

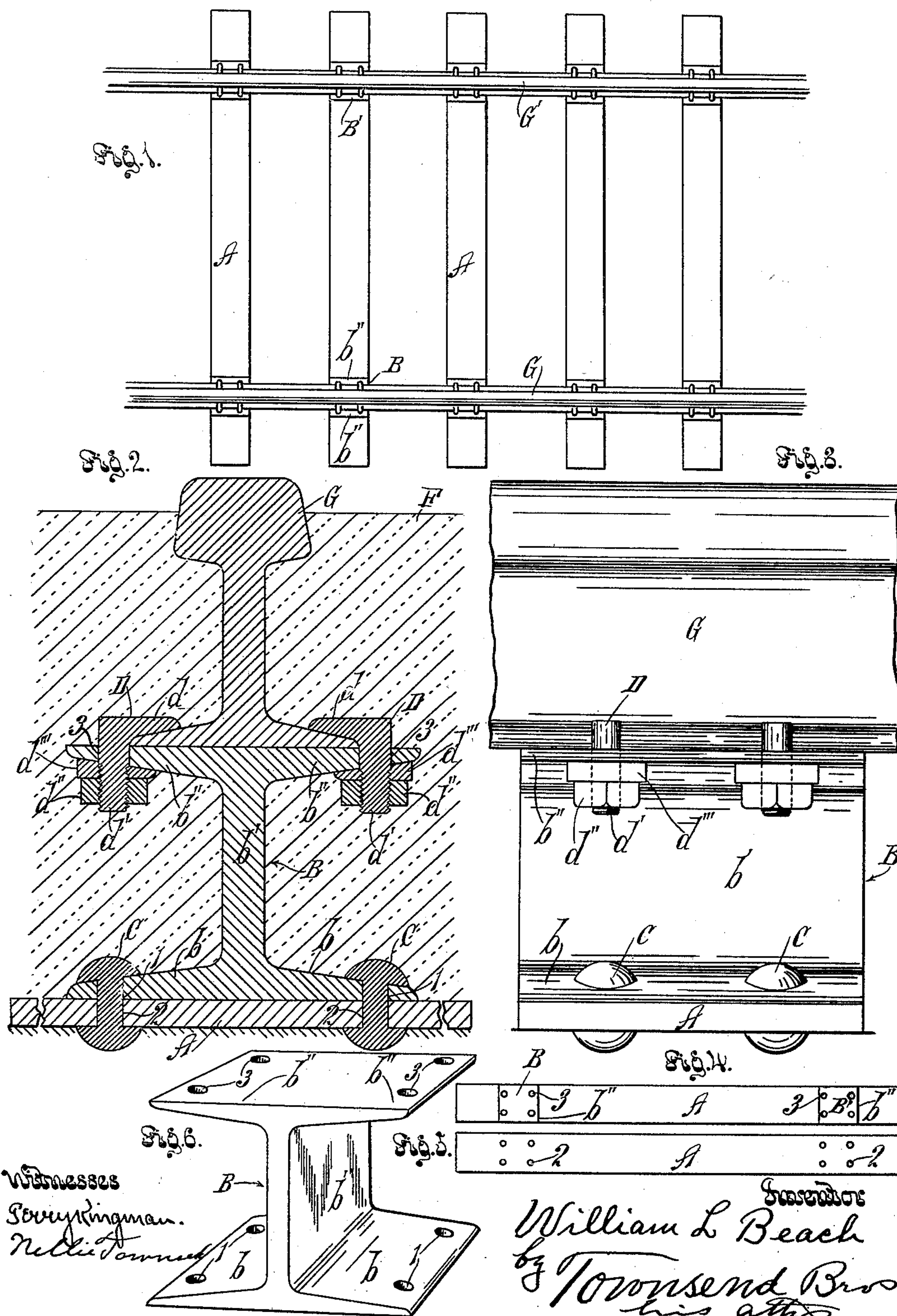
No. 688,232.

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W. L. BEACH.
RAILWAY.

(Application filed Feb. 21, 1899. Renewed May 2, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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RAILWAY.

SPECIFICATION forming part of Letters Patent No. 688,232, dated December 3, 1901.

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To all whom it may concern:

Be it known that I, WILLIAM L. BEACH, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Railways, of which the following is a specification.

My invention relates to railways having metallic ties; and the object of my invention is to provide an improved construction whereby greater lightness coupled with sufficient strength is secured, and also to provide for conveniently removing and replacing rails.

The accompanying drawings illustrate my invention.

Figure 1 is a plan of a portion of a railway embodying my invention, the ballast being omitted for clearness of illustration. Fig. 2 is a fragmental cross-section of a railway-track embodying my invention. Fig. 3 is a fragmental side elevation, omitting any ballast which would obstruct the view. Fig. 4 is a plan of a tie embodying my invention. Fig. 5 is a plan of the tie-plate. Fig. 6 is a view of one of the rail-carrying I-blocks detached from the tie-plate.

A indicates a metallic tie-plate which is preferably a plain flat plate of any desired width, thickness, and length. For example, the plate may be six feet long, six inches wide, and from a half to three-quarters of an inch thick or may be of any other dimensions desired.

B B' indicate two I-blocks which are fastened to the tie-plate by any suitable means, preferably by rivets C, which pass through the base-flanges b of the I-block and through the plate A. The I-block comprises a middle web b' , with expanded base, as at $b b$, and expanded top, as at $b'' b''$. The base-flanges b are perforated with holes 1, and the tie-plate A is perforated with corresponding holes 2, which register with the holes 1 of the base. The top flanges b'' of the I-block are perforated with holes 3 to receive the clamp-bolts D, the heads d of which project on one side only of the bolt-body d' , so that when the bolt is turned around in its hole 3 into one position the head d will extend over the flange of the track-rail G, and when turned in the other

position there will be no projection extending over the flange of the track-rail.

d'' indicates nuts for the bolts D, and d''' indicates beveled washers to fit between the nuts and the sloping under faces of the flanges b'' .

F indicates the ballasting of the road.

The I-blocks are flat at top and bottom, the heel and base being in parallel planes and substantially duplicates of each other. Said blocks are preferably made reversible and invertible, so that they may be turned end for end and either side can be riveted to the tie and the other side will hold the rail. This can be done very easily by simply rolling all of the flanges of the block substantially the same and then punching the holes in each flange in the same relative positions thereto that the holes occupy in the other flanges. This peculiarity of structure adds very much to the advantages possessed by the blocks, as no care need be exercised in assembling the parts as to how the blocks are put in position, for it is impossible to get them wrong.

Another advantage arising from my form of I-block is in rigidly and permanently securing it to the tie-plate in the factory by means of rivets instead of trying to secure it in position on the road by means of spikes. The latter method requires that the tie be of wood and that the base extend far enough beyond the top to permit of the retaining-spikes being driven without danger of the hammer striking the top flanges. The rivets are cheaper than the spikes and can be made to hold the I-block more securely in position with a narrower and less expensive base than can be done with the spikes with a wider base.

In practice the plates and the I-blocks will be punched with holes with special relation to the size of rails and the width of track to be laid, and the I-blocks may be riveted to the plate at the factory or subsequently, as desired. The I-blocks being attached to the tie-plates and the road-bed being graded, allowance being made for a desirable amount of ballast above the tie-plate to give solidity to the track, the tie-plates are laid in place with the I-blocks uppermost and at the required distance apart. Then the rails are

placed on top of the I-blocks and the bolts D inserted in their holes 3, and the washers d''' and nuts d'' are put in place and the nuts screwed home to bring the heads d of the bolts D against the flanges of the T-rail to firmly clamp the same to the top of the I-block. The rails of the track are thus brought to exact gage, the holes being so arranged that the webs of the I-blocks are transverse to the plate vertically beneath the webs of the T-rails when the same are set at the proper gage. The track is thus laid without any care upon the part of the workmen with reference to the gage. When both rails G G' have thus been adjusted and fastened in place, the ballasting is proceeded with and the ballast is firmly tamped under the tie-plate and against the webs b' of the I-blocks and under the flanges b'' thereof and is made to cover the tie-plate and the top of the top flanges of the I-blocks and also the base-flanges of the rails in the ordinary manner, and the road is thus completed. When it is desired to remove a rail, the ballast is removed to give access to the nuts d'' , which are then loosened sufficiently to allow the heads d of the bolt to be turned about to free the flanges of the rail. Then the rail can be removed, and when it or a substitute therefor is replaced the bolts can be turned to bring their heads over the flanges of the replaced rail, and the nuts are again tightened. Then the ballast is replaced and the track is thus repaired.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An I-block for railways, the flanges of which are substantial duplicates of each other

and are each perforated, the perforations of the upper flanges being arranged to register with the edges of the base of the rail.

2. An I-block for railways, the flanges of which are substantial duplicates of each other, and are each perforated; the perforations of each flange occupying the same relative position thereto that the other perforations do to their respective flanges.

3. The combination, with a tie-plate; of an I-block rigidly and permanently secured thereto, the flanges of the block being substantial duplicates of each other and each perforated, the perforations of the top flanges being arranged to register with the edges of the base of the rail to be secured thereon.

4. The combination with a perforated tie-plate; of a reversible and invertible I-block secured thereto, said block having its flanges substantial duplicates of each other, and each flange being provided with perforations to register with the perforations in the tie-plate.

5. The combination with the tie-plate to extend across the track, of a reversible and invertible I-block fastened to the tie-plate, the web of the block being at right angles to the axis of the plate and the head of the block wider than the base of the T-rail and perforated with holes; bolts through the holes, each being provided with heads to fit over the flanges of the rail; and nuts for fastening the bolts in place.

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