Dec. 11, 1934. L. W. ROSENTHAL 1,983,776

ELECTRICAL CONNECTER FOR TOY ELECTRIC RAILWAYS

Filed April 9, 1932

Fig. 1.

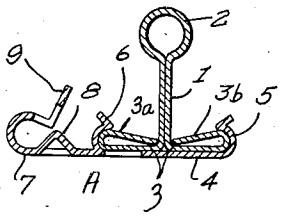


Fig. 3.

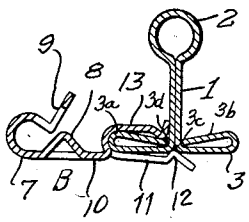


Fig. 5.

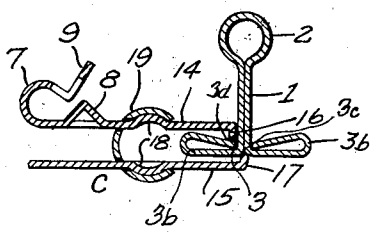


Fig. 2.

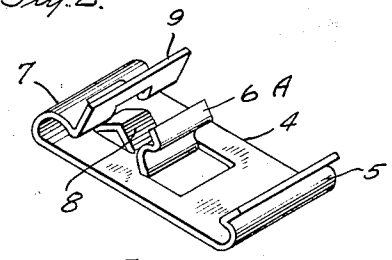
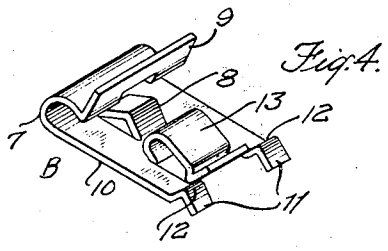


Fig. 4.



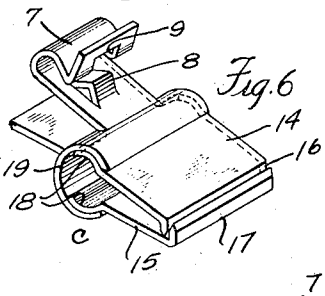


Fig. 6.

Fig. 7.

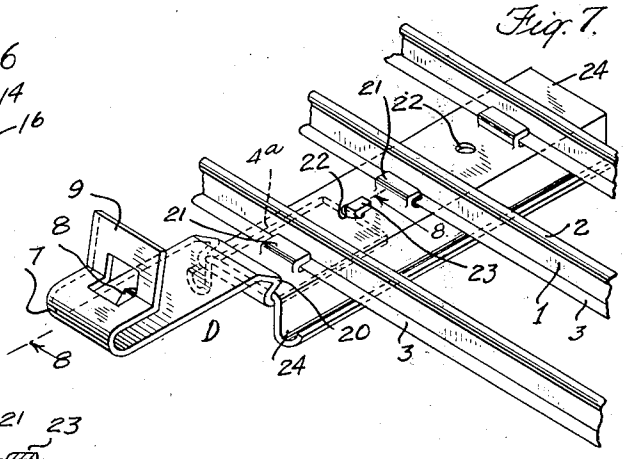


Fig. 8.

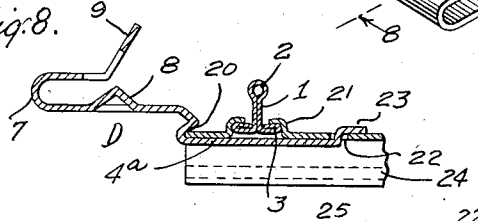


Fig. 9.

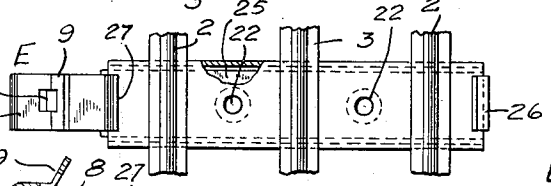
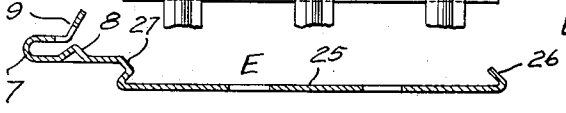
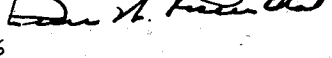


Fig. 10.



INVENTOR



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UNITED STATES PATENT OFFICE

1,983,776

ELECTRICAL CONNECTER FOR TOY ELECTRIC RAILWAYS

Leon W. Rosenthal, New York, N. Y.

Application April 9, 1932, Serial No. 604,275

1 Claim. (Cl. 173—324)

This invention relates to so-called electrical connecters for toy electric railways, and is a continuation in part of my copending application Serial No. 514,762, filed February 10, 1931.

The object of this invention is to provide improved means for connecting a wire conductor or the like to a track element of a toy electric railway. This means, constituting what is sometimes called in the art an electrical connecter, preferably comprises a one-piece sheet metal element preformed to be snapped-on into attachment with a rail or tie, or the like, and to have a portion for receiving and holding a wire conductor or the like.

Preferably, said element or electrical connecter is preformed with a pair of opposing spring jaws constituting a sort of clamp or clip for engaging said rail or tie, and a so-called Fahnestock clip portion for retaining a wire conductor.

And while it is preferred to employ the one-piece construction, yet I desire to disclose an element of multiple piece construction of good efficiency.

In the accompanying drawing:

Fig. 1 is a vertical section through a rail and one form of electrical connecter of my invention, and

Fig. 2 is a perspective view of said electrical connecter;

Fig. 3 is a vertical section through a rail and another form of electrical connecter of my invention, and

Fig. 4 is a perspective view of said electrical connecter;

Fig. 5 is a vertical section through a rail and still another form of electrical connecter of my invention, and

Fig. 6 is a perspective view of said electrical connecter;

Fig. 7 is a perspective view of part of a toy electric railway track section, showing a modified form of electrical connecter attached to the tie of said section, and

Fig. 8 is a section on the line 8—8 of Fig. 7;

Fig. 9 is a plan view of a tie and another modified form of electrical connecter attached thereto, and

Fig. 10 is a sectional view of said electrical connecter.

In Figs. 1, 3 and 5, the various forms of electrical connecters are shown as attached to a toy rail comprising a web 1, head 2 and a flange 3. For convenience, the said flange will be considered as consisting of two flange portions 3*a* and 3*b*, one on each side of the web.

Referring to Figs. 1 and 2, the electrical connecter A therein shown comprises a one-piece sheet metal stamping comprising a flat plate portion or body 4 provided with preformed upturned spring jaws 5 and 6 attached to the flange 3 of the rail. The other end of the plate is also preformed to provide a so-called Fahnestock clip 7 for receiving and holding a wire conductor. This latter clip portion is characterized by having a punched-out strap 8 and an overhanging apertured spring portion 9 adapted to be depressed so that the strap will project through the aperture. The end of a wire conductor is then passed through the strap and upon release of the spring portion 9 the wire will be securely held.

In Figs. 3 and 4, the electrical connecter B is also of one-piece construction and is provided with coacting spring jaws 11 and 13 preformed from the plate 10. Jaws 11 are provided with bent up rib portions 12 which are adapted to coincide with the groove 3*c* usually present between the flange portions 3*a* and 3*b* of the rail, while the jaw 13 has a rib portion 13*a* which is arranged to coincide with the groove or depression 3*d* which is usually present between the flange and the web. Thus, in this instance, the connecter is arranged to be clamped or attached to only one of the flange portions by means of the coacting jaws 11—12. The other end of the connecter B is provided with the same wire retaining means as connecter A.

The spring jaws 5 and 6 of Figs. 1 and 2, and the spring jaws 11 and 13 of Figs. 3 and 4, have their upper edges bent backward and outward, each away from the other as shown, so as to afford bevelled portions to facilitate snapping or pushing the connecter A into secure and resilient gripping engagement and electrical contact with opposite sides, the faces or edges, of the rail flange 31, and also for facilitating the disengagement of the connecter therefrom.

In Figs. 5 and 6 there is shown an electrical connecter C of three-piece construction. The form of clip therein disclosed is generally old, but has been modified to meet the needs of this invention. The edges of members 14 and 15 have turned in to provide each with a rib 16, 17, to coincide respectively with the grooves 3*c* and 3*d* in the rail. Intermediate their ends the members 14, 15 are arched at 18, 18 to coincide with the tubular spring 19. The members 14, 15 pass through the tubular spring and are acted upon thereby in the usual way. The member 14 is

provided with a Fahnestock clip construction as in the previous two constructions.

In Figs. 7 and 8 there is shown an electrical connecter D designed to be attached to a tie 24 to which is attached the rails by means of clips 21, 21. The connecter here is of a one-piece sheet metal stamping with a plate portion 4*a* at one end of which is a finger 23 adapted to pass through an opening 22 in the tie 24, and the opposite end of which is preformed with an upturned spring jaw 20 for engaging the end of the tie. Said plate has an integral extension provided with the wire retaining means shown in the other figures.

The electrical connecter E of Figs. 9 and 10 varies somewhat in construction from D in that the plate 25 is longer and is upturned at one end to provide a spring jaw 26 to engage one end of the tie while the spring jaw 27 at the opposite end of the plate is arranged to engage the opposite end of the tie. This connecter also has integral therewith a wire retaining clip.

Having described the invention, what is claimed is:

A resilient one piece sheet metal electrical connecter for a toy railway rail comprising a metal plate having one end thereof bent upwardly to form a flanged jaw, a U-shaped cut defining a tongue intermediate the length of said plate, said tongue being bent to form a flanged jaw opposing said first jaw, a second U-shaped cut adjacent said first cut and defining a second tongue, said second tongue being bent upwardly at one end thereof from said plate and being bent downwardly at a point intermediate its length toward said plate, a loop formed at the remaining end of said plate and having a portion overhanging said second tongue, an aperture in said overhanging portion, said aperture being positioned over said second tongue member, whereby said overhanging loop and said second tongue member comprise a clamp for electrical connecters.

LEON W. ROSENTHAL.