Nov. 25, 1930. H. C. IVES 1,782,991

ELECTRIC CONNECTER FOR TOY TRAIN TRACKS

Filed July 5, 1927

Fig. 1

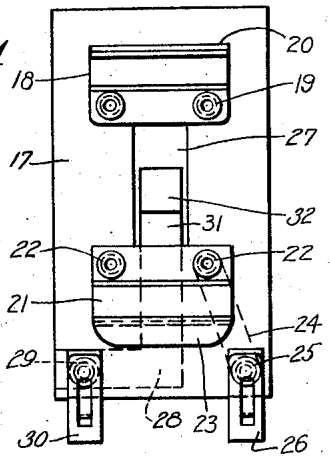



Fig. 2

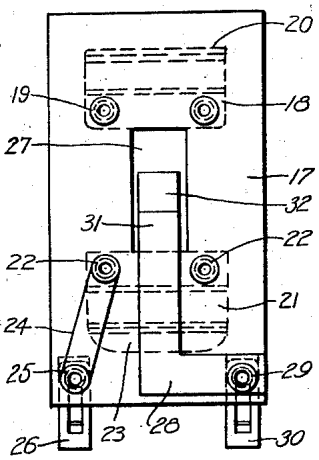



Fig. 3

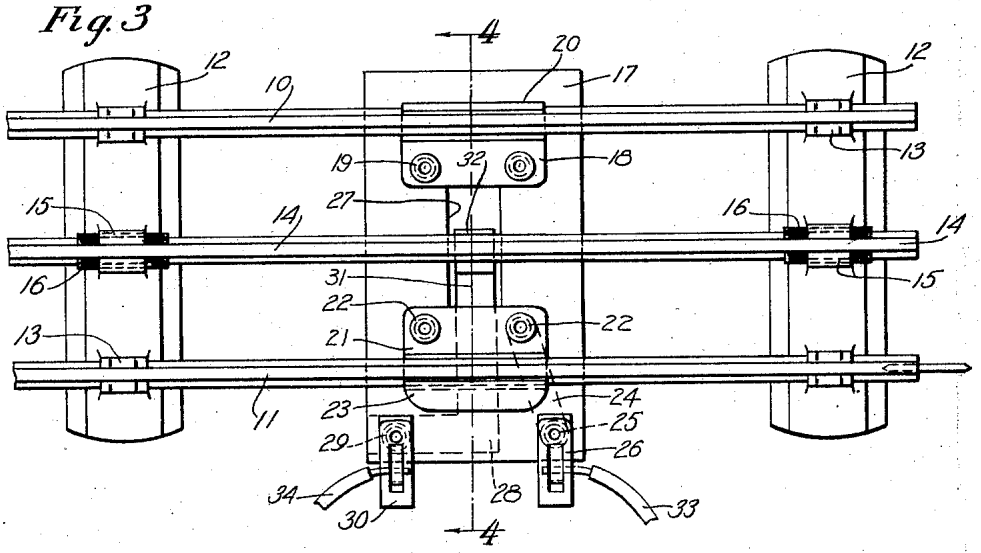



Fig. 4

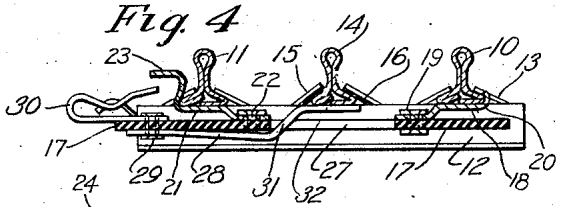
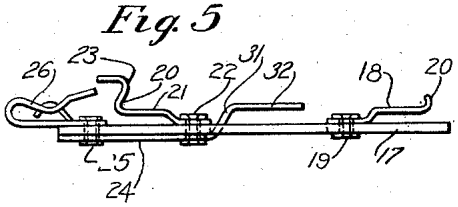



Fig. 5



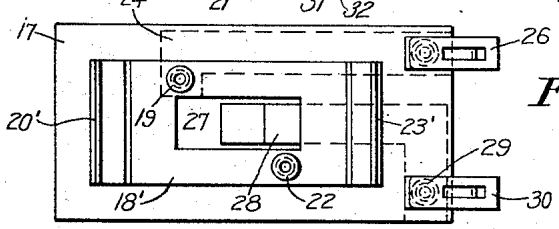




Fig. 6

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1,782,991

# UNITED STATES PATENT OFFICE

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## ELECTRIC CONNECTER FOR TOY TRAIN TRACKS

Application filed July 5, 1927. Serial No. 203,366.

The present invention relates to improvements in electrical rail terminals or connecters for toy train tracks, and particularly such devices for electrically connecting the power rail, from which the toy locomotive takes its current, and the other rails upon which the locomotive wheels are grounded.

An object of the invention is to provide a device of this character of very simple and inexpensive construction, which may be clipped upon the rails in such manner as to be firmly supported thereon, at the same time providing a positive and reliable electrical connection. A further object is to provide a terminal which is free from clamps, screws, or other such movably mounted attachment means which are subject to breakage or wear under the conditions encountered in the use of such devices. It is particularly proposed, in the present embodiment, to provide a terminal or connecter adapted to be clipped upon the two main rails of a toy track section, and includes a spring contact member adapted in the attached relation of the device to engage the central or power rail under spring pressure.

With the above and other objects in view, an embodiment of the invention is shown in the accompanying drawings, and this embodiment will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

In the drawings:—

Fig. 1 is a top plan view of my improved terminal or connecter.

Fig. 2 is a bottom plan view of same.

Fig. 3 is a plan view of a piece of toy track, with the terminal in place thereon.

Fig. 4 is a transverse sectional view taken along line 4, 4 of Fig. 3.

Fig. 5 is a side elevation of the terminal, and

Fig. 6 shows a plan view of a modified form of the invention.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, the device is adapted, as shown in Fig. 3, to be secured to the underside of a section of toy track between the spaced ties thereof. The track to which the invention is adapted to be attached comprises two main rails 10 and 11 secured in spaced relation upon the spaced cross ties 12 by means of lugs 13 formed upon the ties, and clamping the base portions or flanges of the rails thereto. The central or power rail 14 is secured to the cross ties by lugs 15, which are insulated from the rail by means of insulation 16. The track as shown is of a commercial type and in itself forms no part of the invention.

The terminal, according to the present embodiment of the invention, comprises a rectangular base plate 17, formed of fibre or other suitable insulating material, adapted to form a rigid support, and upon the top side thereof there is provided a metal plate 18, that is secured to the plate 17 by rivets provided at its ends with upwardly offset spring clip portions 20 adapted to grip the outer surface of the outer rail 10, and space the intermediate portion of the plate from the center rail 14. A somewhat similar metal plate 21 is secured to the opposite end portion of the fibre plate 17 by rivets 22 and is also provided with upwardly offset spring clip portions 23 adapted to grip the outer surface of the other outer rail 11 in a manner to hold the terminal to the rails. In order to facilitate the attachment of these clips, the portion 23 has its end outwardly flared, so that the portion 20 may be hooked on one rail 10 and thereupon the clip 23 pressed into clipped relation with the other rail 11. One of the rivets 22 also serves to secure to the under side of the base 17 one end of a metal link 24, the other end of which is secured and connected by a rivet 25 to a terminal clip 26 mounted upon the upper side of the base 17 at its forward edge.

The insulative base 17 is provided centrally and beneath the central power rail 14 with a rectangular opening 27, through which the electric conductor for said rail is engaged therewith. This conductor comprises an L shaped flat bar 28 attached to the under side of the base 17 and secured thereto by means of a rivet 29 which also connects it with a

terminal clip 30 provided upon the upper side of the base 17 at its forward edge, and in spaced relation to the terminal clip 26. The bar 28 is bent upwardly at its inner end, as at 31, through the opening 27, and is provided with a horizontally extending end portion 32, adapted in the engaged position of the connecter to contact with the rail 14 under spring pressure. As shown in Fig. 5, the end portion 32 is disposed above the plane of the clip portions 19 and 23 in the detached relation of the connecter, and is adapted as the connecter is clipped into place, to abut the rail 14 and spring the bar 28 away from the base plate 17, as shown in Fig. 4, so that there is at all times a positive and reliable electrical connection.

In Fig. 6, I have shown a form of terminal similar to that shown in the other figures, except that I employ a one piece metal plate 18′ attached to the top side of the fibre base with rivets 19 and 22. The said metal plate 18′ being provided with a centrally positioned rectangular opening which aligns with the opening 27 in the base and like said opening 27, serves to allow the upwardly disposed end 32 to project through the said base and plate for engagement with the third rail as in the manner of the other form. This plate 18′ is further provided with spring clip portions 20′ and 23′ for engagement with the outer rail. It also includes a link 24 for electrically connecting the said plate with the terminal clip 26. A terminal clip 30 is likewise connected through a rivet 29 with the spring conductor bar 28. This form of clip may be used on electric toy train tracks where signals are not to be used, whereas the other form of terminal shown in 1 to 5 inclusive, is somewhat more universal in its application and may be generally employed irrespective of the use of signals.

The spring terminal clips 26 and 30 are of conventional type and are adapted to have the lead wires 33 and 34 secured therein. Obviously, binding posts or other suitable terminal means may be employed if desired.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as defined in the appened claims.

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

1. An electrical connecter for toy railway tracks comprising a base, two attachment means carried thereby and adapted to engage the outside rails, terminal means carried by said base and electrically connected to one of said attachment means, a spring contact member carried by said base adapted to engage a center rail under spring pressure in the attached relation of the base, and terminal means electrically connected to said spring contact means.

2. An electrical connecter for toy railway tracks comprising a base, an attachment plate secured thereon having spring clip end portions adapted to be clipped upon said rails, terminal means carried by said base and adapted to electrically connect one of said rails through one of said attachment means, a spring contact member carried by said base adapted to engage one rail under spring pressure in the attached relation of the base, and terminal means electrically connected to said spring contact means.

3. An electrical connecter for toy railway tracks having parallel spaced main rails and an intermediate power rail, comprising a base, attachment means carried thereby adapted to attach said base to said main rails, terminal means carried by said base and electrically connected to said attachment means, a spring contact member carried by said base adapted to engage said intermediate power rail under spring pressure in the attached relation of the base, and terminal means electrically connected to said spring contact means.

4. An electrical connecter for toy railway tracks having parallel spaced main rails and an intermediate power rail, comprising a base, an attachment plate carried thereby having spring clip ends adapted to be clipped upon said main rails, terminal means carried by said base and electrically connected to said plate, a spring contact member carried by said base adapted to engage said intermediate power rail under spring pressure in the attached relation of the base, and terminal means electrically connected to said spring contact means.

5. An electrical connecter for toy railway tracks having parallel spaced main rails and an intermediate power rail, comprising an insulating base having an opening substantially centrally thereof, attachment means adapted to secure said base to said rails, terminal means carried by said base and adapted to electrically connect one of said main rails through said attachment means, a spring contact member secured to the under side of said base and extending through said opening thereof, and adapted to engage said intermediate power rail under spring pressure in the attached relation of the base, and terminal means electrically connected to said spring contact means.

6. An electrical connecter for toy railway tracks having parallel spaced main rails and an intermediate power rail, comprising an insulting base having an opening substantially centrally thereof, an attachment plate secured at the upper side of said base having an opening registering with said opening of the base, means for securing said plate to the main rails, terminal means carried by said

base adapted to electrically connect one of said main rails through said attachment plate, a spring contact member secured at the under side of said base, extending through said opening and adapted to engage said intermediate rail in the attached relation of the base, and terminal means electrically connected to said spring contact means.

7. An electrical connecter for toy railway tracks having parallel spaced main rails and an intermediate power rail, comprising an insulating base having an opening substantially centrally thereof, an attachment plate secured at the upper side of said base having an opening registering with said opening of the base and provided at its ends with spring clip portions adapted to be clipped about said main rails, terminal means electrically connected to said plate, a spring contact member secured at the under side of said plate, and extending through said opening and adapted to engage said intermediate power rail under spring pressure in the attached relation of the base, and terminal means electrically connected to said spring contact means.

8. An electrical connecter for toy railway tracks comprising a base, attachment means carried thereby and adapted to engage the outside rails, terminal means carried by said base and electrically connected to said attachment means, a spring contact member carried by said base adapted to engage a center rail under spring pressure in the attached relation of the base, said member extending beneath said base through an opening therein, and terminal means electrically connected to said spring contact member.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 1st day of July, A. D. 1927.

HARRY C. IVES.