D. B. BISER.

RAILWAY TIE.

APPLICATION FILED MAR. 6, 1911.

997,952.

Patented July 18, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

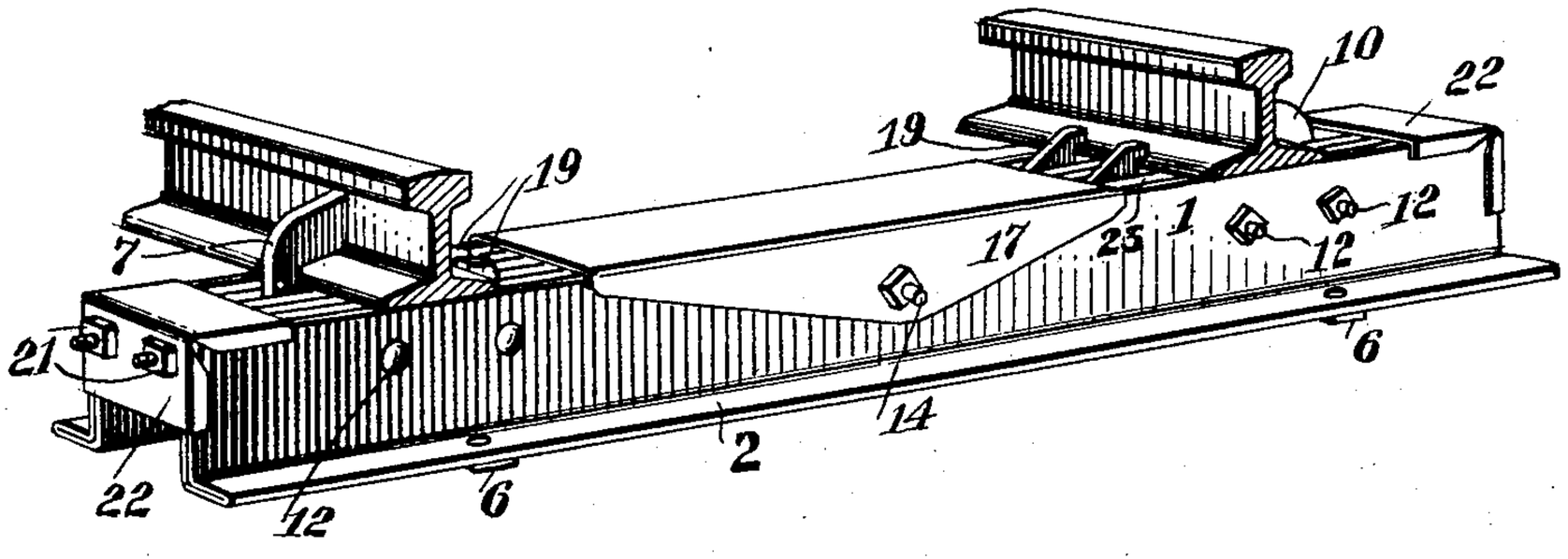


Fig. 2.

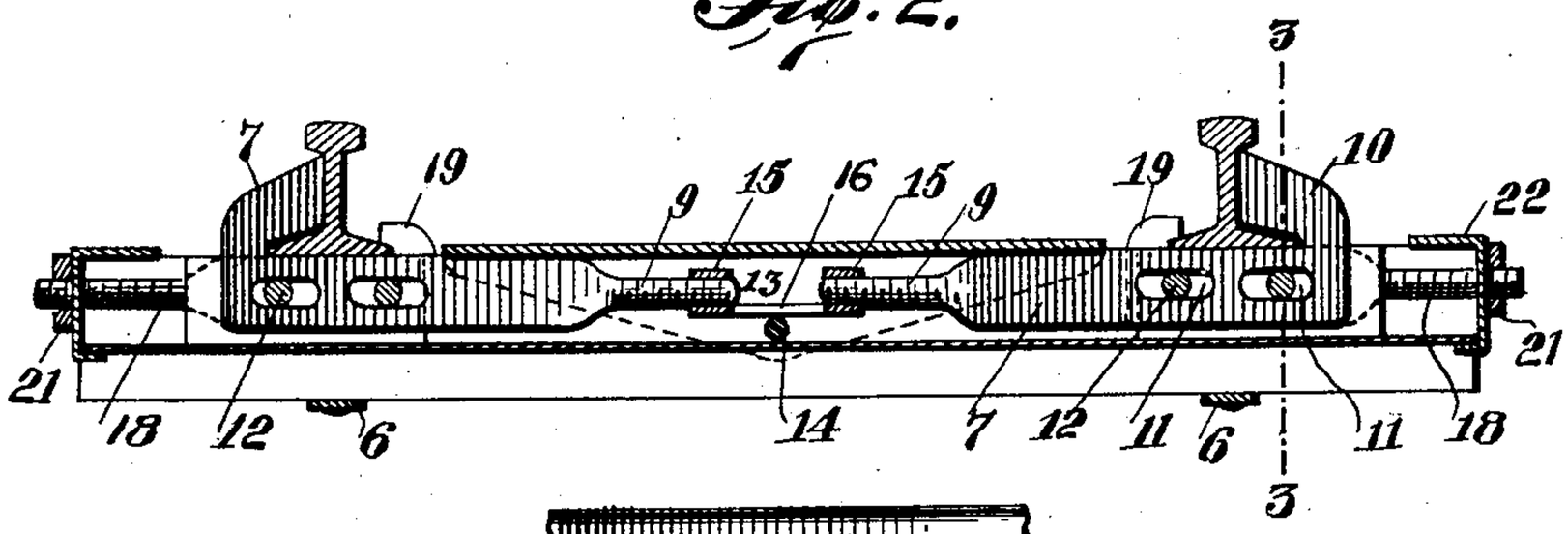
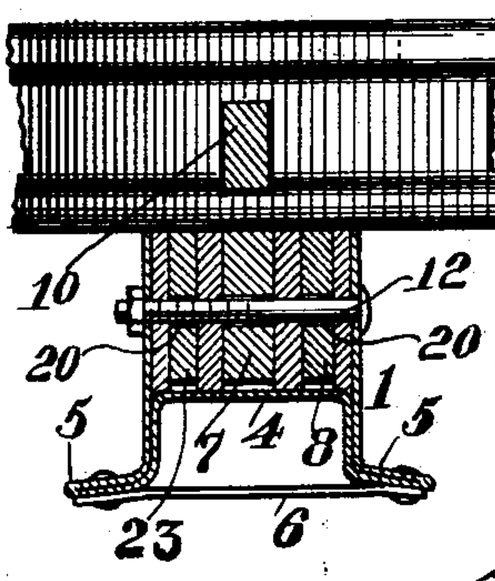


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

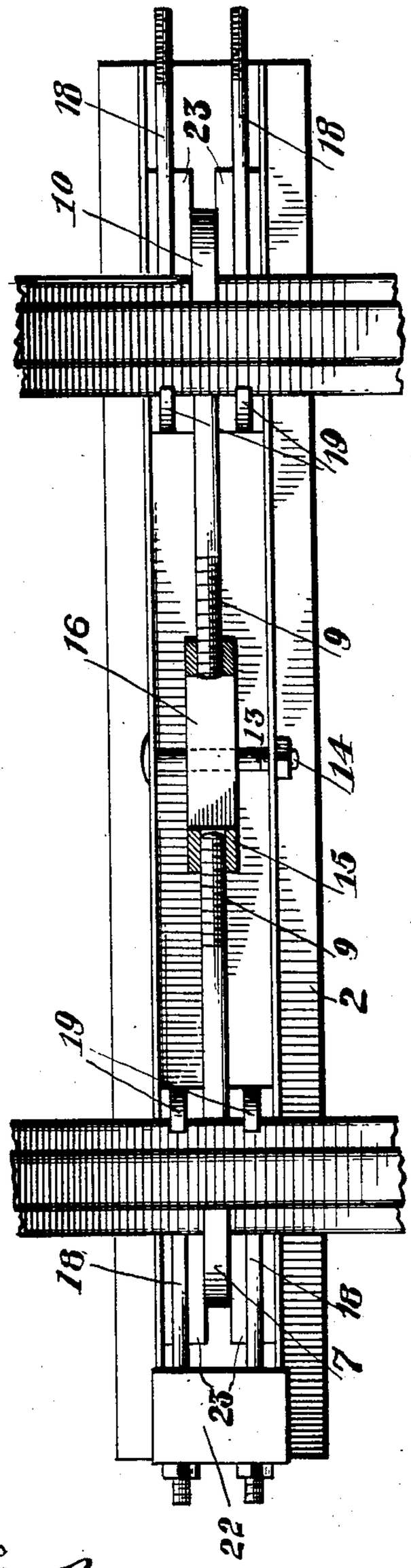

Fig. 6.

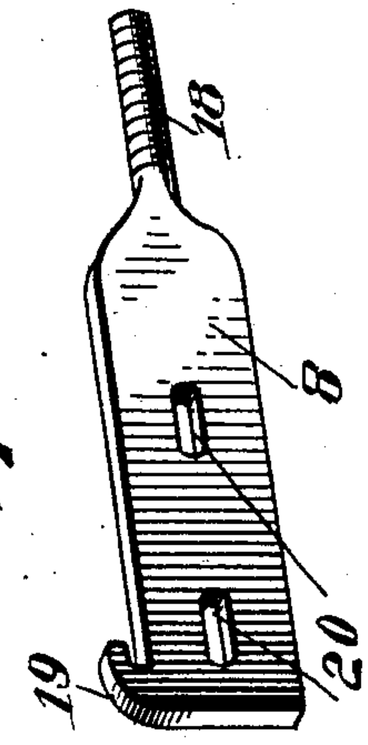

Fig. 5.

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RAILWAY-TIE.

997,952. Specification of Letters Patent. **Patented July 18, 1911.**

Application filed March 6, 1911. Serial No. 612,604.

To all whom it may concern:

Be it known that I, DANIEL B. BISER, a citizen of the United States, residing at Keyser, in the county of Mineral and State of West Virginia, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

My invention relates to improvements in railway ties, and the objects thereof are to provide a tie embodying spikeless rail fastening and bracing means; to provide a tie involving fastening and bracing means of the character described which may be locked against displacement subsequent to its adjustment; to provide a metallic tie which is thoroughly reinforced at all points to effectively resist jarring; and to provide a metallic tie in which the rail securing adjuncts are reliably protected from the elements.

To the accomplishment of the recited objects and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In said drawings:—Figure 1 is a perspective view of the improved tie. Fig. 2 is a central longitudinal section of the tie. Fig. 3 is a transverse sectional elevation of the tie along lines 3—3 of Fig. 2. Fig. 4 is a top plan view of the tie showing the cover removed. Fig. 5 is a detail perspective of the combined rail clamp and brace, and Fig. 6 is a similar view of the inner rail clamp.

Referring more particularly to the drawings for a detail description of my invention, the numeral 1 designates the tie proper, which is constructed, preferably, of sheet-steel with its bottom 2 terminating at a point to one side of the medial line of the vertical extent of the tie in order that sufficient space will be left between said bottom and the base of the depending right angular flanges 5 to prevent displacement of the tie when the same has been properly positioned on the ballast. I also connect these flanges 5, preferably at the outer proximal ends of the tie, by means of cross-pieces 6 and thus insure the tie against lateral spreading.

The rail-securing means comprises a combined fastener and brace 7 which is designed to be adjusted against the outer side of the rail, and a pair of clamps 8 adapted to be brought in contact with the inner side of the rail base. The securing means employed for each rail are in duplicate and a description of one will suffice for a full explication of both.

The combined rail fastener and brace, as will be found upon inspection of Figs. 2 and 5, is in the form of a plate with an inner reduced screw-threaded extremity 9 and an outer substantially right angularly disposed upwardly projecting, extremity 10, which latter is intended to be of slightly less vertical extent than the corresponding extent of the rail-web for a purpose which will be hereinafter set forth. Furthermore, each combined fastener and brace is provided with a pair of elongated slots, as 11, which coöperate with the transversely arranged bolts 12, so that provision is made for guiding the members 7 in their rectilinear movements. Both of the combined fasteners and braces are operable through the medium of a turn-buckle 13 located centrally of the tie 1 and connected in a well known manner to the opposed screw-threaded extremities 9 of said members, and of course, it will appear obvious that by virtue of such operating means the said members may be expeditiously extended or retracted simultaneously. Working in conjunction with the turn-buckle 13 is a transversely disposed bolt 14, for effectively locking the turn-buckle when the latter has once been adjusted to the desired degree. The turn-buckle 13 comprises in its construction two interiorly screw-threaded sleeves 15 and an integral connecting bridge piece 16, which as clearly exhibited in Fig. 2 is flat in the direction of its length, and it follows that when the turn-buckle has been caused to assume the position illustrated in Fig. 2 and the bolt 14 inserted beneath the same movement of the turn-buckle will be absolutely precluded. I also utilize the bolt 14 as a fastening means for the cover 17 of the tie, and it will be manifest that the bolt acting as a locking means for the combined rail fasteners and braces and as a securing means for the cover 17, the same serves in a dual capacity or function.

The inner rail fastening clamps 8 are similar in construction to their corresponding members 10, having outer screw-threaded terminals 18, inner hook-like terminals 19, and a pair of slots 20 for engagement with the bolts 12. The outer screw-threaded terminals 18 of these clamps extend slightly beyond the opposite ends of the tie and are

equipped with nuts 21, which when screwed home engage the angular shaped washers 22, the same conforming to the angle of the ends of the tie proper and being bent about the marginal edges of the tie as illustrated in Fig. 1.

Interposed between the combined rail fasteners and braces 7 and the clamps 8 are a plurality of anti-friction filling pieces 23, which permit an easy adjustment of the rail-securing means and reduce friction to minimum.

In practical operation, the tie is placed in engagement with the inner clamps 8, the combined fasteners and braces having been previously adjusted outwardly to permit of the ready insertion of said rails between the securing means, or if desired, this operation may be reversed, that is, the rail may be first brought into contact with the combined fastener and brace and subsequently the clamps 8 manipulated to cause a positive engagement of the latter with the base of the rail. As hereinbefore described both of the combined fasteners and braces are actuated through the turn-buckle 13 whereby the said members exert a wedging action upon the rail base and at the same time effectively brace the rails against lateral movement. The cover 17 is then secured over the central portion of the tie by means of the bolt 14, which also serves to prevent rotation of the turn-buckle, as previously set forth. The clamps 8 may be adjusted with facility by the appropriate turning of the nuts 21, and if after the rails have been initially positioned between the securing means and a final adjustment of this means is required, I preferably rely solely upon the clamps 8, which as before explained may be quickly adjusted from the exterior portions of the tie.

From the foregoing it will appear obvious that I have devised a tie involving rail fastening devices which to a marked degree contribute to the utility of the invention and render the same capable of general adaptation.

What I claim, is:—

1. The combination with a tie having a cover and rail-fastening devices, of a member for adjustably connecting said devices, and means for securing said cover with respect to the tie and preventing movement of said member.

2. The combination with a tie having a pair of inwardly extending independently adjustable rail-clamps, and a pair of outwardly projecting simultaneously adjustable fastening devices interposed between said rail-clamps.

3. The combination with a tie having a cover and rail-fastening devices, of a member for adjustably connecting said devices, and common means for securing said cover with respect to the tie and preventing movement of said member.

4. The combination with a tie having a rail-fastening device adjacent each end thereof, of means for simultaneously adjusting said devices, and a pair of independently adjustable rail-clamps arranged at each end of the tie, and spaced in a horizontal plane, said rail-fastening devices being interposed between said rail-clamps.

5. The combination with a tie of a pair of simultaneously adjustable clamps for engaging the outer sides of the rail, pairs of clamps for engaging the inner portion of the rail, and means extending through the tie and clamp for guiding the movements of the latter.

6. The combination with a tie of a pair of clamps for engaging the outer sides of the rail, pairs of clamps for engaging the inner portions of the rail, and means extending through the tie and clamp for guiding the movements of the latter.

7. The combination with a tie of a plurality of clamping devices for engaging opposite sides of the tie, anti-friction filling pieces arranged between said devices, and means for adjusting said devices.

8. The combination with a tie of a pair of simultaneously adjustable clamps for engaging the outer sides of the rail, pairs of adjustable clamps for engaging the inner portion of the rail, the movements of said clamps being in opposition to each other.

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

DANIEL B. BISER.

Witnesses:
CHAS. N. FINWELL,
J. A. GLAZE.