F. NOWODWORSKI.

RAILROAD TRACK.

APPLICATION FILED NOV. 14, 1910.

996,121. Patented June 27, 1911.

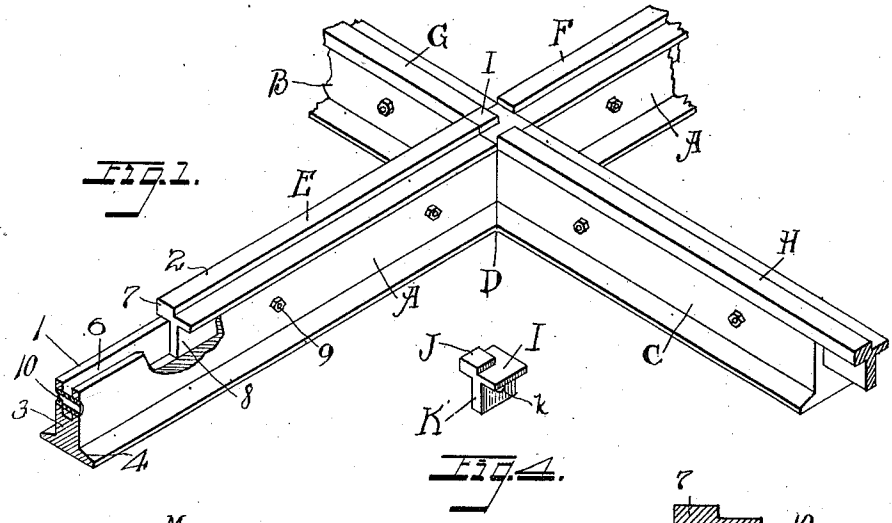

Fig. 1.

Fig. 4.

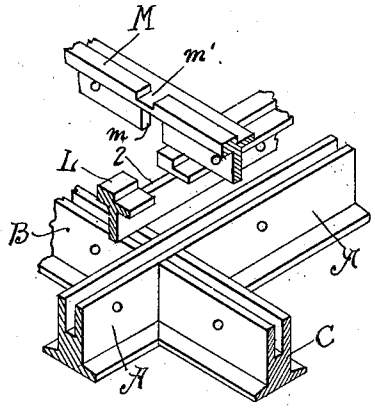

Fig. 2.

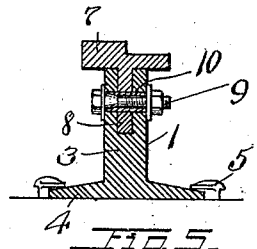

Fig. 5.

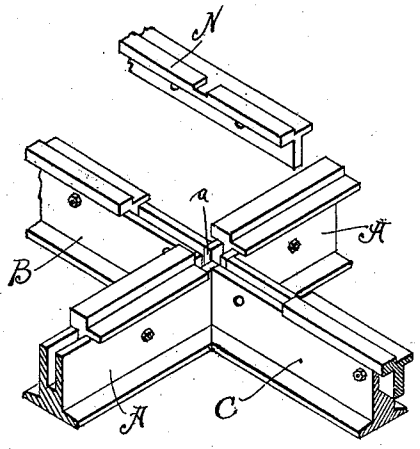

Fig. 3.

Witnesses

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RAILROAD-TRACK.

996,121. Specification of Letters Patent. **Patented June 27, 1911.**

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To all whom it may concern:

Be it known that I, FREADRICH NOWODWORSKI, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Railroad-Tracks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to railway rails, cross-overs, switches and the like and has for its particular objects the provision of a rail in which the adjacent sections may be easily, quickly, and cheaply bonded for use in electric roads or for signaling purposes; the provision of a cross-over in which the parts may be securely interlocked so as to remain relatively firm and immovable under hard usage; the provision of cross overs, frogs and the like with easily renewable points which may be cheaply and expeditiously replaced when worn; and the provision of switches in which all parts are securely interlocked, yet capable of being renewed with a minimum of expense and obstruction to traffic.

Further objects and advantages will appear from the following description and claims.

For a full understanding of my invention reference should be had to the drawings accompanying this application and forming a part thereof, in which—

Figure 1 is a perspective view of a cross over embodying my invention; Fig. 2 is a perspective view of a modification, the parts thereof being shown as separated; Fig. 3 is a further modification, the parts likewise being shown as separated; Fig. 4 is a perspective view of the removable point-block used with the embodiment of my invention shown in Fig. 1; and Fig. 5 is a cross sectional view of one of the rail members employed illustrating the application of my binding expedient thereto.

My rail fittings are all made of two members, a base denoted generally by the reference character 1, and a head or tread section shown at 2. In the preferred embodiment said base section embodies a vertical web 3, having laterally extending base flanges 4, adapted to be engaged by the usual spikes 5 and having a vertical groove 6. The head section is made with the usual T shaped tread 7 having a depending web 8 adapted to be received in said groove and fastened therein by bolts 9. The joints between these sections overlap as shown in Fig. 1, and the bolts are spaced the whole length of the members, thus giving a very uniform binding action; and, to form an intimate electrical union between the rails, I propose to introduce sleeves 10 of copper or the like noncorrodible electrically conducting metal into the holes around the bolts. This copper being softer than the other metals will be expanded by the bolts and will forcibly contact the freshly cut edges of the bolt holes making a good electrical connection. The bolts may be slightly tapered if desired to assist this wedging action, or they may be provided with conical beads or washers. In any case the head and base of adjacent rail sections should overlap as much as two bolt holes thus giving an increased electrical contact. The copper sleeves will form so tight a joint with the iron as practically to prevent the entrance of moisture and the corrosion of the iron. However, should corrosion ensue owing to the bolts working loose, the chafing of the iron by the copper caused by the passage of trains over the loosened joint can be depended upon to maintain a good electrical union between the rails.

In forming a cross over of the type shown in Fig. 1 the base member A is made continuous, as shown, while the base members B and C are abutted against the sides thereof by suitably mitering the flanges 4 as shown at D. The four head members E, F, G and H are bolted in place in the usual manner, leaving a square opening at their point of intersection to be filled by a block I, having a raised tread point and a web K adapted to enter the groove in base A. If desired the web can be perforated as at *k* to receive a bolt, but this I do not consider necessary. The advantage of this construction is that the point block which receives double wear and a great pounding can be easily renewed, or, being small, can economically be made of harder metal.

A modification of my cross-over is illustrated in Fig. 2, in which, with the same arrangement of base members as in Fig. 1, the head members are made to extend across the joint, being suitably cut away to interlock with each other. The head member L has the tread portion cut away at *l*, to receive the tread portion of the cross head M, leaving only its web at that point. The

head section M has its web notched as at *m* to cross the base section A and has a notch *m'* in its tread for the flange of a wheel passing along the other rail. The advantage of this construction is the very rigid and secure interlocking of all parts of the crossing.

A second modification of my cross over is shown in Fig. 3. The base A A runs through unbroken as before and the base members B and C are brought up close to the side of it and mitered thereto as in Fig. 1. The sides of the base member are found with notches *a*, in alinement with the grooves of base members B and C, and a head member N is extended thereacross, securely locking the base members together. The advantage of this arrangement is that it preserves most of the rigidity of the modification shown in Fig. 2 while avoiding much of its complexity.

While I have shown my crossover as applied only to perpendicularly meeting rails it is obvious that the same construction is applicable to other angles, or to frogs which are nothing but single rail cross overs at rather acute angles. The cross overs shown in Figs. 2 and 3 have good electrical connection as to both through-rails, while that in Fig. 1 has good connection as to through rail A A. In order to form good electrical contact between the perpendicular rails the usual bonding means is preferable, although even this will seldom be necessary owing to the usual presence of a switch which, if made as illustrated herein, will sufficiently connect the two rails.

Having thus described my invention, what I claim is:

1. A cross-over for railway rails comprising, in combination, a plurality of separate grooved base members, radiating from a common center, and a plurality of head members having webs fitting in said grooves, said head members being spaced from each other at the point of intersection, and a block in the space between said head sections and having means forming a continuation of the tread portions of both rails.

2. A cross-over for railway rails comprising, in combination, a grooved base member extending unbroken through the point of intersection, alined grooved sections abutting against the sides thereof, head members having depending webs fitting in said grooves and radiating from the point of intersection, said head sections having channels and raised treads and being spaced apart at the point of intersection, and a block fitting in said space and having a portion forming a continuation of the said channels, and a raised portion forming a continuation of the said treads.

3. A cross-over for railway rails comprising, in combination, a grooved base member running unbroken past the point of intersection, alined grooved sections abutting against the sides thereof, head sections having tread portions and depending webs, said webs fitting in said grooves, and said head sections running unbroken through the point of intersection, the web of one head section being cut away where it crosses the web of the other head section, and the tread portion of the second head section being notched to receive the tread of the first head section, the tread portion of the first head section having a notch for the flange of a wheel running on the other rail.

4. A cross over for railway rails comprising, in combination, a grooved base section running unbroken past the point of intersection, alined grooved sections abutting against the sides thereof, the grooves of opposite sections being alined and continuous, a head section having a tread portion and a web portion, and running unbroken across said point of intersection with said web fitting in the grooves of opposite base sections, head sections carried by the other of said base sections, and abutting the opposite sides of said first head section, said first head section having a notch in the tread portion thereof for the flange of a wheel running on the other rail.

5. A cross over for railway rails comprising, in combination, a grooved base section running unbroken through the point of intersection, alined grooved base sections abutted against the sides thereof, the walls of the groove of said first section being notched in alinement with the grooves of said other sections, a head section having a tread portion and a depending web and running unbroken across said first base section with its web fitting in the grooves of said other section and in the notches of said first section, head sections carried by said first base section and abutting against the sides of said first head section, the tread of said first head section having a notch for the flange of a wheel running on the other rail.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

FREADRICH NOWODWORSKI.

Witnesses:
HAROLD E. SMITH,
BRENNAN B. WEST.