No. 838,575. PATENTED DEC. 18, 1906.

J. F. O'CONNOR.

TIE FOR RAILWAY TRACKS.

APPLICATION FILED AUG. 10, 1906.

Fig. 1

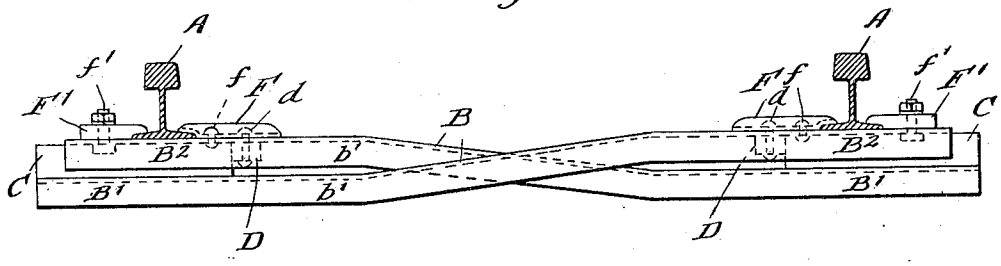


Fig. 2

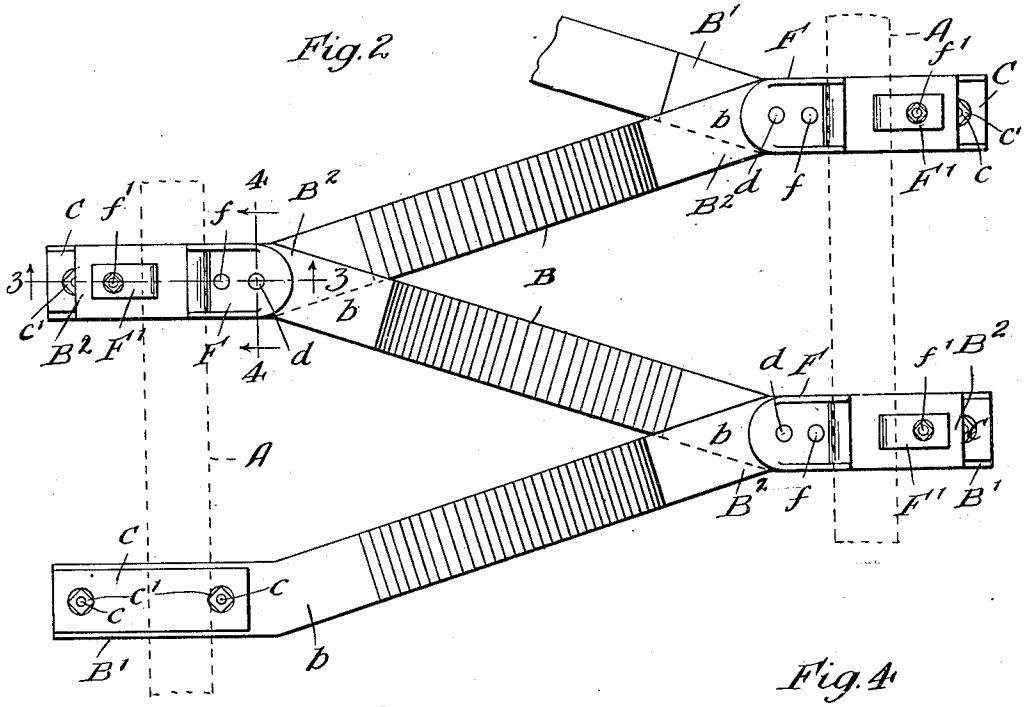


Fig. 3

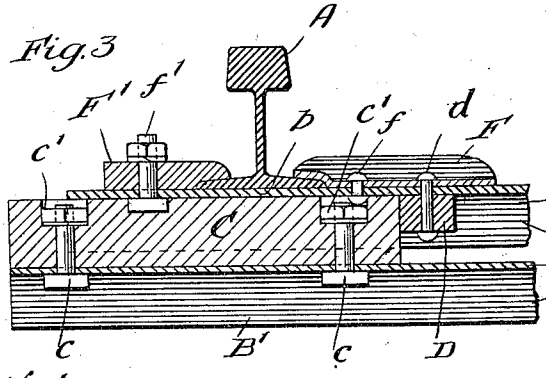
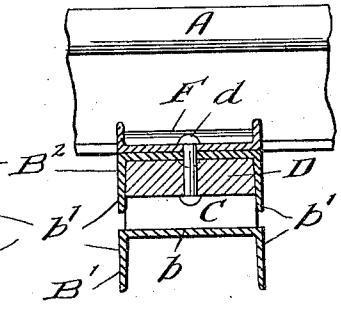


Fig. 4



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UNITED STATES PATENT OFFICE.

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TIE FOR RAILWAY-TRACKS.

No. 838,575. Specification of Letters Patent. Patented Dec. 18, 1906.

Application filed August 10, 1906. Serial No. 330,345.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Ties for Railway-Tracks, of which the following is a specification.

My invention relates to improvements in ties for railway-tracks.

The object of my invention is to provide a composite wood and metal tie for railway-tracks of a simple, strong, efficient, and durable construction, capable of being cheaply manufactured, uniting in itself the cushioning advantages of the ordinary wood tie and the strength and durability of a metal tie, in which all the ties of the track will be rigidly and firmly connected together independent of the rails laid thereon, so that the contiguous or adjacent ties will mutually support and strengthen each other and aid in holding and maintaining each other in position, in which adequate provision is made for shrinkage of the wood members, and by means of which a railway-track may be readily, conveniently, and economically laid, repaired, and replaced with little labor and expense, and whereby also the wood block members may be embraced and protected between the superposed parts of contiguous metal tie members.

My invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists, in connection with the track-rails, of a series of composite wood and metal ties comprising a plurality of diagonally-extending metal tie members, preferably of channel form in cross-section, and each having at each end parallel base portions extending at an angle to the intermediate diagonal portion, the parallel base portions of adjacent diagonal tie members being superposed, one on top of the other, and short wood blocks interposed and locked between the superposed base portions of adjacent metal tie members, whereby each metal tie member is rigidly and firmly connected at one end to the adjacent tie member on one side thereof and at its other end to the adjacent tie member on the other side thereof.

My invention further consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a composite wood and metal railway-track tie embodying my invention, the rails being shown in cross-section. Fig. 2 is a plan view. Fig. 3 is a vertical section on line 3 3 of Fig. 2, and Fig. 4 is a vertical section on line 4 4 of Fig. 2.

In the drawings, A A represent the rails of a railway-track.

B B are diagonally-extending metal tie members, each preferably of channel form or provided with a horizontal web *b* and upright flanges *b' b'*. Each of the diagonally-extending metal tie members B has at the ends thereof straight parallel base portions B' B^2, and the parallel base portions B' B^2 of adjacent tie members are superposed, one over the other, and embrace between them interposed short wood blocks C, which serve to connect and cushion the superposed parts B' B^2. The wood blocks C are secured by bolts *c*, having threaded nuts *c'*, to the lower base B', and the same fits between the flanges *b' b'* of the upper base part B^2, thus locking the superposed bases B' B^2 laterally in respect to each other and longitudinally of the rails. The upper base part B^2 is provided on its under side with a transverse block D, preferably of metal, which is secured thereto by rivets *d* and serves as an end abutment for the wood block C, and thus locks the superposed metal tie members in position longitudinally in respect to each other. Each diagonally-extending metal tie member B thus overlaps at one end the adjacent metal member B on one side thereof and underlaps at its other end the adjacent tie member B on the other side thereof, and is thus locked or connected with the adjacent tie members on both sides, so that all the metal tie members mutually aid, brace, and support each other, and thus produce a roadbed of great strength and stability as the adjacent metal tie members cross and overlap each other.

The flanges *b' b'* of the overlapping and crossing diagonally-extending metal tie members preferably project downward, the flanges thus better serving to anchor the metal tie members in the earth or ballast of

the road-bed. The rails A rest upon the overlapping base member B^2 of each metal tie member, the overlapping base B^2 being alternately on opposite sides of the track. If desired, the superposed base members $B' B^2$ of the adjacent metal tie members may be bolted together; but ordinarily in practice the superposed bases are sufficiently locked and connected together by the interposed wood blocks C, connected to one superposed part, and the transverse stop-block D connected to the other superposed part. The rails A A are firmly secured to the overlapping base member B^2 of each tie B by means of anchor-plates F, rigidly secured thereto by rivets *f* and which embrace the flange of the rail on one side, and by removable clamps F′, secured by bolts *f*′, which embrace the flange of the rail on the other side.

I claim—

1. In a railway-track, the combination with the rails, of a plurality of diagonal metal tie members, each furnished at the ends thereof with parallel base portions extending at an angle to the intermediate diagonal portion, the parallel base portions of adjacent metal tie members being superposed, one over the other, and short wood blocks interposed between the superposed parallel base portions of the metal tie members, substantially as specified.

2. In a railway-track, the combination with the rails, of a plurality of diagonal metal tie members, each furnished at the ends thereof with parallel base portions extending at an angle to the intermediate diagonal portion, the parallel base portions of adjacent metal tie members being superposed, one over the other, and short wood blocks interposed between the superposed parallel base portions of the metal tie members, said wood blocks being secured to the underlapping base portions, and transverse abutment-blocks secured to the overlapping base portions, substantially as specified.

3. In a railway-track, a plurality of diagonally extending crossing and overlapping metal tie members and wood blocks interposed between the crossing and overlapping ends or base portions of adjacent tie members, substantially as specified.

4. In a railway-track, a plurality of diagonally-extending channel metal tie members, having each at each end a base portion, the adjacent tie members overlapping each other at the base portions, substantially as specified.

5. In a railway-track, a plurality of diagonally-extending channel metal tie members, having each at each end a base portion, the adjacent tie members overlapping each other at the base portions, and wood blocks interposed between the overlapping bases, substantially as specified.

6. In a railway-track, a plurality of diagonally-extending channel metal tie members, having each at each end a base portion, the adjacent tie members overlapping each other at the base portions, wood blocks interposed between the overlapping bases, and said metal tie members having transverse abutment-blocks for the wood blocks to abut against, substantially as specified.

7. In a railway-track, a plurality of diagonally-extending channel metal tie members, having each at each end a base portion, the adjacent tie members overlapping each other at the base portions, wood blocks interposed between the overlapping bases, said metal tie members having transverse abutment-blocks for the wood blocks to abut against, the interengaging wood block and transverse block being secured, the one to one metal tie member and the other to the adjacent tie member, substantially as specified.

8. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the bases at the opposite ends of each metal tie member being parallel to each other, substantially as specified.

9. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, and short wood blocks interposed between the overlapping bases of adjacent tie members, substantially as specified.

10. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the bases at the opposite ends of each metal tie member being parallel to each other, and short wood blocks interposed between the overlapping bases of adjacent tie members, substantially as specified.

11. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the overlapping base of each tie member having a transverse abutment-block secured thereto, and the underlapping base of each metal tie member having a wood block secured thereto, substantially as specified.

12. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the bases at the opposite ends of each metal tie member being parallel to each other, the overlapping base of each tie member having a transverse abutment-block secured thereto, and the underlapping base of each metal tie member having a wood block secured thereto, substantially as specified.

13. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, and short wood blocks interposed between the overlapping bases of adjacent tie members, the overlapping base of each tie member hav-

ing a transverse abutment-block secured thereto, and the underlapping base of each metal tie member having the wood block secured thereto, substantially as specified.

14. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the overlapping base of each metal tie member having a rail-anchoring plate fixedly secured thereto adapted to engage the flange of the rail on one side and a removable rail-anchoring clamp to engage the flange of the rail on the other side, substantially as specified.

15. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the bases at the opposite ends of each metal tie member being parallel to each other, the overlapping base of each metal tie member having a rail-anchoring plate fixedly secured thereto adapted to engage the flange of the rail on one side and a removable rail-anchoring clamp to engage the flange of the rail on the other side, substantially as specified.

16. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, and short wood blocks interposed between the overlapping bases of adjacent tie members, the overlapping base of each metal tie member having a rail-anchoring plate fixedly secured thereto adapted to engage the flange of the rail on one side and a removable rail-anchoring clamp to engage the flange of the rail on the other side, substantially as specified.

17. In a railway-track, diagonally extending and crossing metal tie members having overlapping bases at the ends thereof, the bases at the opposite ends of each metal tie member being parallel to each other, and short wood blocks interposed between the overlapping bases of adjacent tie members, the overlapping base of each metal tie member having a rail-anchoring plate fixedly secured thereto adapted to engage the flange of the rail on one side and a removable rail-anchoring clamp to engage the flange of the rail on the other side, substantially as specified.

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