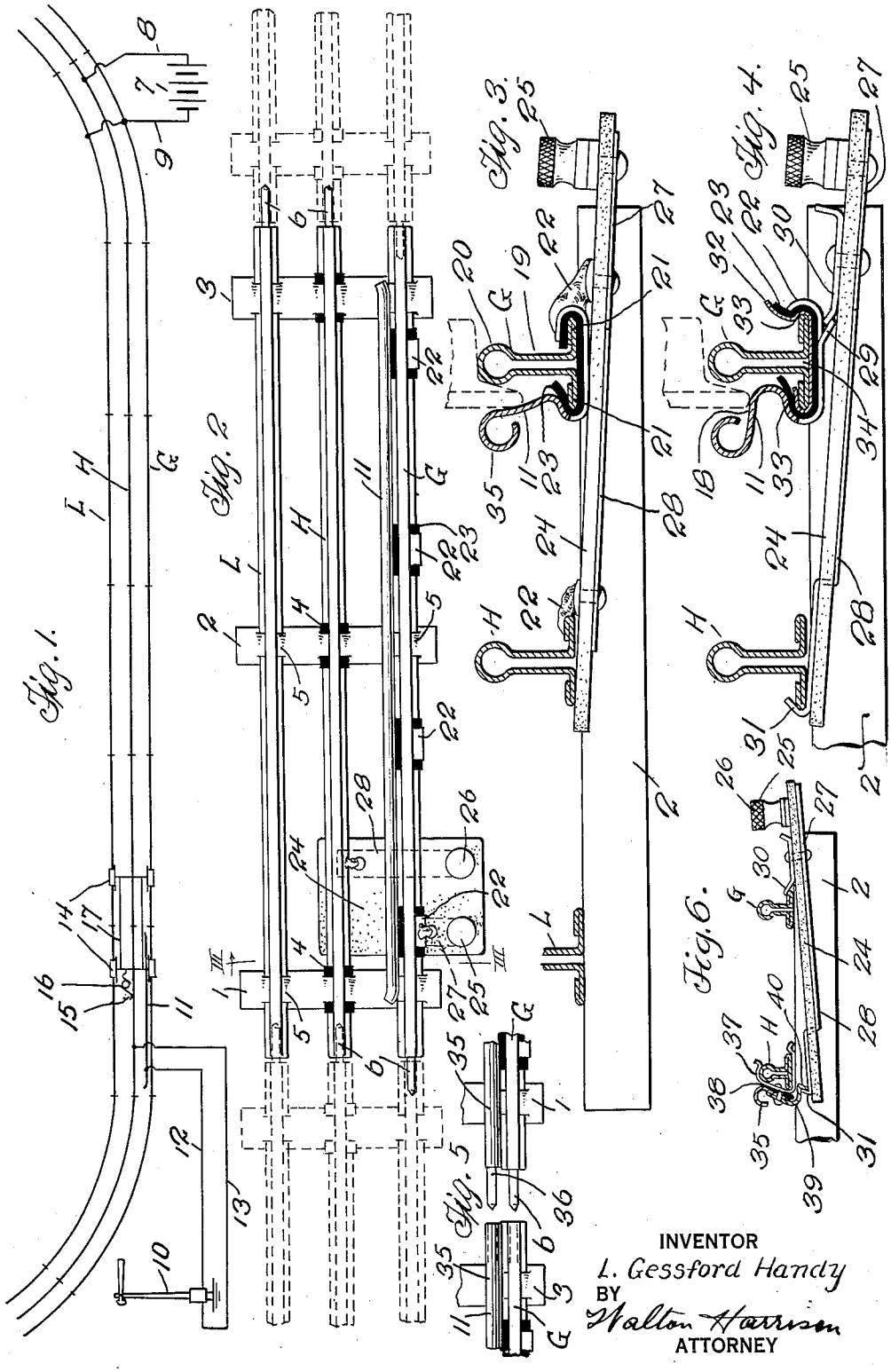
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ELECTRIC TOY TRACKAGE

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ELECTRIC TOY TRACKAGE

Original application filed September 18, 1926, Serial No. 136,359, now Patent No. 1,753,147, dated April 1, 1930. Divided and this application filed March 31, 1930. Serial No. 440,247.

This invention relates to trackage for toy electric trains, such for instance as is contained in my Patent No. 1,636,416, July 19th, 1927, and in my co-pending application Serial No. 136,359, filed Sept. 18, 1926, now Patent No. 1,753,147 dated Apr. 1, 1930, the present application being a division of said mentioned co-pending application.

An object of the present invention is to provide improved means whereby the passage of a train over a given section or sections of the track may be made to control the operation of auxiliary devices such as signals and the like.

A further object is to provide an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being constructed to include improved means whereby the passage of a train over said section will complete a shunt circuit, in parallel with the train circuit, for controlling one or more auxiliary devices.

A further object is to provide an electric toy track section in which one of the wheel bearing rails is made to provide a contact to be engaged by the wheels of a passing train for controlling a shunt circuit in parallel with the train circuit but in which necessity for the use of insulating connecting means between said track rail and aligned rails of adjacent other toy track sections is dispensed with.

A further object is to provide an electric toy track section in which one of the wheel bearing rails is made to provide a contact to be engaged by the wheels of a passing train for controlling a shunt circuit in parallel with the train circuit but in which a conductive path is provided through said track section between the opposite ends of the mentioned track rail so that said path may carry the train circuit as for instance if for any reason the opposite wheel bearing rail does not provide a conductive path through the section for that purpose.

A further object is to construct the contact so that it may be attached either permanently or removably to one of the rails of the electric toy section and so that the usual detachable conductor attaching clip may be used therewith for connecting a signal device or the like thereto.

A further object is to construct the contact part so that it will provide improved means by which the contact parts of two adjacent electric toy sections may be electrically connected.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles constituting the invention; and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawing which is to be taken as a part of this specification, and in which I have shown merely a preferred form of embodiment of the invention:—

Fig. 1 is a diagrammatic plan view of an electric toy track system employing sections of the type with which this invention is concerned.

Fig. 2 is a top plan view of an improved toy track section constructed in accordance with this invention and showing the same in operative association with aligned rails of adjacent other toy track sections.

Fig. 3 is an enlarged transverse sectional view taken upon the plane of line III—III of Fig. 2.

Fig. 4 is a similar sectional view but illustrating a modification of the contact part, and its connections, and

Fig. 5 is a fragmentary detail view illustrating the manner of connecting together the contact parts of the electric toy sections.

Fig. 6 is similar to Fig. 4 but illustrating a modification.

Referring to the drawing for describing in detail the structure illustrated therein, the reference characters L and G indicate the two metallic wheel bearing rails of an electric toy track section, and the reference character H indicates the intermediate or "third" metallic rail of said section. These three separate rails are connected together by cross tie

means, such as the three metallic cross ties 1, 2 and 3 as illustrated.

The intermediate or "third" rail is insulated from the other rails and from the cross ties by insulating members 4—4—4 as is customary.

The wheel bearing rails L and G as shown are not insulated from the cross ties. They are held in metallic contact with said cross ties as by means of the tangs 5—5 provided upon the cross ties for this purpose and hence are in constant electrical connection with said cross ties.

Each of the rails L, G and H is provided with connecting means at its opposite ends by which it may be readily mechanically and electrically connected in track forming relation with aligned rails of adjacent other toy track sections. As an illustration of means for this purpose the drawing herewith shows said rails to be formed with sockets at their ends and metallic pins 6—6 for engaging in said sockets, said pins being adapted to extend into similar sockets provided in the aligned rails of adjacent other toy track sections.

The track system illustrated in Fig. 1 is made up of a series of toy electric track sections constructed as thus described, said sections being connected together end to end in a well known manner. A source of electrical energy is indicated at 7 with a conductor 8 leading from one side thereof to the "third" rail of the system, and with a conductor as 9 from its opposite side connected with the two wheel bearing rails of the system, it being noted that although the conductor 9 as shown in Fig. 1 as having direct connection with both of the wheel bearing rails it is usually sufficient to connect said conductor directly with only one of said rails, the current being fed to the other wheel bearing rail through the several metallic cross ties which provide a metallic bond between the wheel bearing rails as above explained.

In Fig. 1 a signal device to be operated by a passing train is indicated at 10, and the attachment with which the present invention is particularly concerned is indicated by the reference character 11. A conductor 12 extends from a part of the attachment 11 to the signal device 10, and a second conductor as 13 connects the opposite side of the signal device with the "third" rail H of the system.

A train is indicated as travelling along the system said train having wheels 14 riding upon the wheel bearing rails L and G and having a contact shoe 15 riding upon the "third" rail, the shoe being connected to one side of a train propelling motor 16, the opposite side of the motor being mounted upon the frame as 17 of the train and hence upon all of the wheels of the train and upon the wheel bearing rails L and G.

The propelling circuit for the train is of the usual type well known in this art, namely, from source 7 through conductor 8 to the "third", or power, rail, through the shoe 15 and motor 16 to ground upon the frame of the train and back to the opposite side of the source through the wheel bearing or "ground" rails L and G.

A shunt circuit through the signal device 10 is closed as soon as one of the wheels of the train rides into engagement with the portion 11 of the present attachment, said shunt circuit being in parallel with the train circuit as follows: From source 7 along the "third" rail to conductor 13, through the signal device and back, by way of conductor 12, to the portion 11, and thence, by way of the wheel which is in engagement with said portion 11, to ground upon the frame of the train, and back along the wheel bearing rails to the opposite side of the source.

The detailed construction and arrangement of parts of the present attachment may now be readily understood as follows:

The portion 11 consists of a contact strip which is intended to stand preferably at the inner side of the track rail G and in such relation thereto as to provide a wedge-shaped channel along which the flange of the car wheel will travel and make contact between the rail and the strip. It will of course be understood that the strip may if desired be shaped to provide a bottom wall as 18 upon which the peripheral portion of the flange of the wheel could ride.

Also, if desired, the strip may be suitably resilient so that the passage of the flange of the car wheel between said strip and the rail will cause the portion of said strip engaged by said flange to be sprung away from the rail, thereby insuring a better rubbing contact between the wheel and the track and strip.

The contact strip 11 is supported solely by connection with the rail G. The rail is of the usual well known type as in common use heretofore, that is it includes a main or web portion 19 having a tubular bead 20 along its upper edge and having opposite lateral flanges 21—21 extending along its lower edge, and the contact strip is provided with extensions as 22—22 which are bent about the flanges 21—21 so as to bind the strip firmly to the rail, there being suitable pieces of insulating material as 23 interposed between the extensions 22 and the rail so that the contact strip is effectively insulated from said rail.

A rectangular piece of insulating material as 24 is arranged beneath the rails G and H and carries two binding posts as 25 and 26, the former being connected by a conductor 27 with one of the extensions 22 of the contact strip and the latter being connected as by a conductor 28 with the "third" rail H. The connection between the conductors

27 and 28 may be connected with the contact strip and rail H respectively by any appropriate means but they are preferably soldered thereto as indicated in Fig. 3.

If desired however the extension 22 to which the conductor 27 is connected may be provided with a finger 29 thereon as indicated in Fig. 4 adapted to constitute a counterpart of the flange 21 of the rail G suitable to be engaged by a manually operable latch member 30 carried by the member 24. In this instance the latch member 30 would be connected with the conductor 27. Also the conductor 28 would be shaped to provide a hook as 31 for engaging about a flange of the "third" rail so that the member 24, with parts carried thereby, would in that case be detachable. A regular standard detachable conductor attaching clip of a type well known in the art of toy electric train systems may thus be used to provide the member 24 and the parts carried thereby, as will be readily understood.

As indicated in Fig. 4 also, the contact strip 11, instead of being permanently clamped upon the bottom flanges of the rail as above described, may be releasably snapped onto said bottom flanges. That is to say that the contact strip may be made up as an article of manufacture separate and distinct from the electric toy section and may be attached to said section or removed therefrom at will by simply being snapped onto or removed from the flange rail. In this instance the extensions 22 would each be provided with a wear piece as 32 for engaging the rail flanges, the insulating pieces 23 being interposed and held permanently in position between the wear piece and the extensions 22. The parts will be shaped so as to provide relatively hook like portions as 33—33 for engaging about the rail flanges, the parts being sufficiently resilient to enable the portions 33—33 to yield when being snapped onto or off of the rail flanges, and in this connection it may be noted that the construction of the rail itself is such that a space as 34 occurs at the centre of the rail, the rail being of a generally U-shaped cross section, so that the flanges 21—21 thereof are capable of yielding toward each other, thus providing additional means for enabling the contact strip to be snapped onto or off of said flanges.

In the structure illustrated in Fig. 5 it is shown that if desired the contact strip may provide a tubular bead portion as 35 which will re-inforce and stiffen the contact strip and at its ends will constitute sockets into which connector pins as 36, similar to pins 6, may be inserted. In this instance the contact strip would be extended for the full length of the rail G and whenever it is desired to connect together two contact strips of adjacent aligned sections, a connector pin 36 may extend into the sockets of the two contact strips for electrically connecting said strips in identically the same manner as the rails themselves are connected by the connector pin 6.

In the modification Fig. 6 the contact strip 11 is shown mounted upon the power rail H, instead of upon the wheel rail G as in Fig. 4, as by means of a spring snap fastener 37. The contact strip and the snap fastener are insulated from each other by suitable insulating material as 38, and the snap fastener is adapted to engage about the rail to hold the contact strip in proper association with the rail to enable said contact strip to perform the functions of this invention as hereinbefore clearly set forth with respect to the other figures. A suitable member as 39, having a shoulder 40 thereon, may be electrically and mechanically connected with the contact strip by which said contact strip may be conveniently electrically connected with the auxiliary device 10.

In the structures Figs. 4 and 6 the parts 29 and 40 respectively constitute means to be engaged by the conductor attaching clip for convenient attachment to the signal device 10, as illustrated.

After the contact strip has been duly snapped onto the rail G or H then the conductor attaching clip described may be adjusted into position engaging the finger 29 and rail H, or shoulder 40 and rail G, as the case may be, and the auxiliary device 10 may thereafter be connected with the wire terminals 25 and 26, and the device is ready for use.

In the structure Fig. 6 the circuit including the contact strip and the device 10 is broken between the contact strip and the rail H and is closed by the motor contact shoe of a passing train bridging these two elements. The circuit in this instance is traced as follows: power rail H, through contact shoe to strip 11, binding post 26 to device 10, back to post 25, latch 30 to rail G.

As many changes could be made in this construction without departing from the scope of the invention as defined in the following claims, it is intended that all matter contained in the above description, or shown in the accompanying drawings, shall be interpreted as illustrative only and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. An attachment for toy electric track sections, said attachment comprising as one element thereof a contact intended to be engaged by a part of a passing car for controlling an electric circuit, said element including means for readily releasably gripping a single one of the rails of the toy track section to thereby support said element in position

solely upon said single rail, and said attachment including also a member having a pair of wire terminals thereon insulated from each other and having attaching means by which to mount said member upon the section and to at the same time complete electrical connection from said terminals respectively to said contact and to a track rail of the section.

2. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the uual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling, a member mounted upon one of said rails adapted to serve as a contact to be engaged by a part of a passing car for controlling an electric circuit, a connector having two wire terminals thereon, said contact having means to be releasably engaged by said connector for electrically connecting the contact with one wire terminal, and means by which the other wire terminal may be releasably connected with another rail of the section.

3. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling, a member mounted upon one of said rails adapted to serve as a contact to be engaged by a part of a passing car for controlling an electric circuit, said mentioned rail having a bottom flange, and said contact member being insulated from said rail and having a portion arranged to stand adjacent said flange as a substitute therefor of a character to be releasably engaged by a part of a separately formed connector device adapted for connecting said contact member and another rail in an electric circuit.

4. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling, a member mounted upon one of said rails adapted to serve as a contact to be engaged by a part of a passing car for controlling an electric circuit, said contact member being connected with said rail by being wrapped around the bottom flange portion of said rail in insulated relation thereto, and a connector member having a pair of wire terminals thereon electrically connected one with the portion of the contact member which is wrapped around the rail flange and the other with another one of said rails.

5. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling and at least two of the rails having car engaging surfaces electrically continuous throughout the length of the section and insulated from each other so as to be adapted for the continuous propulsion of a train over said section, a member comprised in the section in addition to said rails and said cross-tie means adapted to serve as a contact to be engaged by a part of a passing car for controlling an electric circuit, and a member mounted upon the section having a pair of wire terminals thereon insulated from each other and electrically connected respectively with said contact and with one of the rails of the section by the means which serves to attach said member in supported relation upon the section.

6. An attachment for toy electric track sections, said attachment comprising a contact intended to be engaged by a part of a passing car for controlling an electric circuit, said attachment including means for readily releasably gripping a single one of the rails of the toy track section to thereby support the attachment in position solely upon said single rail, and said contact having a finger projecting therefrom for the releasable attachment of a connector connected with another rail of the section.

7. An attachment for toy electric trackage, said attachment comprising a contact intended to be engaged by a part of a passing car for controlling an electric circuit, said attachment including gripping parts adapted for readily releasably gripping a single one of the rails of the toy trackage to thereby support the attachment in position solely upon said single rail, said attachment comprising a piece of sheet metal having one portion for constituting said contact and having another portion projecting laterally from the contact portion and bent to extend about the flange part of the rail and constitute said gripping parts.

8. In a toy electric track section comprising spaced wheel bearing rails and an intermediate insulated third rail with cross tie means by which all of the rails are mechanically connected together for unitary handling, a contact formed separate from the

section and detachably mounted thereon in position to be engaged by a part of a passing car for controlling an electric circuit, said contact being detachably held in operative position upon the section by having a resiliently yieldable gripping engagement with a single one only of the rails of the section and having a portion constructed and arranged for the attachment thereto of a detachable connector by which said contact and another part of the section may be electrically connected with a further device.

9. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling, a member mounted upon one of said rails adapted to serve as a contact to be engaged by a part of a passing car for controlling an electric circuit, said contact member being connected with said rail by being fixed to the bottom flange portion of the rail in insulated relation thereto, and a connector member having a pair of wire terminals thereon electrically connected one with said contact member and the other with one of said rails.

10. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling, a member mounted upon one of said rails adapted to serve as a contact to be engaged by a part of a passing car for controlling an electric circuit, said contact member being connected with said rail by being made up as a component part of the bottom flange portion of the rail in insulated relation, and a connector member having a pair of wire terminals thereon electrically connected with said contact member and the other with one of said rails.

11. An attachment for toy electric trackage, said attachment comprising a contact part and a connector part, the contact part including a contact strip and attaching means therefor by which to detachably mount said contact strip in position to be engaged by a passing car part for controlling an electric circuit, and the connector part including a pair of wire terminals and a carrying plate therefor and also attaching means by which to detachably mount the connector part in position with said wire terminals electrically connected respectively with the mounted contact strip and with one of the track rails.

12. An attachment for toy electric trackage, said attachment comprising a contact part and a connector part, the contact part including a contact strip formed with a portion to which to attach the connector part and also with attaching means by which to detachably mount the contact strip in position to be engaged by a passing car part for controlling an electric circuit, and the connector part including a pair of wire terminals and a carrying plate therefor and attaching means detachably engageable with one of the track rails and with the mentioned portion of the contact strip effective to electrically connect said wire terminals respectively with said rail and strip.

13. In toy electric trackage including spaced wheel bearing rails, a contact member positioned to be engaged by a passing car part, said contact member comprising a strip of metal extending lengthwise along one of the rails and being supported by having a plurality of lateral extensions continuing therefrom into insulated supported connection with said rail at spaced points in the length of said strip and rail.

14. A detachable connector for toy electric railroads, comprising a contact strip, means to detachably support said contact strip solely upon one rail of the toy track in insulated relation thereto and in position to be engaged by a current carrying part of a car passing along the track, and a detachable clip by which an electrically operable device may be electrically connected with said contact strip and with a rail of the toy track other than that to which the contact strip is connected.

15. A detachable connector for toy electric railroads, comprising a contact strip having springy parts by which it may be detachably mounted upon one rail of the toy track in position to be engaged by a current carrying part of a car passing along the track, means by which the contact strip may be insulated from its supporting rail, and a detachable clip for extending between said contact strip and another rail of the toy track having parts by which an electrically operable device may be electrically connected with said contact strip and with a rail of the toy track other than that to which the contact strip is connected.

16. A detachable connector for toy electric railroads, comprising a contact strip, means to detachably support said contact strip solely upon one rail of the toy track in insulated relation thereto and in position to be engaged by a current carrying part of a car passing along the track, and means by which an electrically operable device may be electrically connected with said contact strip and with another rail of the toy track, said last means being made up separate from the contact strip and its supporting means and including an

insulating plate having a pair of wire terminals thereon and having conductors extending from said wire terminals respectively one to engage the contact strip and the other to engage the mentioned other rail.

17. A detachable connector for toy electric railroads comprising a contact strip having opposing spring jaw parts by which it may be detachably snapped onto one rail of the toy track in position to be engaged by a current carrying part of a car passing along the track, means by which the contact strip may be insulated from the rail upon which it is snapped, and means by which an electrically operable device may be electrically connected with said contact strip.

18. A toy electric track section including a power rail and two wheel bearing rails spaced from each other in parallel relation and a plurality of cross-ties also spaced from each other and connected with the rails to hold all of said elements in unitary assembly, the power rail being insulated and of opposite polarity from all the other mentioned elements, a contact strip extending parallel with said rails but formed separately and insulated therefrom and from the cross-ties and being supported in position to be engaged by a current carrying part of a car passing along the track, and means by which an electrically operable device may be electrically connected with said contact strip and with another rail of the toy track, said last means being made up separate from the contact strip and its supporting means and including an insulating plate having a pair of wire terminals thereon and having conductors extending from said wire terminals respectively one to engage the contact strip and the other to engage an element of the track section having a polarity opposite to that of the mentioned car part.

19. As an article of manufacture, an electric toy track section intended to be attached to or removed from track forming relation with other electric toy track sections in the usual manner, said section being made up of spaced wheel bearing rails and an intermediate insulated third rail with cross-tie means by which all of the rails are mechanically connected together for unitary handling, one of the wheel bearing rails having the usual continuous longitudinally tubular upper portion providing sockets at its opposite ends adapted to receive means by which said rail may be readily connected in track forming relation with aligned ends of corresponding rails of other toy track sections, and a member mounted upon the mentioned wheel bearing rail adapted to serve as a contact to be engaged by the flange of a passing car wheel for controlling a shunt circuit, in parallel with the train circuit, said member being mounted upon said rail by having portions gripping around parts of the rail in insulated relation thereto.

20. In a toy electric track section having at least one of its rails formed with two portions resiliently movable toward and away from each other, the combination therewith of a separately formed contact member disposed adjacent to said rail in position to be engageable by a car part passing along said rail for thereby controlling an electric circuit, and said contact member having parts engaging the two mentioned portions of the rail and utilizing the resiliency thereof to hold the contact member detachably supported in said position upon said rail.

In testimony whereof I affix my signature.

L. GESSFORD HANDY.