

(No Model.)

L. BERGMARK.

RAILROAD RAIL AND SLEEPER OR STRINGER.

No. 448,628.

Patented Mar. 24, 1891.

Fig. 1.

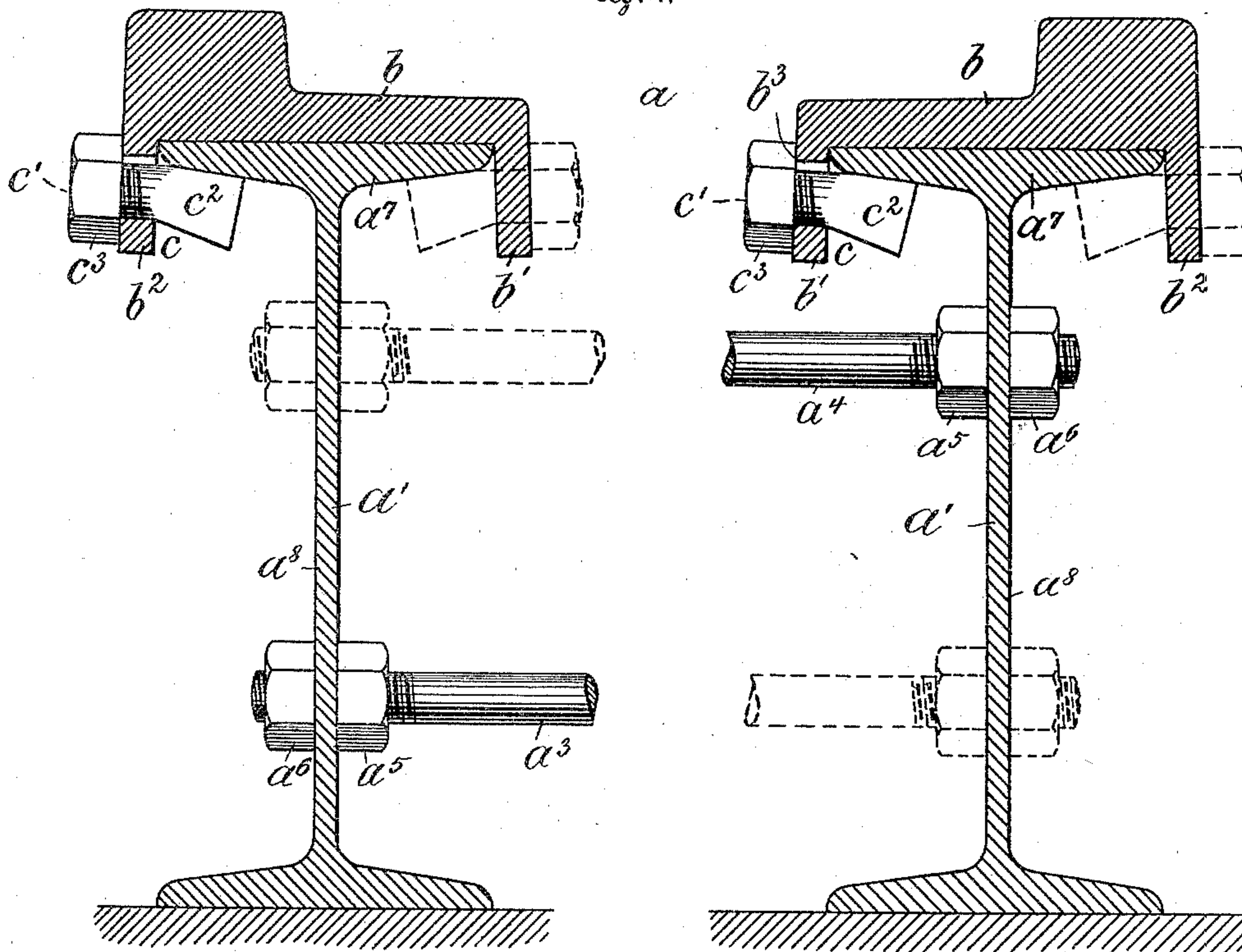


Fig. 2.

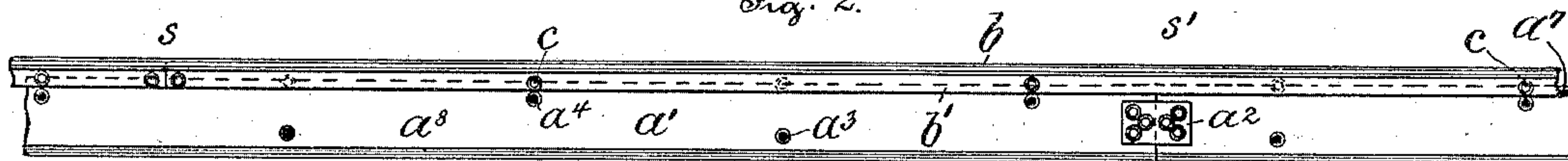
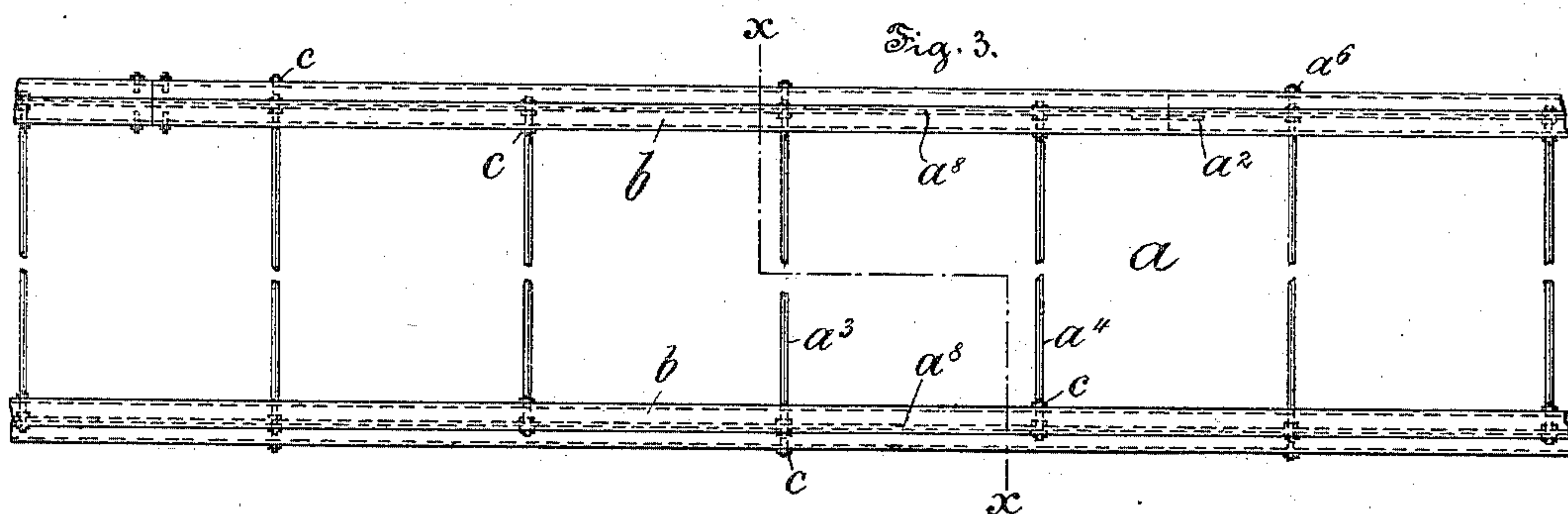


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEO BERGMARK, OF PHILADELPHIA, PENNSYLVANIA.

RAILROAD RAIL AND SLEEPER OR STRINGER.

SPECIFICATION forming part of Letters Patent No. 448,628, dated March 24, 1891.

Application filed November 29, 1890. Serial No. 373,021. (No model.)

To all whom it may concern:

Be it known that I, LEO BERGMARK, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Railroad Rails and Sleepers or Stringers, of which the following is a specification.

My invention is applicable in whole or in part to railways in general, and relates to certain improvements in the construction, arrangement, and disposition of the rails and rail-supports and cross-ties constituting the track or permanent way thereof.

The principal objects of my present invention are, first, to provide a solid, durable, and comparatively inexpensive permanent way or track adapted for cars or other vehicles to travel over or be propelled with a smooth gliding motion and without being jolted, swayed, or jarred; second, to provide simple and efficient means for supporting and retaining the rails to place and for preventing the tracks from spreading; third, to prevent the respective extremities of the rails from working loose, obtaining a more rigid support therefor, and consequently insuring a more perfect railroad-joint and permanent way, and, fourth, to provide rail-supports in which worn rails may be readily removed with the least possible labor and time and replaced by new rails without disturbing the supports.

In a track or permanent way embodying my invention the rails are laid upon two parallel courses of I-beams braced by means of tie-rods, and are secured against lateral displacement by means of side flanges fitted over the I-beams and against vertical movement by means of bolts passing through the flanges and provided with wedge-shaped or conical heads contacting with the I-beams and clamping the rails firmly thereto.

My invention consists in the improvements in railroad rails and sleepers or stringers hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part hereof, Figure 1 is a vertical section of a track or permanent way embodying features of my invention, taken on the line $x x$ of Fig. 3, and showing two courses of I-beams having one

series of tie-rods bolted to the top and one series of tie-rods bolted to the bottom of the webs thereof, and showing also the rails attached to said beams by means of bolts provided with conical or wedge-shaped heads and engaging said beams and rails. Fig. 2 is an elevation of one of the courses of I-beams having my improved rails clamped thereto, and showing the disposition of the cross-tie rods, and also showing the rails extending over the joints between the I-beams so as to break joint therewith; and Fig. 3 is a top or plan view of a track or permanent way constructed according to my invention.

Referring now to the drawings, a is a track or permanent way, comprising two parallel and continuous courses of I-beams a' , of suitable depth and of any convenient length. These I-beams a' are placed end to end, and are joined together by means of fish-plates a^2 , or in any preferred manner. The two parallel courses of I-beams a' are braced by means of two series of transverse tie-rods a^3 and a^4 , rigidly attached at the respective extremities thereof to the webs a^8 of the I-beams a' by means of nuts a^5 and a^6 . One series of tie-rods a^3 is located near the bottom and the other series a^4 is located near the top of the webs a^8 , in order to prevent the I-beams from being overturned in use.

b are rails of any preferred form, superposed upon each of said courses of I-beams and disposed so that the rails break joint with the I-beams; for example, as illustrated at s and s' in Fig. 2.

b' and b^2 are side flanges, preferably rolled integral with the rails b , and fitted onto the upper flange a^7 of the I-beams a' , in order to prevent lateral movement of the rails. These side flanges b' and b^2 are provided at intervals with apertures b^3 , for the reception of the fasteners c , for preventing the rails from moving vertically. Each of these fasteners c comprises a bolt c' , adapted to be inserted through the apertures b^3 and provided with a wedge-shaped or conical head c^2 , adapted to engage with the under side of the flange a^7 .

c^3 is a nut adapted to engage with the bolt c' , in order to draw the wedge-shaped or conical head c^2 into close contact with the flange a^7 , thereby firmly clamping the rail and I-beam together.

In practice it is frequently necessary or desirable to clamp the rails b to place upon the I-beams a' after the track has been laid, and this result may be accomplished by screwing up or tightening the nuts c^3 . Consequently the apertures b^3 are preferably so located as that a portion of the peripheries thereof extends above the lower edge of the flange a^7 , in order to insure the proper engagement of the wedge-shaped heads c^2 with the flange a^7 when the nuts are screwed up or tightened, as will be readily understood by reference to Fig. 1.

The fasteners c are preferably arranged opposite each other at the respective extremities of the rails, and are "staggered" throughout the rest of the length of the beam—that is, are so arranged as that the fasteners passing through the flange b^2 are not opposite those passing through the flange b' , as will appear by reference to Fig. 3.

In use the I-beams a' may be mounted in or on suitable stringers or sleepers, but preference is given to the employment of a bed of concrete or other similar material for the purpose. In all cases the spaces between the rails may be filled with gravel, paved, or packed in any other suitable manner.

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

1. A railroad-track or permanent way comprising parallel courses of I-beams, rails superposed on said beams and provided with side flanges, and bolts passing horizontally through said flanges and having the heads thereof in engagement with the under side of the upper flange of said beams, substantially as and for the purposes set forth.

2. A railroad-track or permanent way comprising parallel courses of I-beams, tie-rods attached thereto, rails superposed on said beams and secured thereto by means of side flanges, and bolts passing through said flanges and provided with wedge-shaped heads contacting with said beams, substantially as and for the purposes set forth.

3. A railroad-track or permanent way comprising parallel courses of I-beams joined together, tie-rods attached thereto, rails superposed upon said courses and extending over

said joints, side flanges on said rails, and bolts passing horizontally through said flanges and provided with heads contacting with said beams, substantially as and for the purposes set forth.

4. A railroad-track or permanent way comprising parallel courses of I-beams, two series of tie-rods attached, respectively, to the top and bottom of the webs thereof, rails superposed on said beams and secured thereto by means of side flanges and bolts, substantially as and for the purposes set forth.

5. A railroad-track or permanent way comprising parallel courses of I-beams with tie-rods bolted to the respective webs thereof, rails superposed on said beams and provided with flanges, and bolts passing horizontally through said flanges and having the heads thereof in contact with said beams, substantially as and for the purposes set forth.

6. The combination, in a railroad-track or permanent way, of an I-beam, a rail provided with side flanges, and a series of bolts passing horizontally through one of said side flanges and engaging the upper flange of said beam on one side of the web thereof, substantially as and for the purposes set forth.

7. The combination, in a railroad-track or permanent way, of an I-beam, a rail provided with side flanges, apertures in said side flanges having the peripheries thereof above the under side of the upper flange of said beam, and bolts passing through said apertures and provided with wedge-shaped heads contacting with said beam and adapted to be drawn into said apertures, substantially as and for the purposes set forth.

8. The combination, in a railroad-track or permanent way, of an I-beam, a rail provided with side flanges, and a bolt passing horizontally through one of said flanges and provided with a head contacting with said beam, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

LEO BERGMARK.

Witnesses:

THOMAS M. SMITH,
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