W. P. BEAVAN.

RAILROAD AND TRAMWAY TIE OR SLEEPER AND CHAIR.

APPLICATION FILED MAY 8, 1912.

1,067,457. Patented July 15, 1913.

Fig. 1.

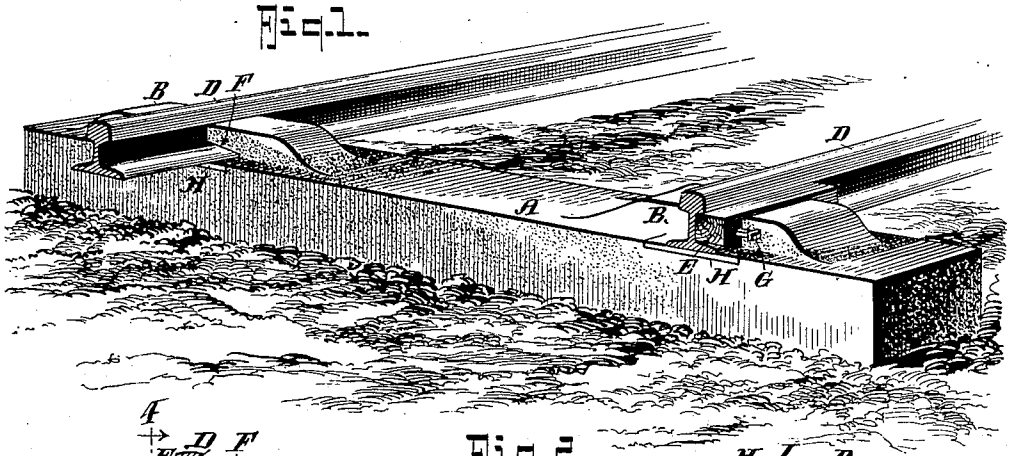


Fig. 2.

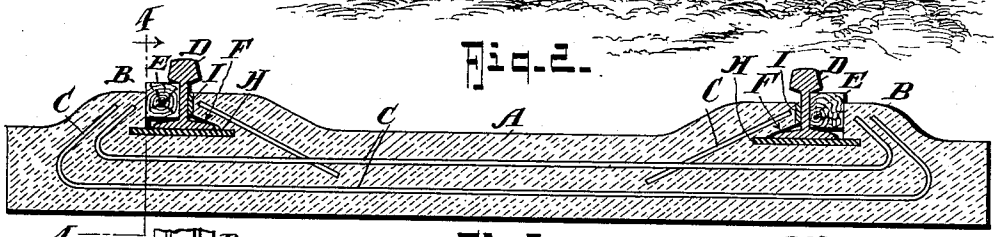


Fig. 3.

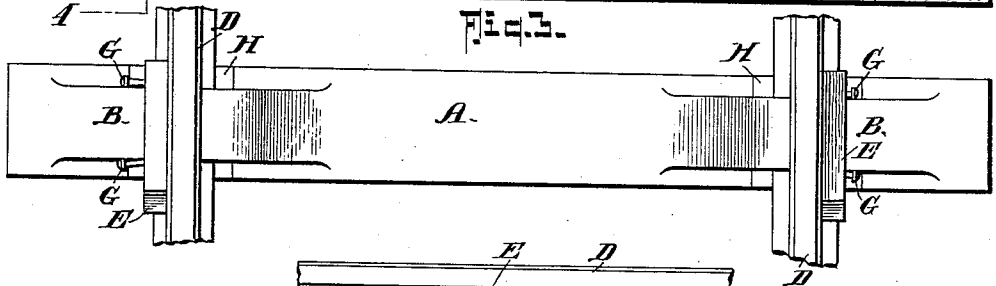


Fig. 4.

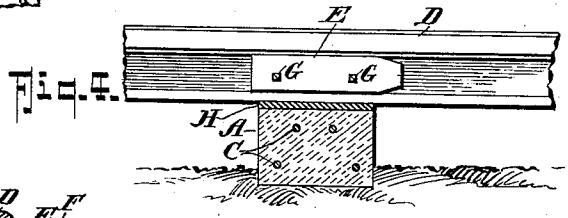


Fig. 5.

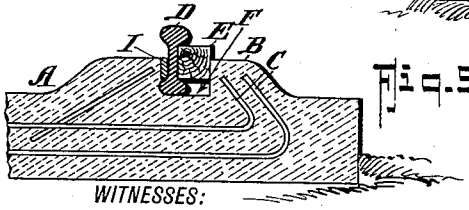
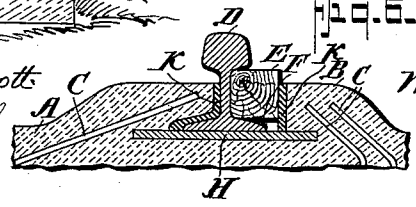


Fig. 6.



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WALTER PAUL BEAVAN, OF VICTORIA, BRITISH COLUMBIA, CANADA.

RAILROAD AND TRAMWAY TIE OR SLEEPER AND CHAIR.

1,067,457. Specification of Letters Patent. Patented July 15, 1913.

Application filed May 8, 1912. Serial No. 695,852.

To all whom it may concern:

Be it known that I, WALTER PAUL BEAVAN, of the city of Victoria, in the Province of British Columbia, Dominion of Canada, contractor, having invented certain new and useful Improvements in Railroad and Tramway Ties or Sleepers and Chairs, do hereby declare that the following is a full, clear, and exact description of same.

My invention relates to improvements in the construction of railroads and tramways, and the objects of these improvements are first to secure a tie or sleeper which will withstand climatic destruction and mechanical wear; second to provide a means of securely fastening the rails in place on such a tie or sleeper. I attain these objects by constructing a tie or sleeper with rail chairs *en bloc* of concrete, or reinforced concrete, as illustrated in the accompanying drawings in which—

Figure 1, is a perspective view of the invention. Fig. 2 is a vertical section of the tie or sleeper and chairs showing position of rails and keys. Fig. 3 is a top view of same. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a vertical section of a portion of a tie or sleeper and a chair adapted for and holding a different type of rail. Fig. 6 is a sectional view showing another form hereinafter specifically referred to.

Similar letters refer to similar parts throughout the several views.

A, the tie or sleeper, and the chairs B, B, are to be constructed *en bloc* of concrete or reinforced concrete and to be of such shape, size and weight as shall be found most suitable to the needs of the railroad or tramway in the construction of which they are used. The chairs B, B, may be constructed the full width of the tie or sleeper A, or narrower, and the groove F may be shaped to receive any type of rail or rails, and shall be reinforced at the bottom as at H, and sides as at I to prevent attrition of the surface of the concrete with any style of reinforcement that may be necessary to effect such protection. A strip, layer or coating K (see Fig. 6) of any material or substance may be used inside the grooves F to absorb the vibration of the rails D and to allow for any expansion of the rails due to climatic or weather conditions. The reinforcing, C, may be of any suitable weight and design.

The keys E, E, may be of wood or of any other material or combination of materials, the size of same to be governed by the type of rail and shape of chairs used. The keys when in place may be secured by means of spikes or nails G driven into them at the sides of the chairs.

I am aware that prior to my invention metal chairs have been used, these chairs having been constructed separately and fastened to the ties or sleepers and the rails secured in the chairs by means of keys, also that ties have been constructed of concrete. I therefore do not claim either of these or this combination, but

What I do claim as my invention and desire to secure by Letters Patent is:—

1. In a concrete tie or sleeper, the combination with the tie and the upwardly projected chairs integrally formed with the tie of longitudinal reinforcing rods running lengthwise in the tie and having their ends bent back and terminating in the outer sides of the chairs, and other rods extending diagonally through the inner sides of the chairs and into the tie body proper, said chairs each having a rail engaging seat or opening through the same.

2. In a concrete tie or sleeper, the combination with the tie and the upwardly projected chairs integrally formed with the tie, longitudinal reinforcing rods running lengthwise in the tie and having their ends bent back and terminating in the outer sides of the chairs, and other rods extending diagonally through the inner sides of the chairs and into the tie body proper, said chairs each having a rail engaging seat or opening through the same, of metallic reinforcing surface strips for lining the contacting faces of the chair rail-seat openings.

3. In a concrete tie or sleeper, the combination with the tie and the upwardly projected chairs integrally formed with the tie, longitudinal reinforcing rods running lengthwise in the tie and having their ends bent back and terminating in the outer sides of the chairs, and other rods extending diagonally through the inner sides of the chairs and into the tie body proper, said chairs each having a rail engaging seat or

opening through the same, of metallic reinforcing surface strips for lining the contacting faces of the chair rail-seat openings, and a rail web engaging lock or key mounted in said rail-seat openings, and spikes driven into said key at each side of the rail chair to retain the keys in place.

Dated at Victoria, British Columbia, this 30th day of March 1912.

WALTER PAUL BEAVAN.

Signed in the presence of—

EDWARD ERNEST WOOTTON,

HENRY NEWTON WOOTTON,

PETER CHARLES OGDEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."