W. P. DAY.

RAILWAY RAIL SUPPORT.

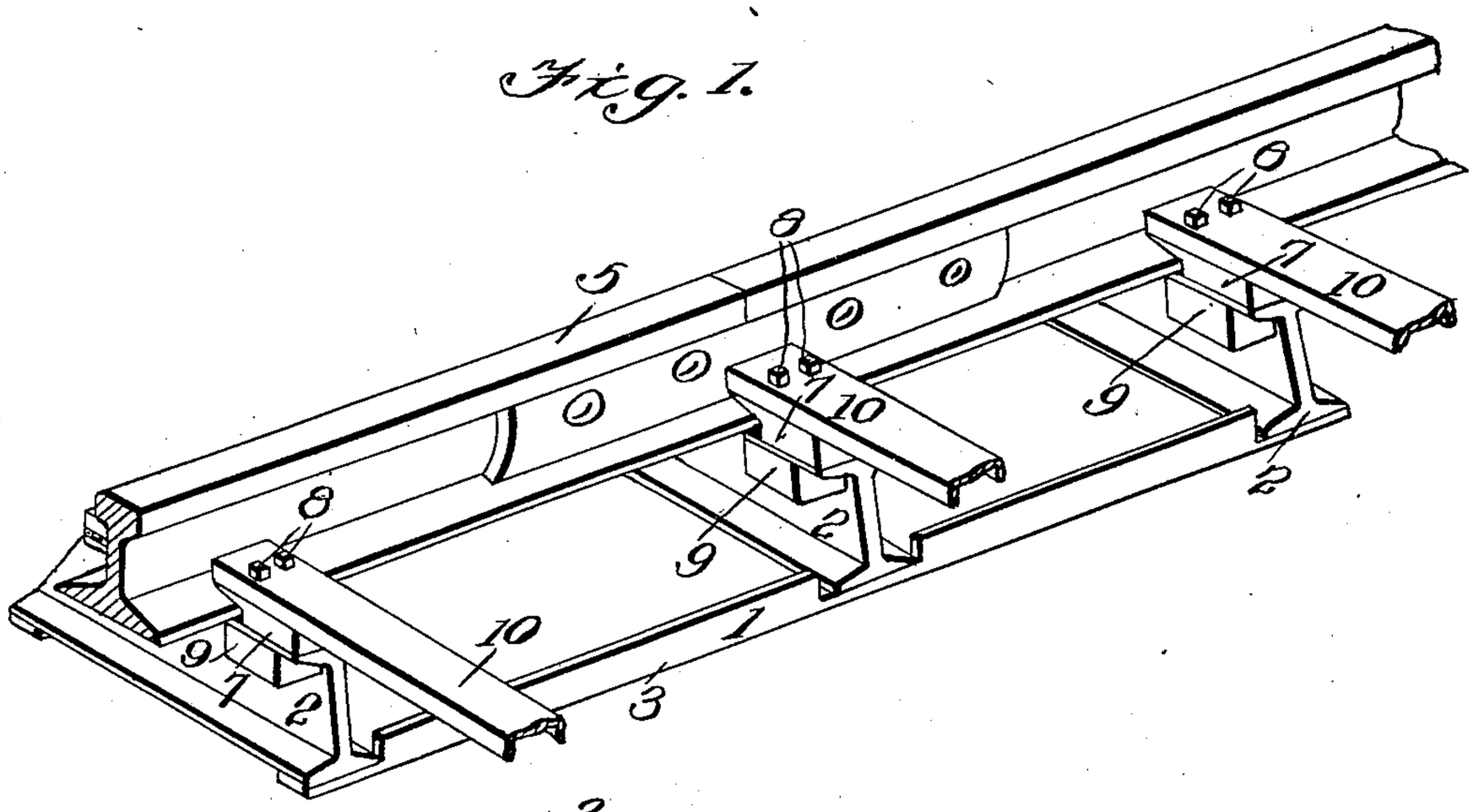
APPLICATION FILED MAR. 16, 1911.

999,966.

Patented Aug. 8, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



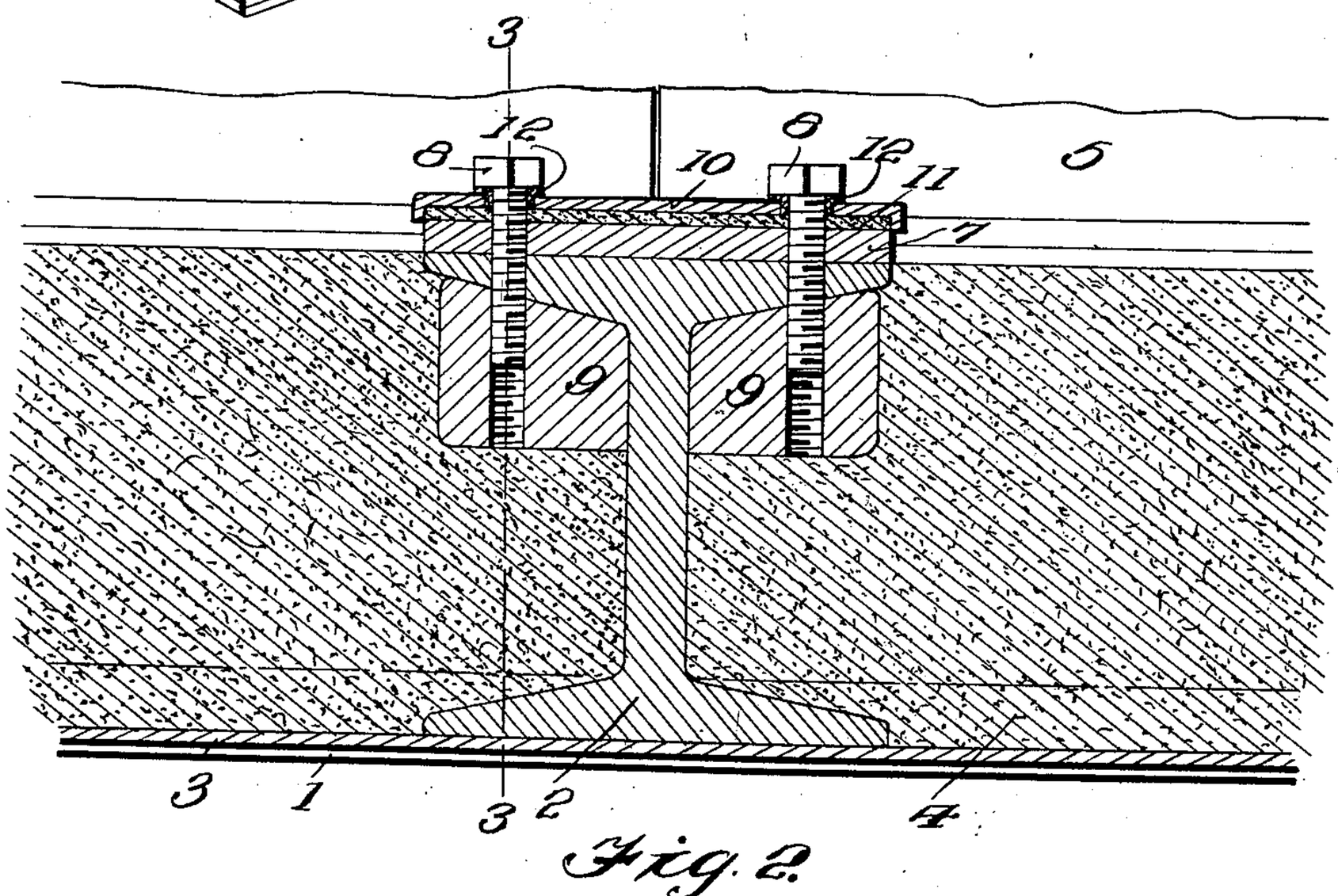


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

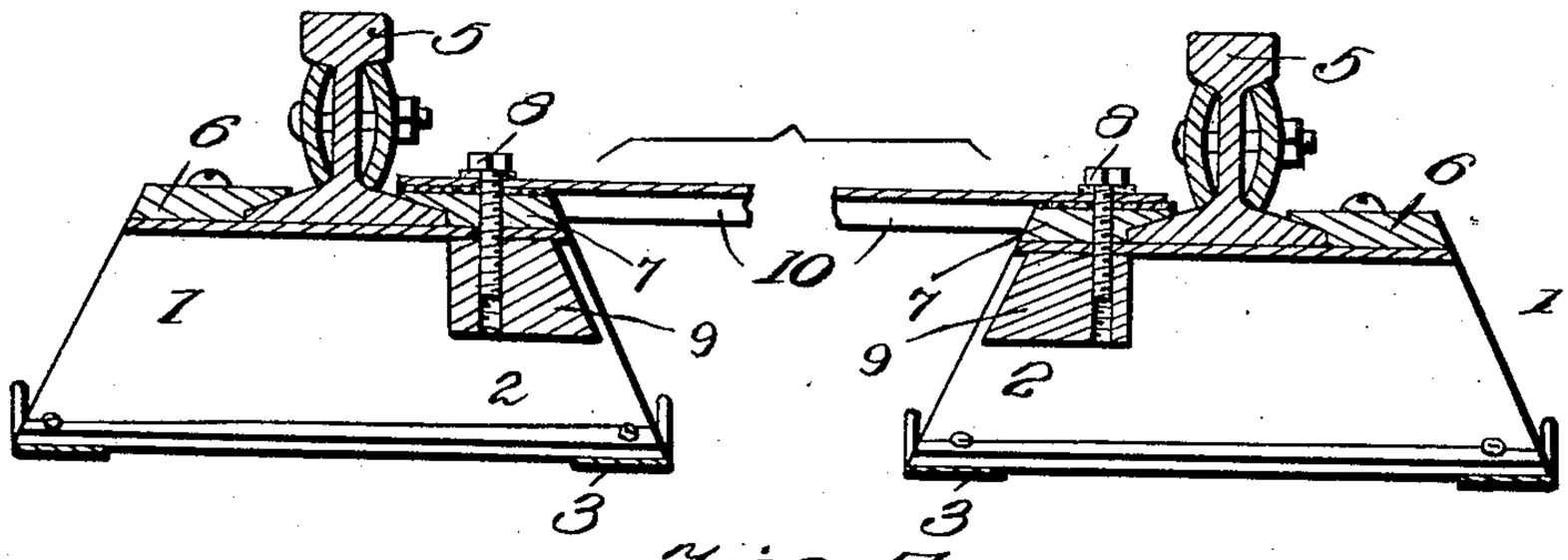
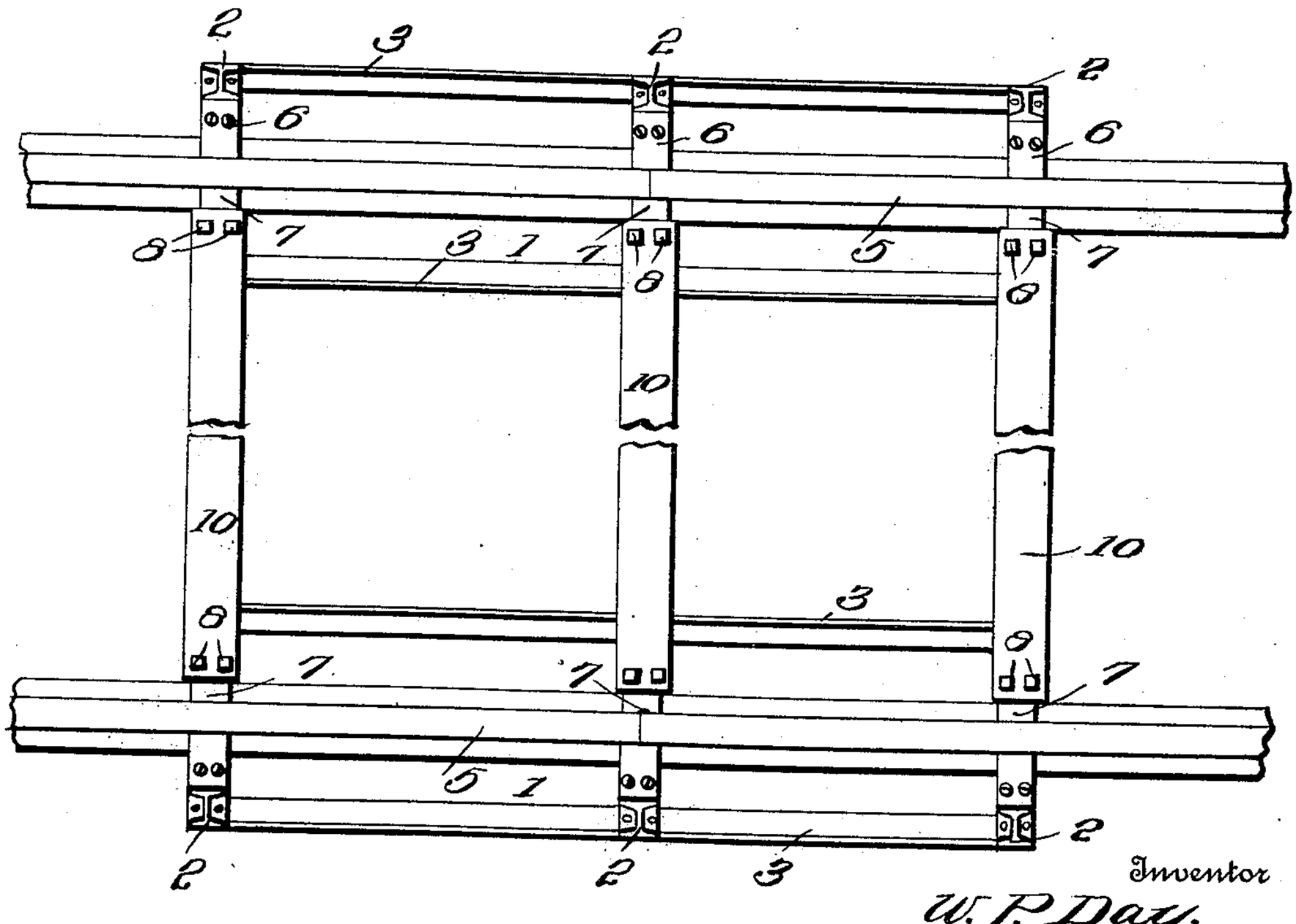


Fig. 4.



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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL SUPPORT.

999,966. Specification of Letters Patent. **Patented Aug. 8, 1911.**

Application filed March 16, 1911. Serial No. 614,888.

To all whom it may concern:

Be it known that I, WILLIAM P. DAY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Railway-Rail Supports, of which the following is a specification.

This invention comprehends certain new and useful improvements in combined metal and concrete stringers and ties for railways, and the invention has for its primary object an improved construction of rail support which will be simple and durable in construction and efficient in operation to solidly support the track rails without any liability of the rails sinking or separating, and which will be composed of comparatively few parts that may be cheaply manufactured and readily assembled and which, in the manufacture will not require any special processes over and above those that can be easily carried out by any well equipped rolling mill.

The invention also has for its object a device of this character which, while being strong and possessing the characteristics of effective coaction with ballast to a marked degree, will, in itself, be exceptionally light and require a minimum amount of steel in its production without detracting from its strength, thereby rendering the device capable of competing in cost, at least on an even footing with the ordinary and short-lived wooden cross-ties. And, the invention also aims to generally improve this class of devices, to simplify the construction, to increase and strengthen their longevity, and to otherwise make them more useful and commercially desirable.

With these and other objects in view, as will more fully appear as the description proceeds, the invention consists essentially in certain constructions, arrangements and combinations of the parts that I shall hereinafter more fully describe and claim.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a fragmentary perspective view of a rail support constructed in accordance with my present invention. Fig. 2 is an enlarged transverse sectional view. Fig. 3 is a sectional view of a pair of stringers taken at right angles to Fig. 4, and Fig. 4 is a top plan view.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Each of my improved track-rail supports comprises a pair of longitudinally extending stringers, designated 1, as a whole, each of the stringers comprising a skeleton framework of steel, reinforced with concrete. In the present instance each of these stringers embodies one intermediate and two-end I-beams 2 extending transversely of the rail, the I-beams 2 having their base-flanges riveted or otherwise secured to the recessed portions of the longitudinally extending angle-bars 3. The vertically projecting flanges of the angle-bars are disposed uppermost as shown, so as to effectually bind the concrete 4 which is filled in between the I-beams and angle-bars and to also protect this concrete filling in ballasting.

The I-beams 2 are provided, along one side of the rail 5 with rail fasteners 6 in the form of recessed blocks, as shown, said rail fasteners being preferably riveted or otherwise permanently secured to the upper flanges of the I-beams. These fasteners 6 have their recessed inner ends projecting over the adjoining base-flange of the rail 5, and co-act with corresponding fasteners 7, which are detachably secured to the inner ends of the I-beams so as to engage with the inner base-flange of the rail. Preferably the detachable fasteners 7 are secured in place by stud-bolts 8, the upper ends or heads of which are polygonal so as to provide for the application of a track wrench, or the like, the threaded ends of these bolts passing down through the upper flanges of the I-beams 2 and into threaded sockets that are formed in lugs 9 fitting up snugly against the under sides of the top flanges of the I-beams, as best shown in Fig. 2, and thereby securely prevented from turning while the bolts 8 are being screwed into position.

The stringers 1 are connected together, preferably midway of and at their ends by transversely extending tie-bars 10 which are preferably formed of channel steel, the channels facing downwardly, and the ends of the tie bars being formed with openings through which extend the bolts 8 which serve to

secure the fasteners 7 to their subjacent I-beams 2.

In the preferred arrangement of the parts the ends of the tie-bars 10 lie directly underneath the heads of the bolts, the side-flanges of the channeled tie-bars snugly fitting against the side edges of the underlying fasteners 7, and fiber-blocks 11 are interposed between the tie-bars 10 and the fasteners 7 underneath, while fiber bushings 12 lie underneath the heads of the bolts and fit in the bolt openings that are formed in the ends of the tie-bars. Preferably, the joint of the rails is made of one of the saddles that are formed by the transversely extending middle I-beams 2.

From the foregoing description in connection with the accompanying drawings, the operation of my improved rail support and track brace will be apparent.

In the preferred manner of constructing the devices, the skeleton frames of the stringers are laid into a form and filled with concrete, the angle-bars 3 effectually protecting the bottom in ballasting. After the reinforced stringers have been placed in position, the rails are set in against the outer permanently positioned fasteners, and the inner detachable fasteners are then secured in place, the tie-bars 10 being interposed between the heads of the fastening bolts for the inner fasteners and said subjacent fasteners, the entire structure being thereby very rigidly formed and serving to effectually hold the rails from spreading and sinking, in connection, of course with proper ballast.

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

1. A device of the character described, comprising stringers, each of which embodies transversely extending saddles, rail fasteners connected to said saddles, channel tie bars connected at one end to the inner rail fasteners of one stringer and at opposite ends to the rail fasteners of a stringer opposite, the channels of said tie bars facing downwardly and the side flanges of the tie bars embracing the side edges of said fasteners, and means for connecting the tie bars to said fasteners and the fasteners to the saddles.

2. A device of the character described, comprising stringers, inner and outer rail fasteners supported on said stringers and connected thereto, and transverse tie bars extending from one stringer to the opposite stringer, said tie bars being provided with downwardly projecting flanges engaging the side edges of the fasteners, the ends of the tie bars being connected to the fasteners.

3. A device of the character described, comprising stringers, each of which embodies transversely extending saddles, rail fasteners connected to said saddles, channeled tie-bars connected at one end to the inner rail fasteners of one stringer and at opposite ends to the rail fasteners of a stringer opposite, the side flanges of the tie-bars embracing the side edges of said fasteners, and withdrawable means connecting the tie-bars to said fasteners and said fasteners to their saddles.

4. A device of the character described, comprising stringers embodying transversely extending I-beam saddles, rail fasteners supported on said saddles, bolts extending down through said fasteners and the upper flanges of the saddles, interiorly threaded lugs fitting up against the under sides of said flanges and receiving said bolts, connecting bars interposed between the heads of the bolts of the correspondingly opposite fasteners and said fasteners fiber-blocks interposed between the ends of said tie-bars and the subjacent fasteners, and fiber bushings surrounding the upper ends of said bolts and fitting in the openings formed for said bolts in the tie-bars.

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

WILLIAM P. DAY. [L. S.]

Witnesses.
J. P. MADIGAN,
JOHN J. O'DONNELL.