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E. A. GILLCHRIST.

CROSS TIE AND MEANS FOR HOLDING TRACK RAILS THEREON.

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Fig. 1

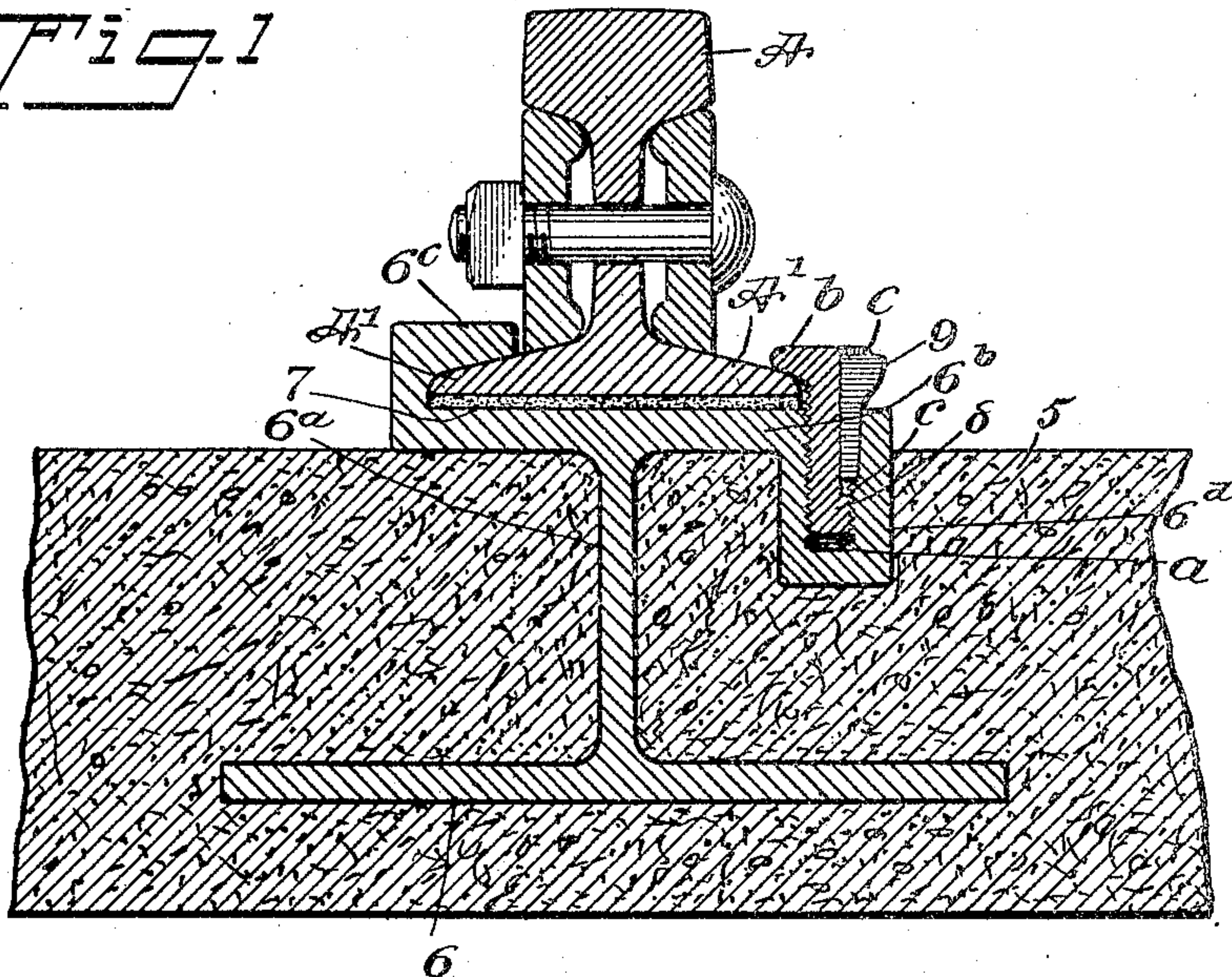
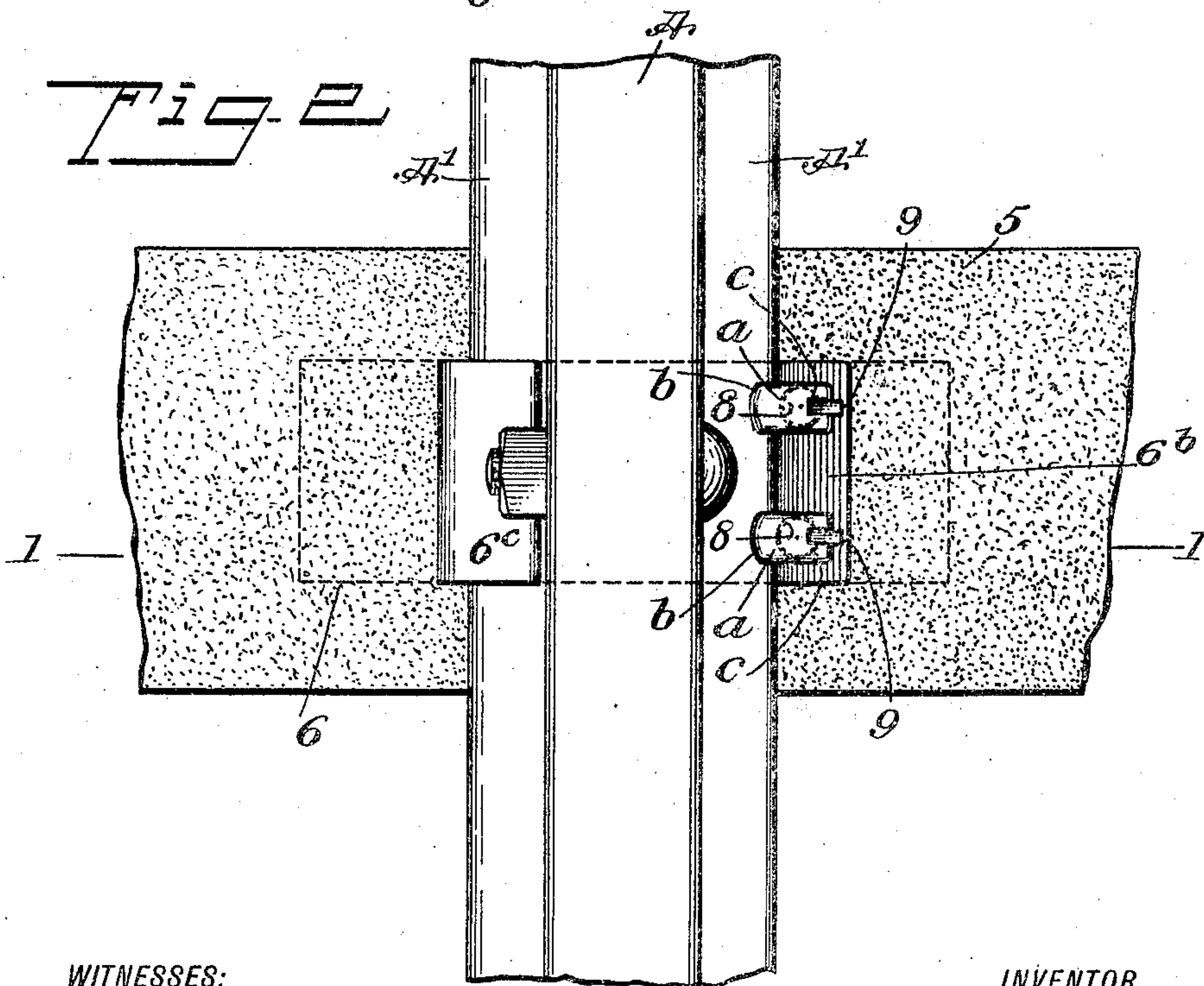


Fig. 2



WITNESSES:

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EDWARD ARTHUR GILLCHRIST, OF McKEESPORT, PENNSYLVANIA.

CROSS-TIE AND MEANS FOR HOLDING TRACK-RAILS THEREON.

No. 813,205.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed August 17, 1905. Serial No. 274,521.

To all whom it may concern:

Be it known that I, EDWARD ARTHUR GILLCHRIST, a citizen of the United States, and a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Cross-Tie and Means for Holding Track-Rails Thereon, of which the following is a full, clear, and exact description.

This invention relates to a class of railroad cross-ties formed of concrete or a similar composition of matter, and has for its object to provide novel details of construction for a railroad cross-tie of the character specified, and for means embodied therewith, that enable the convenient, stable, and secure clamping connection of track-rails that are mounted upon the tie and permit the speedy release of the track-rails and their removal from the tie when this is desired.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a longitudinal sectional view of the tie in part, a track-rail, and the improved means for supporting and clamping the track-rail transversely on the tie, the section being taken substantially on the line 1 1 in Fig. 2; and Fig. 2 is a plan view of the parts shown in Fig. 1.

In the drawings that illustrate the improved cross-tie and the rail supporting and clamping means thereon, 5 indicates the tie-body of conventional form, comprising an elongated rectangular block formed of crushed stone and a suitable cement or of any other plastic composition of a similar nature that when exposed to the air for a time becomes rigid, waterproof, and exceedingly durable.

For the support of the track-rails on the tie-body 5 two similar bracket-stands are provided, each comprising an elongated rectangular anchor-plate 6 of suitable area, upon which is erected a transverse web-plate 6^a, the upper end of the web-plate merging into a base-plate 6^b. The anchor-plate and web-plate of each bracket-stand are embedded in the plastic material composing the tie-body 5 at a suitable distance from the nearest end thereof, the anchor-plate extend-

ing longitudinally in the tie parallel with its upper and lower sides, while the web-plate is disposed transversely and erect therein. The base-plate 6^b is seated upon the upper side of the tie-body 5 when the bracket-stand is molded in said body, as explained, and consists, essentially, of a flat-bottomed plate that is marginally rectangular and extends a distance each side of the web-plate 6^a. At one end of the base-plate 6^b a hook-flange 6^c is formed, which extends across said end and overhangs the upper surface of the same, as is shown at the left in Fig. 1, the lower surface of the hook-flange being sloped toward its free transverse edge, thus adapting said flange to have proper contact with a base-flange A' on the track-rail A, as is shown in said figure. Integrally on the opposite end of the base-plate 6^b a depending flange or anchor-block 6^d is formed, which is embedded in the body of the tie, as shown in Fig. 1, when the bracket-stand is placed in position thereon. Two screw-threaded perforations *a* are formed in the flange-block 6^d, extending therinto from the upper surface of the same, which is preferably level with the top surface of the base-plate 6^b, one of said perforations appearing in Fig. 1. The upper surface of the base-plate 6^b receives the base portion of a track-rail A, before mentioned, and that may be a T-rail of suitable dimensions for a seated engagement with the base-plate.

Between the base-flanges A' on the track-rail A and the base-plate 6^b a layer of felt cloth 7 or similar slightly-elastic material is preferably introduced, which serves as a shock-absorber and lessens the jar incidental to the traverse of rolling-stock over the track-rails A, that are in position on the improved cross-ties. In the threaded and spaced perforations, such as *a*, two keeper-bolts 8 8 are screwed, these similar bolts each having an offset head *b* thereon, that is sloped on the lower side for effective engagement with the upper side of an adjacent rail base-flange A', near the free edge of said flange. Each keeper-bolt 8 is longitudinally-grooved from the headed end toward the threaded end. Said groove *c*, that is positioned opposite the overhanging head *b*, receives a wedge-shaped key 9 when the keeper-bolt is in position for service. It will be seen that if a plurality of the improved cross-ties are placed for support of track-rails A on the bed of a road and the upper surfaces of the base-plates 6^b are

about level with each other the base-flanges A' on the track-rails A may be hooked under the flanges 6^c after the track-rails are seated upon the felt cushions 7. The keeper-bolts 8 for each tie are now screwed down into the threaded perforations, such as *a*, until the offset heads *b* on said bolts bear forcibly upon the base-flanges A' of the track-rails A. The keys 9 are now driven into respective grooves *c*, which will prevent the keeper-bolts from turning and adapt these bolts to hold the track-rails in position on the cross-ties.

It will be seen that the special construction of the bracket-stands employed and the embedment of the anchor-plate and web of each stand in the body of the tie below the base-plate that receives and supports a track-rail affords a base for the track-rail within the tie conducing to durability of said tie.

It is claimed for the improved cross-tie that it will support the heaviest load strain ordinarily imposed on the track of a railroad without fracture or crushing, that it is not injured by contact with the ground, is not affected by frost, is otherwise very durable, and that the improvement can be manufactured at a moderate cost.

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

1. The combination with a tie-body formed of concrete or the like, of two bracket-stands each comprising an anchor-plate of considerable area, a transverse web-plate erected on the anchor-plate, a base-plate on the upper end of the web-plate, an overhanging abutment-flange at one end of the base-plate, an anchor-block depending from the other end of the base-plate, and offset headed bolts screwing into threaded perforations in the anchor-block.

2. The combination with a tie-body formed

of concrete or the like, of two metal bracket-stands, each comprising an oblong rectangular anchor-plate, a transverse web-plate erected on the anchor-plate near its center, a base-plate on the upper end of the web-plate, an overhanging abutment-flange at one end of the base-plate and spaced therefrom, an anchor-block formed transversely on the opposite end of the base-plate and depending therefrom, said block having threaded perforations therein, offset headed screw-bolts engaging the threaded perforations, said bolts having a longitudinal groove in each one, and a key engaging each groove and adapted to hold the bolt from turning.

3. The combination with a tie-body formed of concrete or the like, and with a track-rail, of a metal bracket-stand for support of the track-rail, comprising an oblong anchor-plate, a web-plate erected on the anchor-plate, a base-plate on the upper end of the web-plate, said base-plate seating on the tie-body and the web and anchor-plates embedded therein, a transverse hook-flange on one end of the base-plate, said flange hooking upon the base-flange of the track-rail along one side edge thereof, an anchor-block depending from the other end of the base-plate, keeper-bolts having offset heads and screwing into tapped perforations in the anchor-block, and keys engaging grooves in the keeper-bolts for holding said bolts from turning.

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

EDWARD ARTHUR GILLCHRIST.

Witnesses:

EDGAR L. MAY,
B. M. SHARP.