No. 859,439. PATENTED JULY 9, 1907.

C. S. DEAN.

RAILWAY TIE.

APPLICATION FILED JUNE 21, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

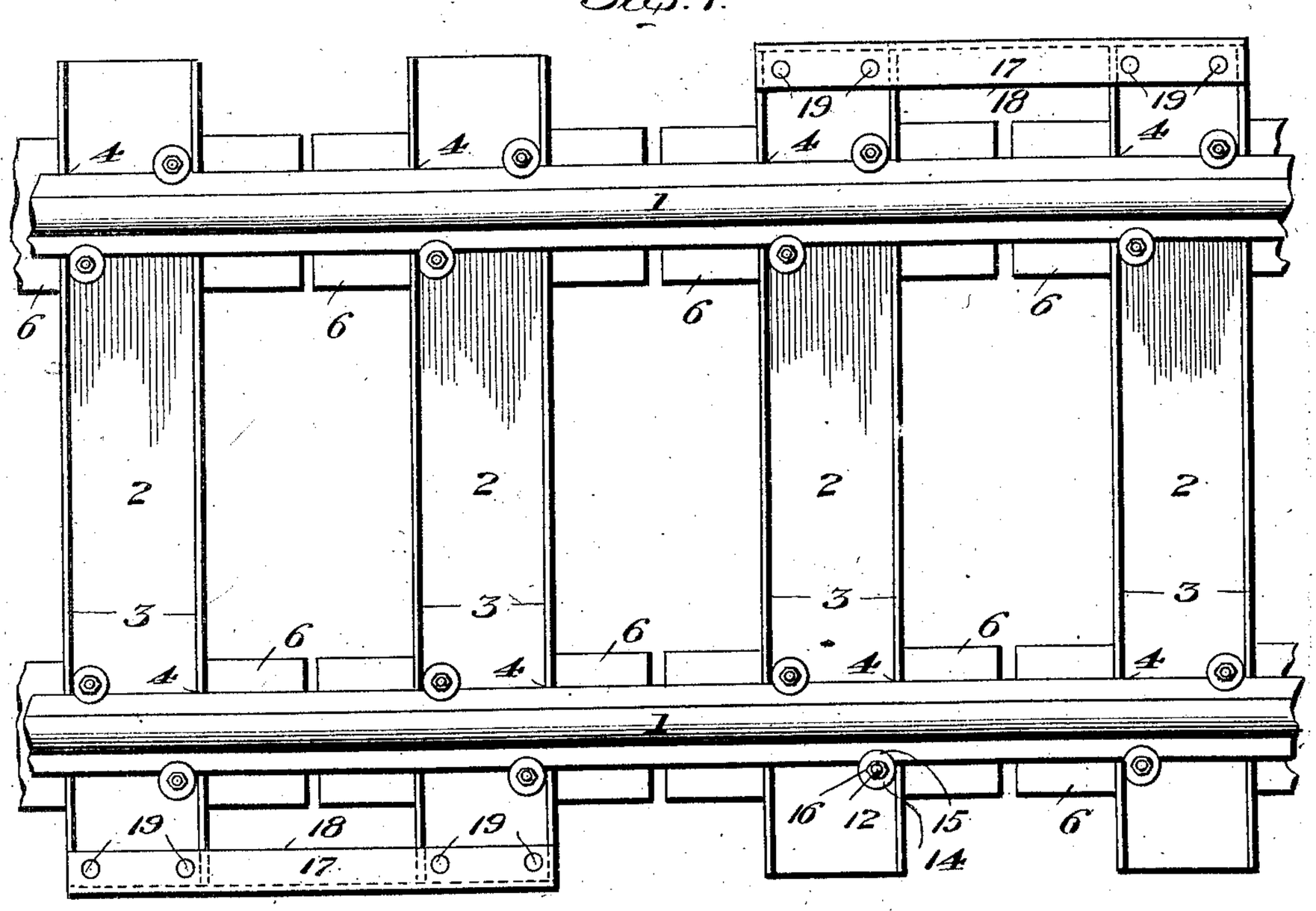


Fig. 2.

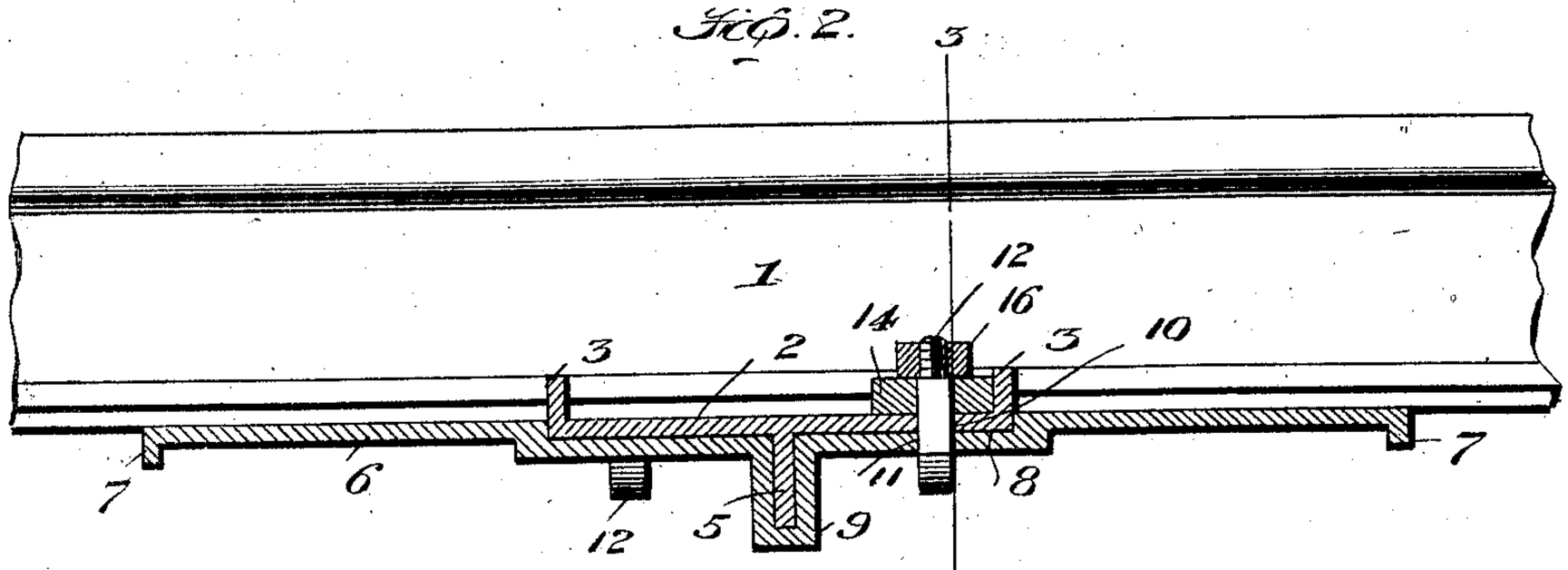
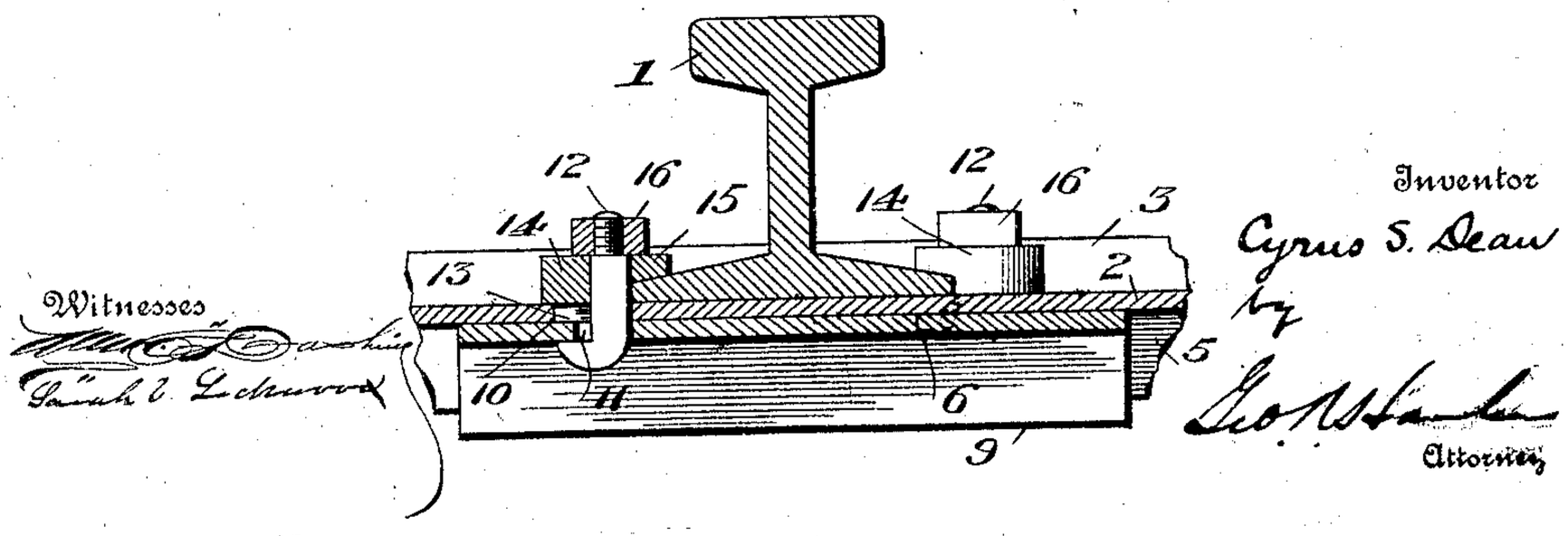


Fig. 3.



Witnesses

Inventor

Cyrus S. Dean

by

Attorney

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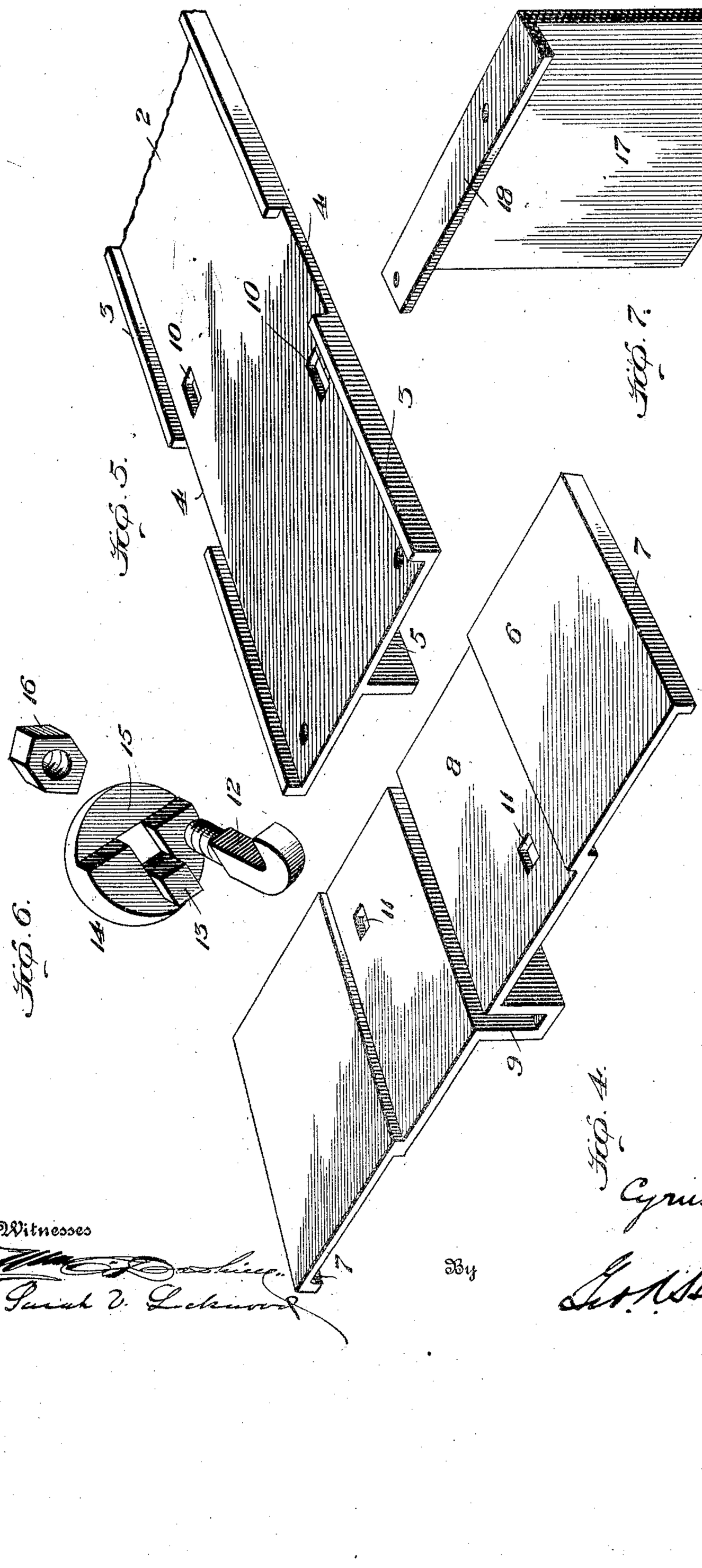

Fig. 5.

Fig. 7.

Fig. 6.

Fig. 4.

Witnesses

Sarah V. Lockwood

By

Inventor

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UNITED STATES PATENT OFFICE.

CYRUS S. DEAN, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO ALBERT D. JAMIESON, OF BUFFALO, NEW YORK.

RAILWAY-TIE.

No. 859,439. Specification of Letters Patent. Patented July 9, 1907.

Application filed June 21, 1906. Serial No. 322,724.

To all whom it may concern:

Be it known that I, CYRUS S. DEAN, a subject of the King of Great Britain, residing at Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

My invention relates to railway ties.

Wooden railway ties are liable to comparatively rapid rotting underneath because of the accumulation of water and this also renders the road-bed unstable, while another disadvantage incident to the use of the common wooden tie and also incident to the use of metal ties is that their construction prohibits tamping of the material under the tie so that hollows exist, permitting the accumulation of water and rendering the road-bed unstable. Further disadvantages of both wooden and metal ties heretofore used are the tendency of the ties, especially on curves, to shift lengthwise, thus causing a tendency toward accident and breakages.

The present invention has for its objects the provision of a metallic railway tie of simple and comparatively inexpensive construction which will possess great strength, durability and rigidity, permit tamping of the earth and ballast thereunder so that no hollows will exist and sinking of the tie will be prevented; to provide novel means for preventing endwise movement of the ties and also to brace the ties; to provide novel plates forming lateral supports extending in a direction of the lengths of the rails to provide a broad and firm bearing and support for the ties to prevent sinking thereof and to insure rigidity and to provide improved fastenings for securing the rails to the ties and the ties to the aforesaid supports.

The invention is set forth in the following specification and claims and in the accompanying drawings in which

Figure 1 is a plan view showing my invention in use; Fig. 2 is an enlarged section taken transversely of the ties and longitudinally of the supporting plates showing the rail and a part of a fastening in full lines; Fig. 3 is a cross-section on line 3—3 of Fig. 2; Fig. 4 is a perspective detail of one of the supporting plates; Fig. 5, a perspective detail of an end of a tie; Fig. 6, a perspective detail of one of the fastenings; and Fig. 7, a perspective detail of one of the combined braces and anchors to prevent longitudinal shifting of the ties.

Ordinary railway rails are shown at 1.

Ties constructed according to my invention are shown at 2 and they consists of a single piece of metal rolled with longitudinal upwardly extending flanges 3 which are cut out at 4 to form a seat for the rail, said tie being provided with a central longitudinal flange or web 5 which is preferably of the same width throughout its length. This web 5 gives great strength to the tie and it also supports the tie when it is placed on the road-bed so that the earth and ballast may be packed under the tie to support it, thus permitting this ballast or earth to be tamped under the tie from both sides thereof and insuring all of the space being filled and no hollows being left for the accumulation of water.

My improved supporting plate 6, which extends lengthwise of the rail, is provided with depending end flanges 7, a depressed seat 8 of a trifle more than the width of the tie 2, and a transverse depending box 9 of proper size to snugly receive the web 5 of the tie.

In the tie and supporting plates there are formed openings 10 and 11 respectively for the reception of the rail fastenings, the openings 10 being elongated for the introduction of the hook-shaped bolts 12 which are introduced from above by tilting them and passing them through the openings 10 and thence through openings 11, but these openings 10 are elongated for the further purpose of receiving the locking lug 13 on the washer 14, said lug preventing turning of the washer and said washer being provided with an overhanging portion 15 to engage the top of the rail base. A nut 16 screws onto the threaded portion of the hook-shaped bolt. The supporting plates 6 afford a broad bearing or base for the ends of the ties and as they may approach comparatively close to each other at their ends, there is provided a very rigid trackway structure.

To prevent any endwise motion or shifting of the ties, something which is liable to occur on curves, I provide anchors 17 consisting of plates sunk into the road-bed and having a flange 18 which overlaps the ends of the ties and is secured thereto by bolts 19. These anchors also brace the ties from each other. As many of the anchors may be employed as may be found desirable, but they need not necessarily be used on all the ties, nor is it necessary that they bridge adjacent ties, as single or individual anchors may be used at the ends of any tie where desired.

In assembling the trackway structure, the ties are first placed and the supporting plates may then be slid in lengthwise in a manner which will be apparent from Figs. 4 and 5, after which the ballast and earth may be tamped and the rails fastened in position. The anchors may then be driven home and secured to the ties.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a railway trackway, the combination with supporting plates extending lengthwise of the rails and having transverse channels, of ties resting flat on said plates and having ribs received in said channels, and fastenings securing the rails, ties, and supporting plates together.

2. In a railway trackway, the combination with supporting plates extending lengthwise of the rails and provided with a transverse channel, of ties provided with ribs extending longitudinally thereof and received in the channels aforesaid, and fastenings securing the rails, ties, and supporting plates together.

3. In a railway trackway, the combination with metallic

supporting plates extending lengthwise of the rails and provided with transverse seats and transverse channels, of channel metallic ties having a longitudinal rib on their under side said rib being received in said channels and said ties being seated in said seats, and fastenings securing the rails, ties, and supporting plates together.

4. A supporting plate for railway ties which is provided with a channel or seat on its upper face to receive the tie and has a transverse rib under the channel or seat on its under face.

5. The combination with railway ties, of an anchor plate connecting them together and extending downwardly therefrom into the road-bed.

6. The combination with a railway tie having an elongated straight-sided slot therein, and a rail, of a bolt extending through the tie, a washer on the bolt and bearing on the rail, said washer being provided with a flat-sided lug received in and engaging said slot, and a nut on the bolt.

7. The combination with a railway tie having an elongated slot, of a hook-shaped bolt having a flattened shank extending through and engaging the sides of said slot, said hook engaging the under side of the tie, a washer bearing on the rail, said washer being provided with a flat-sided lug which is received in and engages the slot, and a nut on the bolt and bearing on the washer.

In testimony whereof, I here unto affix my signature in presence of two witnesses.

CYRUS S. DEAN.

Witnesses:
SARAH V. LOCKWOOD,
ROLAND C. BOOTH.