

(No Model.)

2 Sheets—Sheet 1.

G. TARRANT.
RAILWAY TIE AND CHAIR.

No. 492,446.

Patented Feb. 28, 1893.

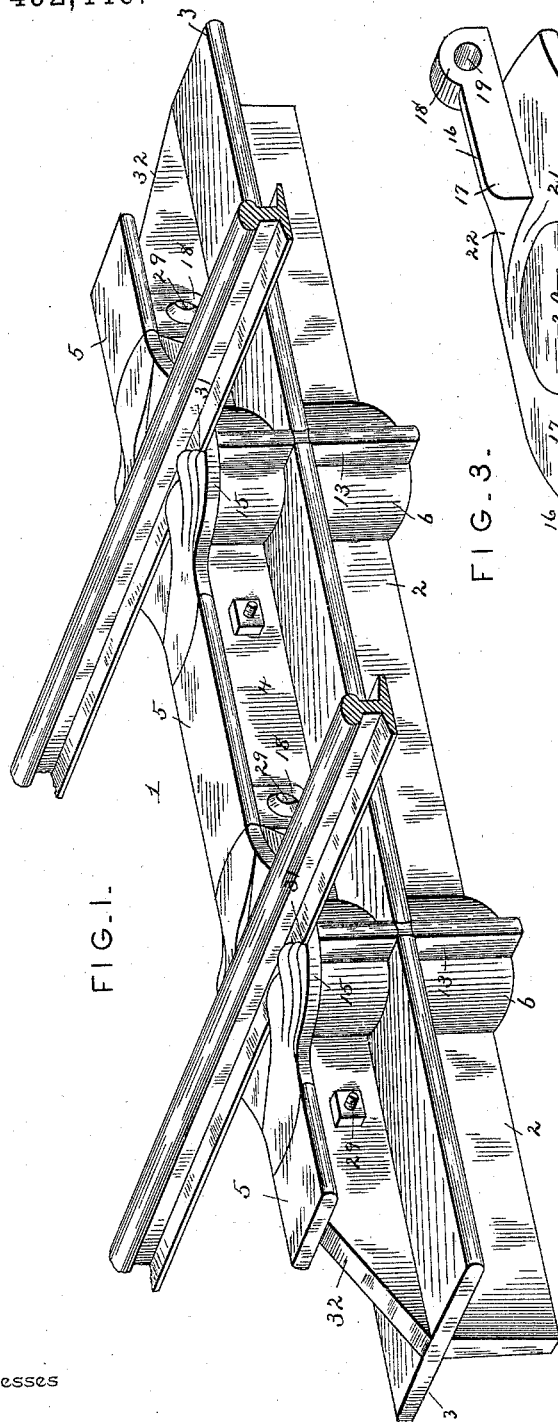


FIG. 1.

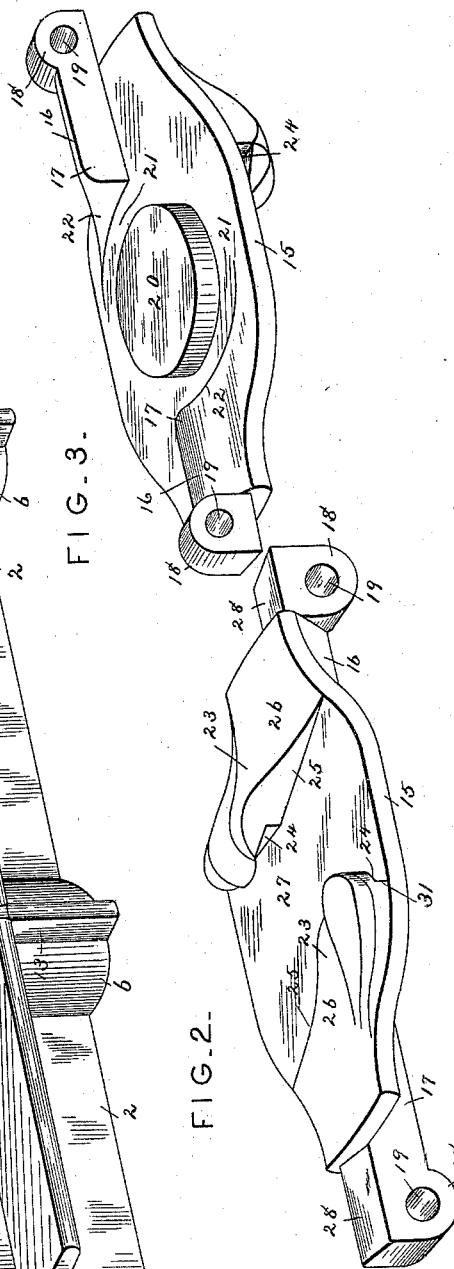


FIG. 2.

FIG. 3.

Witnesses

Harry L. Ames.

By his Attorneys,

Chas. S. Hyer

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George Tarrant.

C. Snow & Co.

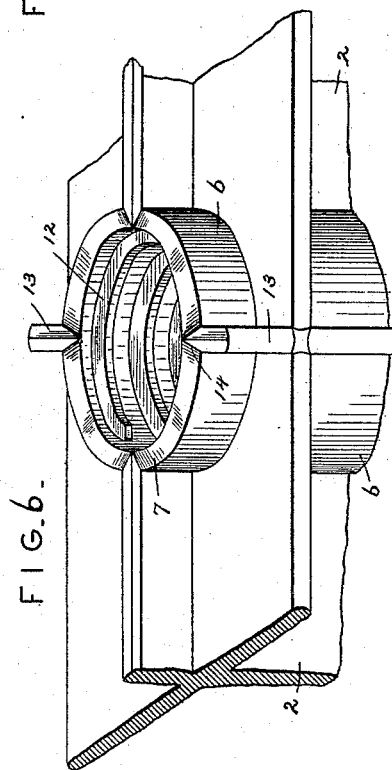
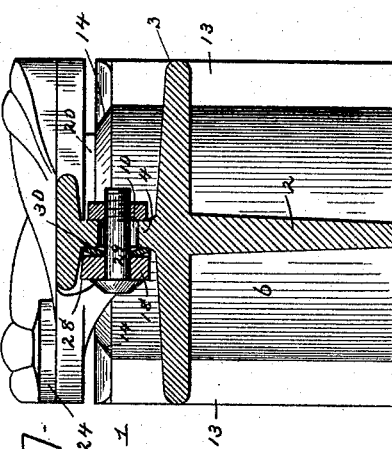
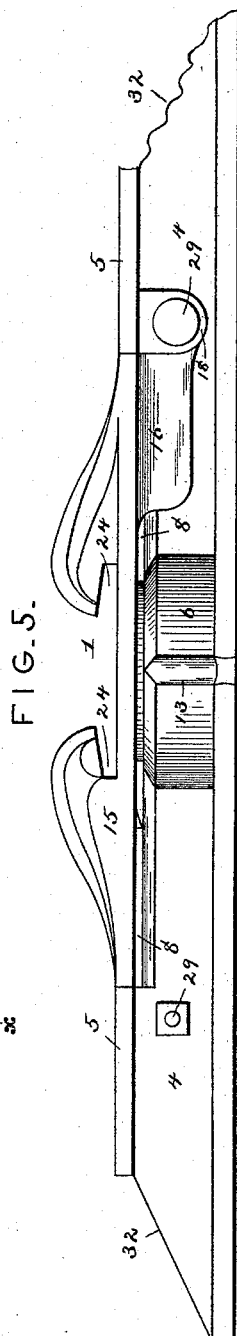
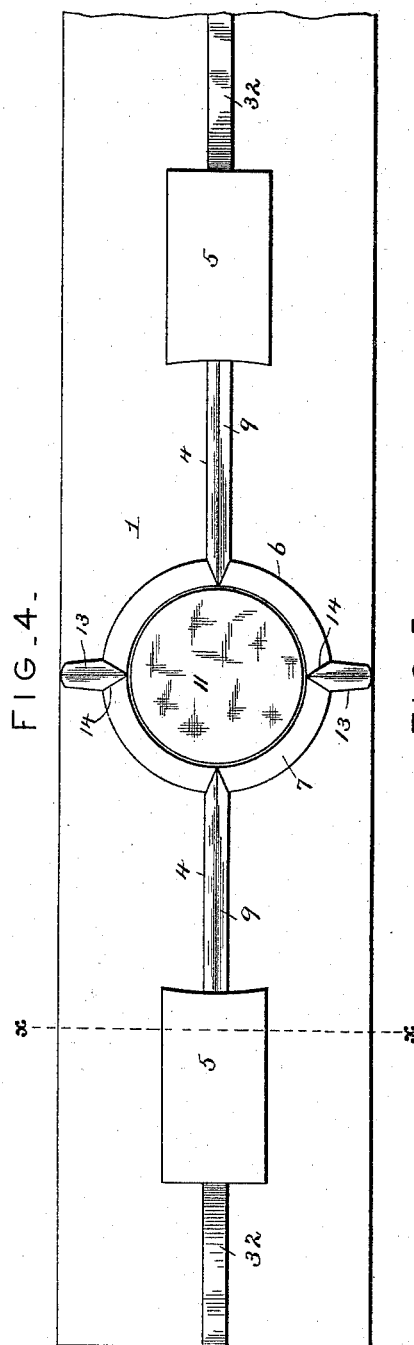
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UNITED STATES PATENT OFFICE.

GEORGE TARRANT, OF BRANDON, NEW YORK, ASSIGNOR OF ONE-HALF TO
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RAILWAY TIE AND CHAIR.

SPECIFICATION forming part of Letters Patent No. 492,446, dated February 23, 1893.

Application filed March 31, 1892. Serial No. 427,276. (No model.)

To all whom it may concern:

Be it known that I, GEORGE TARRANT, a citizen of the United States, residing at Brandon, in the county of Franklin and State of New York, have invented a new and useful Railway Tie and Chair, of which the following is a specification.

This invention relates to certain new and useful improvements in railway ties and chairs to be used therewith, or independently of the tie as may be desired, and consists in the construction and arrangement of the parts thereof as will be more fully hereinafter described and claimed.

The object of this invention is to provide a support for a railway rail adapted to be used on an ordinary roadbed running in straight lines or curves and on bridges, which dispenses with the employment of fastening devices, such as spikes or bolts, in direct connection with the flange of the rail, and whereby the rails are caused to assume a proper position when the center of gravity is shifted from one side to the other, and wherein the parts are of simple and effective construction and operation.

In the drawings—Figure 1 is a perspective view of the combined tie and chair with portions of railway rails shown in position thereon. Fig. 2 is a detail perspective view of the chair disconnected and looking at the top thereof. Fig. 3 is a similar view of the chair looking at the bottom of the same. Fig. 4 is a top plan view of one end of the tie, showing the chair removed. Fig. 5 is an elevation of the tie and chair, showing the same arranged for connection with bridge-stringers. Fig. 6 is a detail perspective view of a portion of a tie, broken away in parts and showing the modified form of construction. Fig. 7 is a cross-section on the line $x-x$, Fig. 4, showing a further modified form of construction.

Similar numerals of reference indicate corresponding parts in the several views.

Referring to the drawings, the numeral 1 designates the tie, which has a depending flange 2, formed with upper horizontal flanges 3, a vertical flange 4 rising from the central portion of the flanges 3, and a head 5 connected to and forming horizontal flanges at the top portion of the flange 4. At the opposite ends

of the tie are formed barrels 6, centrally located in the said flanges and having an upper beveled edge 7. This construction of tie is provided for ordinary roadbeds, but, as shown in Fig. 5, the lower flange 2 is dispensed with, and the flanges 3 thereby arranged to lie flat upon and be secured at opposite ends thereof to the stringers of a bridge. The flanges 4 and 5 are cut away near opposite ends of the tie to form recesses 8, and the upper edge of the flange 4 is beveled, as at 9, in order to provide a close-fitting joint and avoid the accumulation of moisture at this point. In the flange 4 at the end of the recess 8 on opposite sides of the barrel 6 and under the overhanging portions of the flange 5 are formed elongated openings 10 for the reception of bolts, as will be more fully hereinafter set forth.

Within the barrel 6 is mounted an elastic cushion 11, preferably of rubber, though other materials adapted for the purpose may be substituted, and in Fig. 6 the said barrel 6 is shown of greater depth and as extending to the bottom of the flange 2, and therein is mounted a heavy spring 12. To strengthen the barrel and form a rigidity of structure of the same, flanges 13 are integrally located with diametrically opposite sides thereof, extending throughout the length of the same, and intersecting the flange 3 with which it is integrally formed. The upper edges or ends of the said flanges 13 are beveled as at 14, and the said beveled construction, in connection with the flanges 13, the top of the barrel 6, and of the flange 4, obviate the formation of surfaces for the collection of moisture and provide means for draining all moisture therefrom.

Within the recesses 8 are removably seated chairs 15. The bottom portion of each of the chairs is formed with oppositely disposed flanges 16, which provides shoulders 17 and said flanges are extended beyond the ends of the chairs in the form of ears 18, having eyes 19 therein. The difference of distance between parallel lines drawn from one shoulder 17 past the opposite shoulder compensates for the thickness of the flange 4, and also arranges the construction of the chair for slight movement. Centrally depending from the bottom of each chair is a circular head 20, which is

of about the same diametric cross-section as the barrel 6, and is adapted to fit into said barrel and press on the elastic cushion or spring hereinbefore referred to. Between the periphery of the said head 20 and the interior oppositely-disposed portions of the flanges 16 a channel or way 21 is formed by curving the inner portions of said flanges, as at 22, to thereby provide means for freely rotating the chair over the top portion of the barrel during the action of adjustment, the said space or way 21 being sufficiently wide to pass the flanges 13. The top portion of each chair is formed with oppositely-disposed heads 23, having recesses 24 under the inner projecting portions thereof whose walls, as at 25, are in parallel planes and are sufficiently wide apart as to snugly embrace the base flange of a railway rail. The said heads 23 are also formed with inner opposing diagonal walls 26, which form a diagonal seat 27, in which the base-flange of the rail is first located before the chair is turned and properly secured in position, and by this means the chairs and rails may be properly manipulated or adjusted before being finally secured in position.

It will be observed that the heads 23 are in all respects of similar or duplicate formation, and that the chair may thereby be reversed endwise and either side thereof placed in position in connection with the tie. This advantage in the construction of the chair avoids unnecessary care in the adjustment of the chair and positioning it in any precise manner as regards the sides thereof. This latter advantage is further aided by the arrangement of the flanges 16 on the under sides of the chairs, as they may be readily arranged to engage either side of the flange 4.

In mounting the chair in position, the head 20 is set within the barrel 6 and rests on the cushion 11 or spring 12 as the case may be, and positioned to have the diagonal seats 27 in parallel lines or planes and in the direction in which the rails are to be laid. The base-flanges of the rails are then placed in the seats 27 and the chairs revolved until the opposite edges of said flanges enter the recesses 24 and confined by the heads 23. In this position, the shoulders 17 of the flanges 16 bear against opposite sides of the flange 4 of each tie, and the eyes 19 of the ears 18 are in proper relation to the elongated openings 10 in the said flange 4. The top portions of the ears 18 are shouldered, as at 28, in order to readily take under the overhanging portions of the flange 5 of the tie, and beveled to be drawn snugly under the said overhanging portions and to conform to the shape of the under side of the latter. Bolts 29 are then inserted through the eyes 19 and the openings 10, and the ears 18, thereby properly secured in position against the flange 4. What resistance may be offered to drawing the said ears under the overhanging portions of the flange 5, will be overcome by the draw-

ing action of the bolts when the nuts are applied thereto and screwed thereon. The elongated openings 10 permit movement of the chairs without any undue strain on the fastening-bolts 29, and avoid loosening the nuts on the latter. As shown in Fig. 7, a spring 30 is inserted between the ears 18 and the flange 4 and over the bolts 29, whereby a nut-lock or cushioning effect is produced which will prevent loosening of the nuts on the bolts.

The form of construction of tie and chair hereinbefore set forth has many superior advantages and conveniences. The rails are cushioned to such a degree as to reduce wear upon the same and deaden the sound and also reduce the vibrations, especially in traveling over bridges. As before mentioned, no means of securement are provided other than the chair set forth, which is readily placed in position and provides for accurate alignment of the rails without the employment of any great amount of skill.

As in ordinary forms of railway tracks where curves are provided, one side of the curve is let down to a lower plane than the opposite side for purposes well known in the art, but by this construction wherein the parts are cushioned as described, this change in level will be automatically assumed by the rails without providing a primary construction, as in all instances the device set forth will accommodate itself to a shifting of the center of gravity from one side to the other.

When the base flanges of the rails are seated in the recesses 24 of the heads 23, the outer portions of each of said recesses, as at 31, will bite against the edges of the said flanges and prevent creeping of the rails, which will be obviated by the binding at the points set forth; and as no movement of the rail can be had in a lateral direction, no movement whatever of the rails will be permitted except it be relatively with the ties supporting the same. As shown at 32, a portion of the flanges 4 and 5 may be cut or beveled away at the ends to avoid projections at these points on the outside portions of the rails.

Many other advantages will appear from time to time, and the convenience and utility of the form of construction herein set forth will be readily apparent to those skilled in the art.

Having thus described the invention, what is claimed as new is—

1. The combination of a railway tie having an upper flange, and a cushioned chair located at opposite sides of and engaging said flange, substantially as described.

2. The combination of a tie having flanges as set forth, and recesses in said flanges at opposite ends thereof, and cushioned chairs rotatably located in said recesses, substantially as described.

3. The combination of a railway tie having barrels located at opposite ends thereof and flanges connecting with said barrels, a yielding device located in said barrels, a chair

engaging each of said barrels and having a head on the inner side thereof bearing against said yielding device and also provided with flanges adjacent to said head having ears with eyes therein, and heads on the top portions of the same provided with recesses, and means for securing the said parts together, substantially as described.

4. The combination of a railway tie having a flange with elongated openings therein, and a cushioned chair having ears projecting from opposite ends thereof with eyes therein adapted to be relatively arranged with elongated openings for the reception of a suitable fastening device, substantially as described.

5. A railway chair, having lower reversely arranged flanges and ears and upper reversely arranged heads with recesses therein and a diagonal seat extending between the same, substantially as described.

6. A railway chair, having a lower centrally located head and oppositely disposed flanges with a circular space or way between said head and flanges, and ears projecting from opposite ends thereof, and heads on the up-

per side of said chair having recesses therein, and a diagonally disposed seat extending between the same, substantially as described.

7. The combination of a railway tie having flanges vertically and horizontally disposed and recesses at opposite ends with barrels centrally located therein, a portion of the flanges having elongated openings therein, a yielding device located in each of said barrels, chairs having centrally located heads on the under sides thereof fitting in said barrels and bearing on the yielding devices therein, the said heads being also formed with reversely situated flanges on the under sides of the same and upper reversely situated heads having recesses and an intersecting diagonally arranged seat, and means for fastening said chair to the tie, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE TARRANT.

Witnesses:

JOHN H. SIGGERS,
BERNICE A. WOOD.