desired make the terminal means stationary and adapted to have sliding contact with the movable rails or some conducting member secured to the movable rails. I may also if desired provide movable or adjustable terminal means adapted to cooperate with a fixed base and fixed rails, the terminal means being secured or clamped to the base or rail tie. I may thus provide a clip adapted to be clamped to a tie of wide gauge or narrow gauge track, this clip having fixed or adjustable contacts adapted to connect with separate rails of the track.

In this latter case as well as in the forms of invention shown in Figures 1 to 9, I provide terminal means adapted to connect the rails of a toy railway track of wide gauge or of narrow gauge with an external circuit and this terminal means is held by a base or tie which in turn serves to support sections of track rail and furthermore the terminal means in being adjusted to adapt it to tracks of different gauge, is movable relative to the base or rail supporting means.

In the form of invention shown in Figure 10, instead of providing a track section with movable rails to adapt it for connection with track sections of wide or of narrow gauge, I provide a short track section with five stationary rail sections arranged parallel to one another. The centre section 140 is employed as a power rail section for both wide and narrow gauge tracks and serves as a connection between the adjacent ends of the power rail of standard wide gauge or narrow gauge track. Equally spaced from the power rail at opposite sides of the power rail are two wheel-bearing rails 141 which serve as a connecting means between the adjacent ends of the wheel-bearing rails of narrow gauge track. Also located on opposite sides of the power rail and spaced at a greater distance from the power rail are two rails 142 which serve as wheel-bearing rail sections when the terminal device is used with track of wide gauge. The rails 140—142 are shown in Figure 10 as supported by a sheet metal base or tie which is formed with lugs 145 that serve to clamp or hold the lower flanges of the rails to the top of the tie. The power rail 140 is insulated from the metal of the tie by a piece of flexible insulating material 144, this being the usual construction for insulating rails from their supporting ties. The remaining rails 141 and 142 are in electrical contact with the metal of the tie. To provide a means for connecting the rails 141 and 142 with an external circuit I mount a binding member or clip 151 at one end of the tie, and I also provide suitable means for connecting the power rail section 140 to a circuit terminal as the binding clip 152 secured directly to the power rail section.

While I have shown the rail sections 140—142 as attached to and supported by a sheet metal tie of the usual form, it is obvious that other supporting means may be employed.

As a further modification of my invention, I may if desired mount a suitable wayside accessory such as a signal or station light on the base of any of the forms of track section herein disclosed, or I may in some other way connect such device with the track section so that the two form a unitary structure. Thus the end of the base 15 shown in Figures 1 to 5 opposite the binding terminals 36 and 47 may be extended so as to form a support for a station light and the circuit terminals of the light connected by flexible wires to the binding terminals 36 and 47 respectively.

Or if desired the accessory may be formed with a sheet metal base which forms a ground terminal for the accessory circuits and this base extended so that the movable rail 20 slides in contact therewith, thus forming an electrical circuit connection between the binding terminal members 36 which may be connected to a source of current and one terminal of the accessory by way of the wheel-bearing rails. The other terminal of the accessory may be connected by a conductor to the third rail.

Having now described my invention, what

I claim and desire to secure by Letters Patent is:

1. A short toy railway track section comprising a central power rail and wheel bearing rails at opposite sides of said power rail and means permitting the attachment of said section to sections of track of wide or narrow gauge, so as to form, with either of said last named sections, a continuous track.

2. A short toy railway track section comprising a central power rail and wheel bearing rails at opposite sides of said power rail, means permitting the attachment of said section to sections of track of wide or narrow gauge, so as to form with either of said last named sections a continuous track, and separate terminal means connected to the power and wheel bearing rails.

3. A toy railway track section having three parallel rails, two of which are bodily adjustable toward and away from the remaining rail.

4. A toy railway track section having three parallel rails, two of which are adjustable toward and away from the remaining rail, and terminal members electrically connected to different rails.

5. A toy railway track section having two outside wheel bearing rails and an intermediate third rail, two of said rails being adjustable toward and away from the remaining rail, so as to change the track gauge of the section.

6. A toy railway track section having two outside wheel bearing rails and an intermediate third rail, two of said rails being adjustable toward and away from the remaining rail, so as to change the track gauge of the section, and terminal members, each electrically connected to a different rail.

7. A toy railway track section comprising wheel-bearing rails and a third rail, means connecting and serving to support said rails, and terminal means adapted to be supported by said supporting means, said terminal means comprising an element adapted to engage said rail supporting means and movable relative to said rail supporting means to adapt said terminal means to tracks of different gauge.

8. A toy railway track section comprising wheel-bearing rails and a third rail, means connecting and serving to support said rails and terminal means comprising an element adapted for holding engagement with and movable relative to said rail supporting means, said element being adapted to occupy different positions to adapt said terminal means to tracks of different gauge.

9. In a device of the class described, the combination of an insulating base, of rails supported by said base, one of said rails being adjustable toward and away from another rail to adapt said track section for use in tracks of different gauge and said base being formed to guide said rail in its movement.

10. A toy railway track section comprising an insulating base formed with slots, a stationary rail secured to said base, a movable rail, holding means for said movable rail extending through said slot and terminal means electrically connected to said holding means.

11. A toy railway track section comprising a base, a stationary third rail mounted on said base, two wheel-bearing rails mounted on said base at opposite sides of said third rail, said wheel-bearing rails being movable along said base toward and away from said third rail so as to adapt said track section for use in tracks of different gauge.

12. A toy railway track section comprising a base, a stationary third rail section mounted on said base, two wheel-bearing rail sections mounted on said base at opposite sides of said third rail, said wheel-bearing rails being movable along said base toward and away from said third rail, so as to adapt said track section for use in tracks of different gauge, terminal means connected to said third rail and terminal means connected to said wheel-bearing rails.

13. In a device of the class described a base having slots therein, a pair of wheel bearing rails and a power rail mounted on said base, two of said rails being adjustable relative to the third rail to adapt the rails for connection to tracks of different gage, said slots serving as guides for the adjustment of said rails and circuit terminals connected to different rails.

14. In a device of the class described an insulated base having slots therein, a pair of wheel bearing rails and a power rail mounted on said base, two of said rails being adjustable relative to the third rail to adapt the rails for connection to tracks of different gage, said slots serving as guides for the adjustment of said rails and circuit terminals connected to different rails.

15. A toy railway track section comprising a base, a stationary third rail mounted on said base, a stationary terminal mounted on said base and connected with said third rail, two wheel-bearing rails mounted on said base at opposite sides of said third rail, said wheel bearing rails being movable toward and away from said third rail so as to adapt said track section for use in tracks of different gauge and a terminal connected to a wheel-bearing rail and movable therewith.

16. A toy railway track section having two outside wheel bearing rails and an intermediate power rail, one of said wheel bearing rails and said power rail being each adjustable toward and away from the remaining wheel bearing rail so as to change the gauge of the section.

17. A toy railway track section consisting of a central power rail and two pairs of wheel bearing rails, the two rails of each pair being

located at opposite sides of the power rail and spaced from said power rail so as to permit one of said pairs to be used as wheel bearing rails for vehicles of one gauge and the other of said pairs to be used as wheel bearing rails for vehicles of another gauge.

18. A toy railway track section having two outside wheel-bearing rails and an intermediate power rail, one of said wheel-bearing rails and said power rail being each adjustable toward and away from the remaining wheel-bearing rail so as to change the gauge of the section and terminal members connected, respectively, to the power rail and a wheel-bearing rail.

19. A short toy railway track section consisting of a central power rail and two pairs of wheel-bearing rails, the two rails of each pair being located at opposite sides of the power rail and spaced from said power rail so as to permit one of said pairs to be used as wheel-bearing rails for vehicles of one gauge and the other of said pairs to be used as wheel-bearing rails for vehicles of another gauge and terminal members connected, respectively, to the power rail and a wheel bearing rail.

Signed at New York, in the county of New York and State of New York, this 21st day of December, A. D. 1928.

JOHN C. KOERBER.