No. 780,950. PATENTED JAN. 24, 1905.

W. F. KERLIN.

RAIL TIE.

APPLICATION FILED MAY 21, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

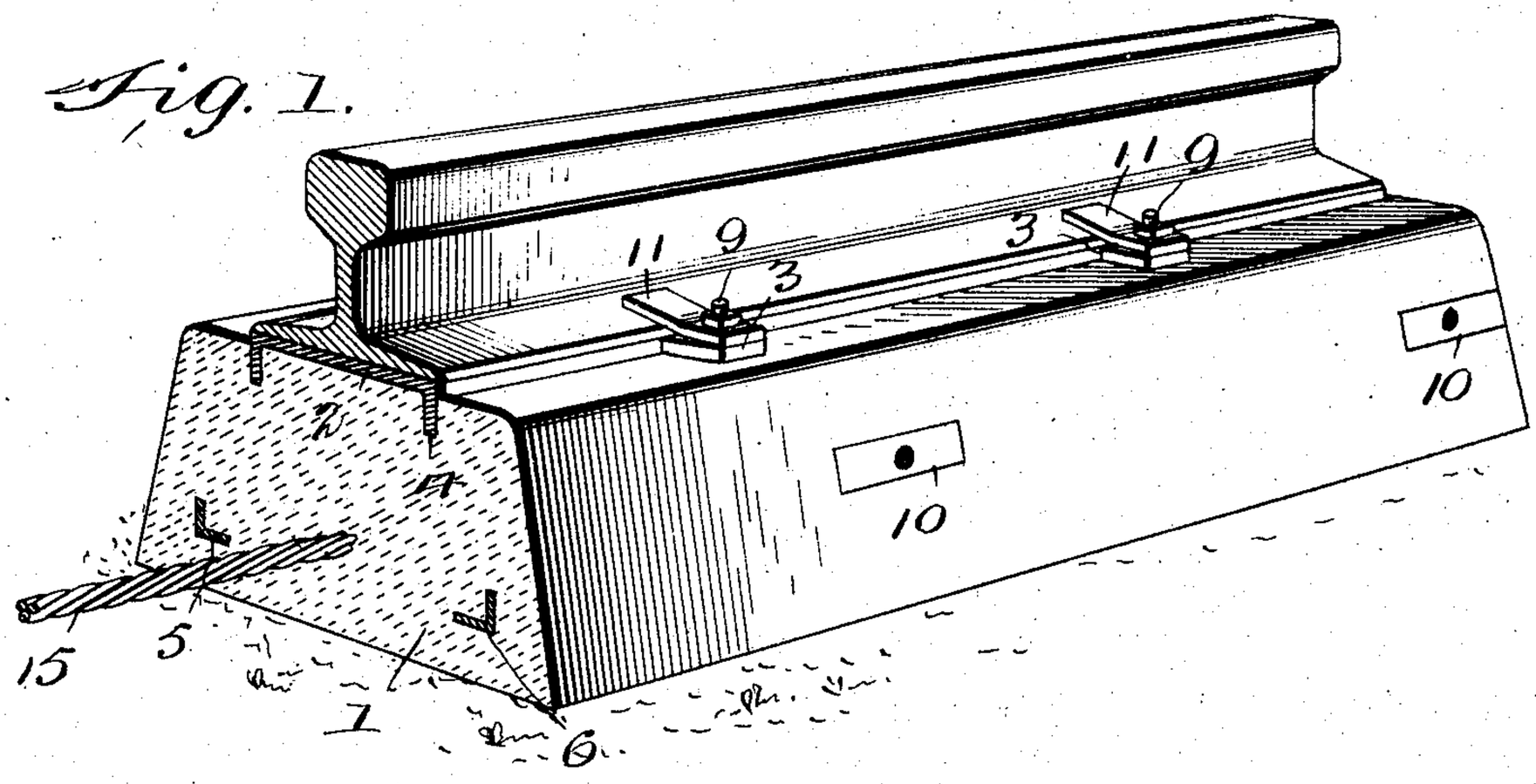
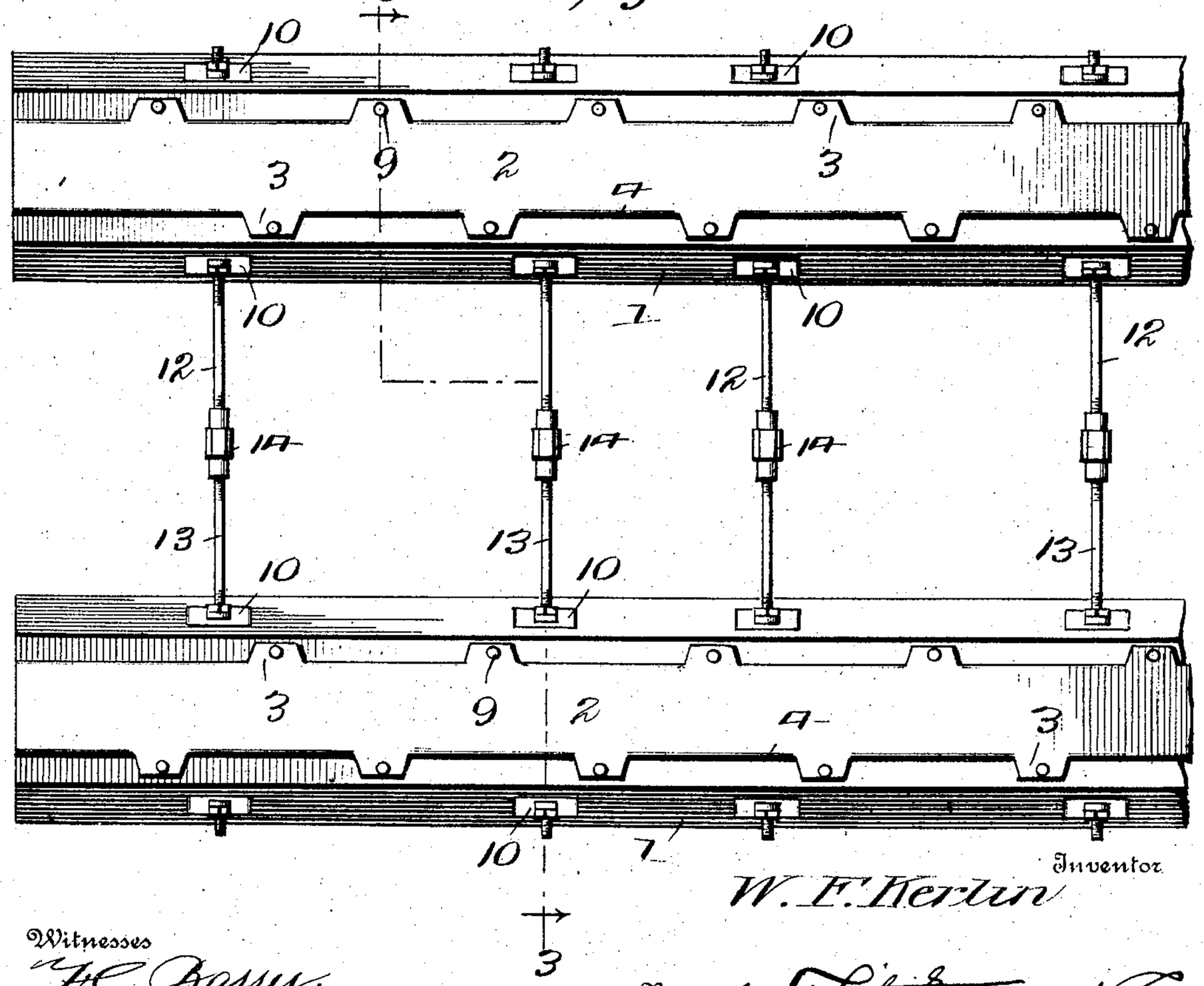


Fig. 2.



Witnesses
F. C. Bailey.
S. W. Fitzgerald.

Inventor
W. F. Kerlin

By W. S. Fitzgerald & Co
Attorneys

No. 780,950. PATENTED JAN. 24, 1905.

W. F. KERLIN.

RAIL TIE.

APPLICATION FILED MAY 21, 1904.

2 SHEETS—SHEET 2.

Fig. 3.

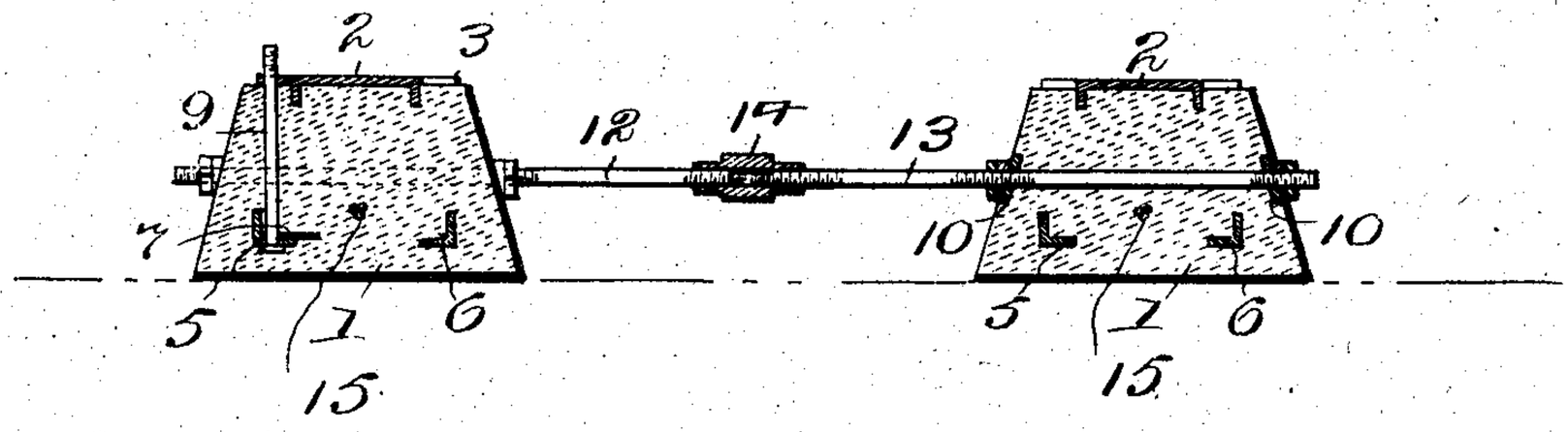


Fig. 4.

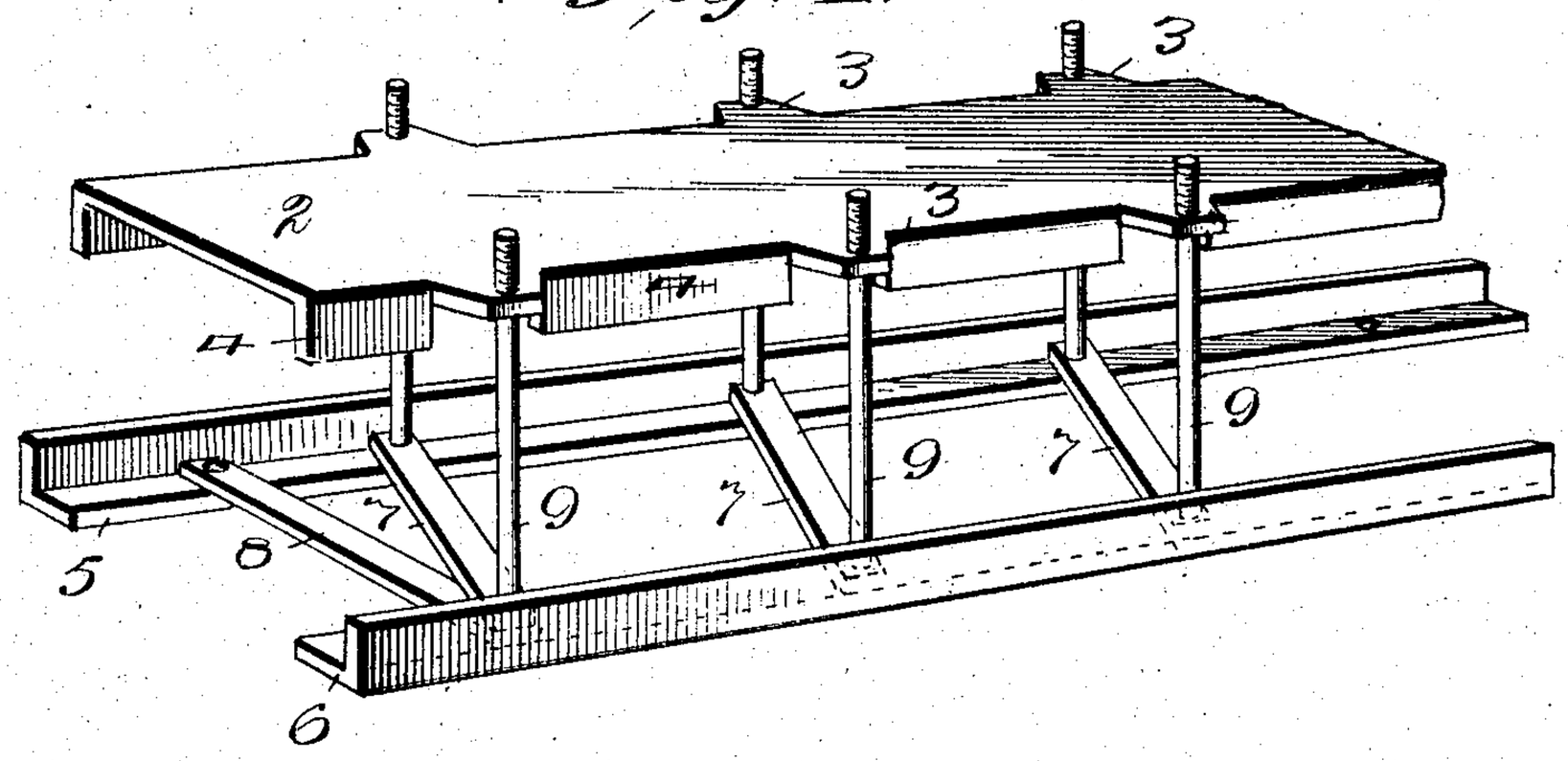


Fig. 5.

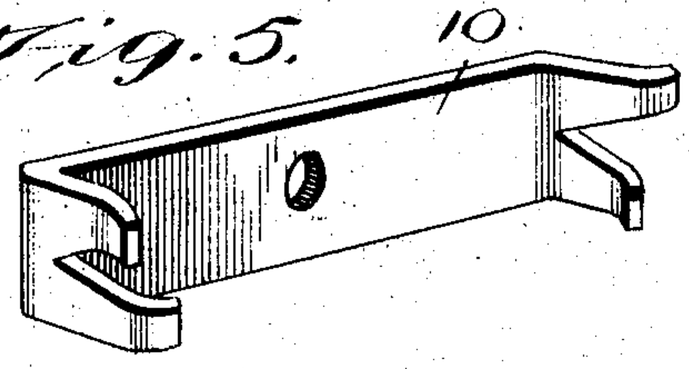
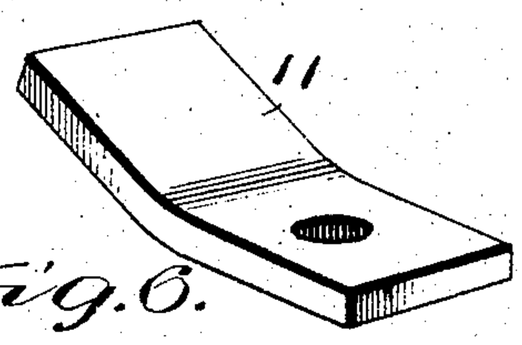


Fig. 6.



Witnesses
F. C. Bassey.
S. W. FitzGerald

Inventor
W. F. Kerlin.
By W. J. FitzGerald & Co.
Attorneys

No. 780,950. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM F. KERLIN, OF ROCKFIELD, INDIANA.

RAIL-TIE.

SPECIFICATION forming part of Letters Patent No. 780,950, dated January 24, 1905.

Application filed May 21, 1904. Serial No. 208,995.

To all whom it may concern:

Be it known that I, WILLIAM F. KERLIN, a citizen of the United States, residing at Rockfield, in the county of Carroll and State of Indiana, have invented certain new and useful Improvements in Rail-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railway-tie construction; and my object is to provide a reliably efficient support for the track-rail, whereby the road-bed when completed will be of very permanent character; and my invention consists of certain novel features of combination and construction of parts, as will be hereinafter clearly pointed out, reference being had to the accompanying drawings, in which—

Figure 1 shows a perspective view of my rail tie or base complete as applied to use. Fig. 2 is a top plan view of a railway-track provided with my rail-supporting appliance. Fig. 3 is a transverse section of Fig. 2 on line 3 3. Fig. 4 is a perspective view of the metallic framework or skeleton, which is designed to be almost wholly incorporated or inclosed by a covering of cement or concrete. Fig. 5 is a perspective detail view of one of the apertured plates designed to coöperate with the adjusting bolts or bars employed for the purpose of securing a proper and true alinement of the supporting-bases for the track-rails, and Fig. 6 is a perspective view of one of the clamping-plates designed to secure the rail to the supporting-base.

It may be stated in this connection that while my improved form of cement tie or base is primarily intended to be placed beneath the track-rails and longitudinally therewith it will also be found useful and efficient when used as an ordinary cross-tie, and therefore disposed in position beneath and transversely to the track-rail. In the present application I shall, however, describe and illustrate my invention as applied as a supporting beam or plate located longitudinally with and beneath the track-rail, the said plates or bases being relatively adjusted in order that the track-rails may have true and proper alinement and be of uniform distance apart to constitute a standard or other form of trackway.

Referring to the various details and coöperating accessories by numeral, 1 designates my base-plate, in which is embedded a metallic skeleton or framework, which consists of the top plate 2 of a width corresponding to the width of the finished base, the said plate 2 being shaped so as to have at certain intervals a plurality of horizontal apertured extensions 3, while intermediate said horizontal extensions are the depending flanges 4, the object of said flanges being to give rigidity to the body of the plate.

The base members 5 and 6 are preferably formed of angle-iron, as shown, whereby a maximum degree of rigidity and strength can be attained consistent with the use of a minimum amount of material. The base members 5 and 6 are held a desired distance apart by means of a plurality of cross bars or plates 7, which are preferably arranged to occupy planes which are oblique relative to the vertical planes of the members 5 and 6, said plates 7 being supplemented at proper intervals by oppositely-disposed coöperating plates 8 for the purpose of adding strength and rigidity to the framework. Suitable apertures are provided in the ends of the plates 7 and 8 and in the members 5 and 6, and when said apertures are brought into registration with each other the vertically-disposed bolts or posts 9 are passed therethrough, the upper ends of said posts being threaded and passed through apertures provided in the horizontal extensions 3 above referred to.

In order to secure the rail to the supporting-base, I provide clamping-plates 11, provided with an opening in one end, which is adapted to take over the threaded end of the post 9 and is secured thereon by means of a suitable nut, while the opposite end of said clamping-plate is slightly bent upwardly and adapted to engage the flange of the rail and hold it securely in cöoperation with the base.

When the parts of my improved framework constructed substantially in the manner specified have been properly assembled,

they are to be secured a proper distance above the bottom of the mold in which the body portion 1, of cement, is to be fashioned, when the plastic material is then introduced, so that it will cover and inclose all parts of the framework excepting the plate member 2, as clearly shown in Figs. 1 and 3, and after the plastic material is hardened to a proper degree the rail-supporting plate or beam is taken out of the mold and ready for use, it being understood that the anchoring-plates 10 are also properly embedded in the sides of the body 1 to receive the threaded portions of the adjusting-rods 12 and 13, the inner ends of which are united together by the coupling or turnbuckle 14, whereby the approximation of the track-rails carried by the beams or plates may be adjusted as desired.

By the construction described it is obvious that the supporting-plate when thus provided with a reinforcement of the metallic framework will be found to be of very reliable character and that even if the portion formed of plastic material should become cracked or broken the parts thereof will still be held in reliable union with each other and will still possess great utility as a support for the track-rails.

By the use of longitudinally-disposed supporting-plates 1 properly reinforced great permanence and strength will be secured and the use of cross-ties as commonly employed may be wholly dispensed with. It is only necessary to properly ballast or cover the sides of the supporting-plates with gravel, broken stone, or the like, as is common.

As an additional means for reinforcing the body portion 1, formed of plastic material, a wire rope or cable, as designated by the numeral 15, may also be disposed longitudinally with the body portion thereof, the said cable being preferably located at a point substantially midway between the plate 2 and the base members 5 and 6.

It will thus be seen that I have provided a reliably efficient form of supporting-base for track-rails which will produce a road-bed of great permanence and reliability, and while I have described the preferred combination and construction of parts I desire to comprehend in this application all such substantial equivalents and substitutes as may be considered as falling fairly within the scope of my invention.

Believing that the advantages, construction, and manner of using my invention have thus been made clearly apparent, further description is deemed unnecessary.

What I claim as new, and desire to secure by Letters Patent, is—

1. A supporting-beam or cross-tie for railways comprising a body portion formed of plastic material, in combination with a metallic reinforcement embedded in the body portion and comprising the top plate 2 and the base members 5 and 6 all properly united and rigidly secured in union with each other, and suitable means to adjust the separation of the body portions whereby the track-rails carried thereby will be uniformly separated, all substantially as specified and for the purpose set forth.

2. A support for railway-rails, comprising a body portion formed of plastic material, in combination with a metallic reinforcement embedded in the body portion and comprising a top plate 2 having depending flanges, base members 5 and 6 formed of angle-irons, a plurality of plates 7 and 8, vertically-disposed bolts 9, and adjusting-rods adapted to receive a turnbuckle at their inner or meeting ends whereby the track-rail, carried by the beam, may be approximately adjusted, as set forth.

3. A support for railway-rails, comprising a body portion formed of plastic material, a metallic reinforcing-frame embedded in said body portion, said frame comprising a top plate 2 and base members 5 and 6 L-shaped in cross-section, posts 9 uniting said plate 2 and members 5 and 6, and means coöperating with the upper ends of said bolts to secure the rail to the support, all combined substantially as set forth.

4. A supporting-beam or cross-tie for railways, comprising the combination with a body portion formed from plastic material, of a metallic reinforcing-frame embedded in the body portion, comprising the top plate 2 having depending sections 4 and horizontal apertured extensions 3, L-shaped base members 5 and 6, means to unite and rigidly secure said base members in union with each other, and vertically-disposed bolts secured to said L-shaped members and extending through the apertured plates 3, and clamping-plates coöperating with the upper ends of said bolts adapted to secure the rail to the cross-tie, substantially as specified and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM F. KERLIN.

Witnesses:
CHAS. W. WRIGHT,
A. F. BARBER.