No. 711,277.

Patented Oct. 14, 1902.

W. J. BELL.

CEMENT RAILROAD TIE.

(Application filed June 21, 1902.)

(No Model.)

2 Sheets—Sheet 1.

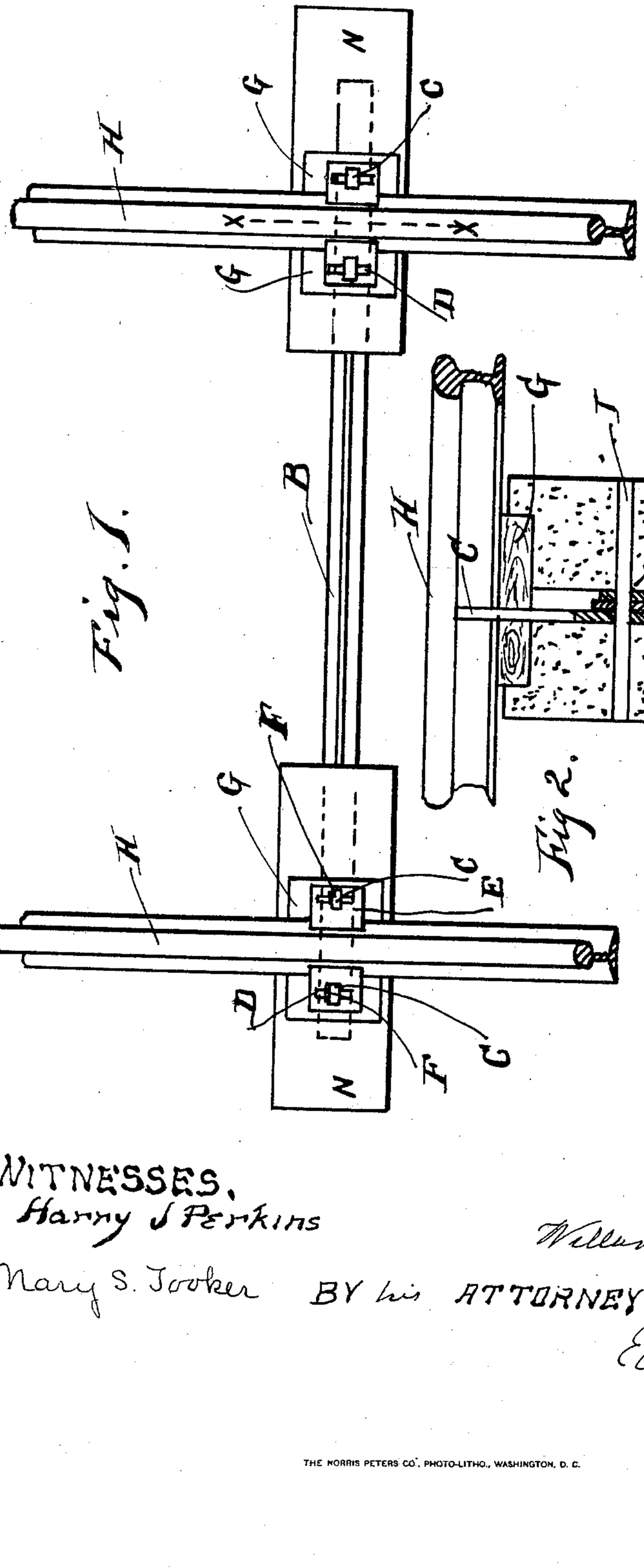

Fig. 1.

Fig 2.

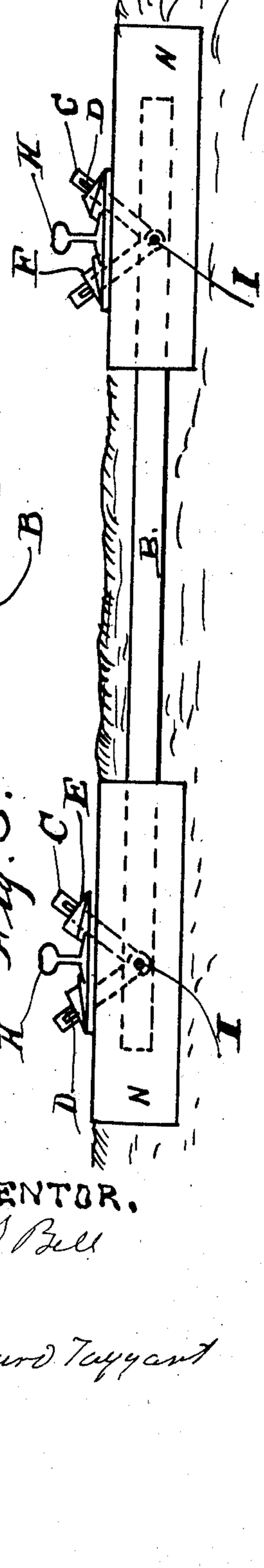

Fig. 3.

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Fig. 4.

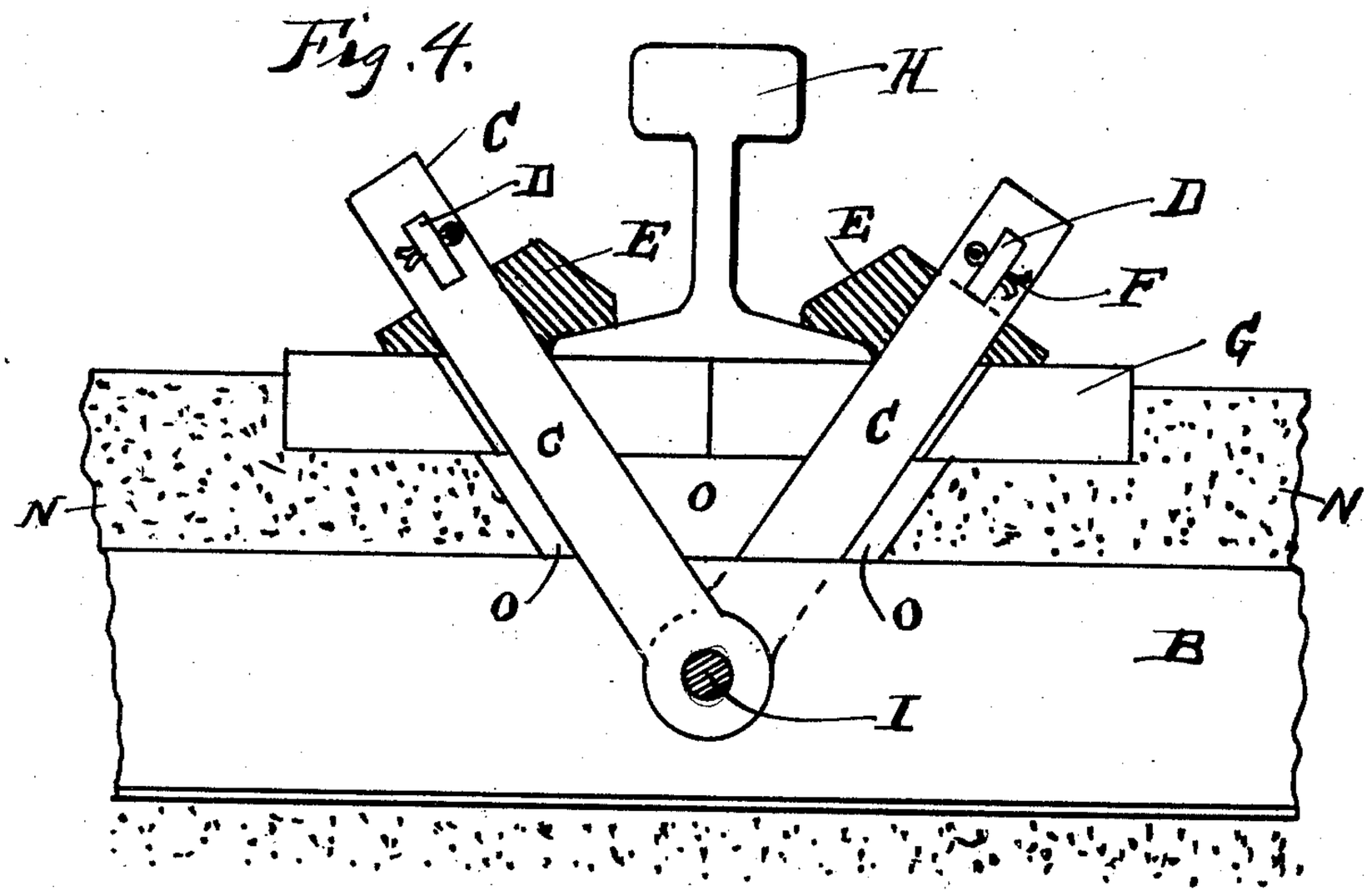
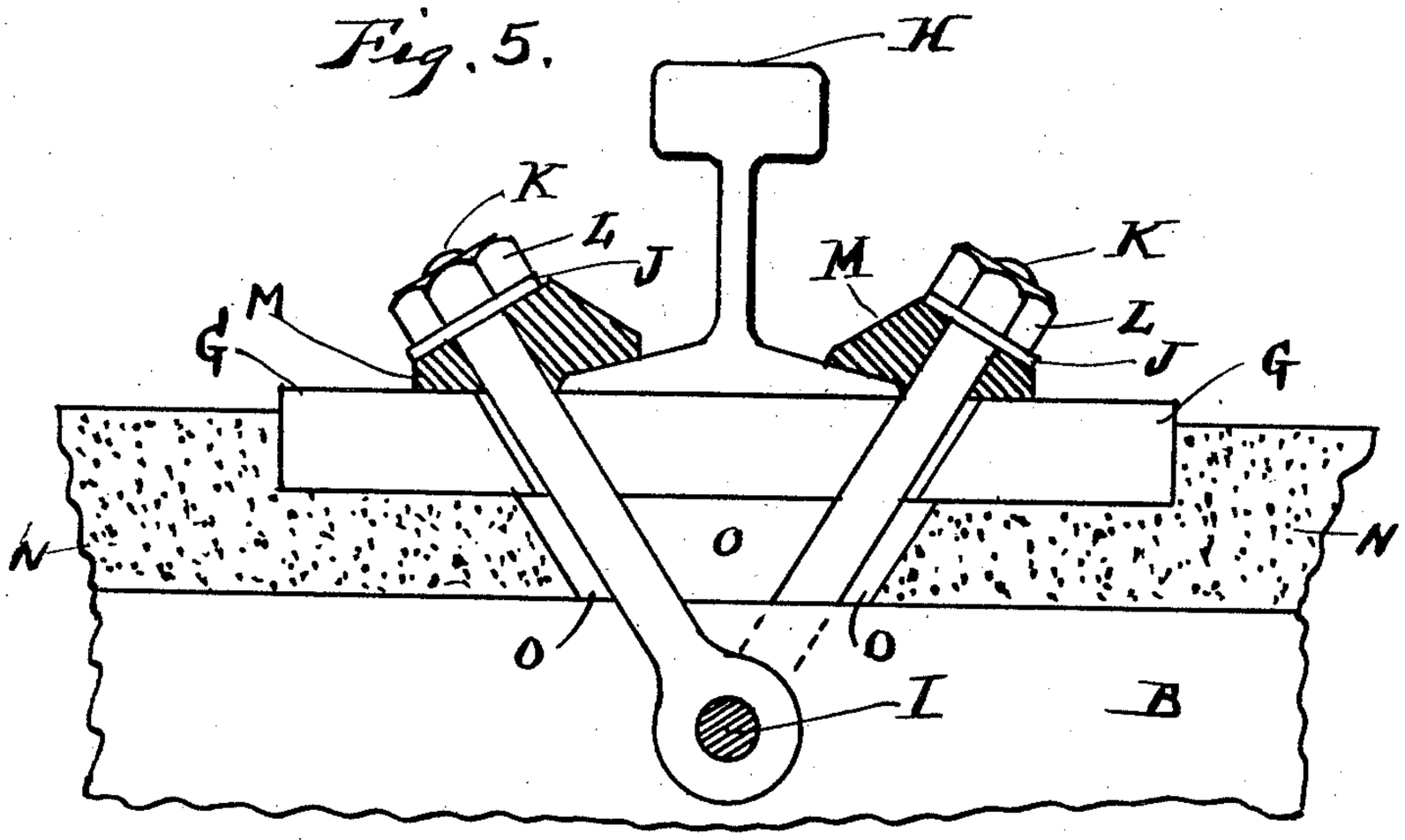


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CEMENT RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 711,277, dated October 14, 1902.

Application filed June 21, 1902. Serial No. 112,651. (No model.)

To all whom it may concern:

Be it known that I, WILLARD J. BELL, a citizen of the United States, residing at Newaygo, in the county of Newaygo and State of Michigan, have invented new and useful Improvements in Cement Railroad-Ties, of which the following is a specification.

This invention relates to a new and useful cement tie for railroads; and the invention consists in the combination of the cemented portion with a tie-beam constructed substantially as hereinafter described and also consists in the construction and arrangement of parts hereinafter described and claimed.

The objects of the invention are, first, to furnish a railroad-tie made substantially of cement and metal combined in such a manner that the railroad-tie will not break or become distorted; second, to produce a mechanism which will allow the clamping portions to be readily removed and replaced for the purpose of repair; third, other objects hereinafter described and claimed. These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a plan view of a railroad-tie constructed in accordance with my invention for retaining two rails in position. Fig. 2 is a transverse sectional view of the tie on line X X of Fig. 1. Fig. 3 is a side elevation of a tie constructed in accordance with my invention, showing the position of the tie when embedded in the road-bed and supporting the rails, the dotted lines showing the position of the binding-links. Fig. 4 shows a longitudinal sectional view through the cement part of the railroad-tie just at one side of the binding-links, the same being shown on an enlarged scale and illustrating my preferred form. Fig. 5 shows a view similar to Fig. 4, but with a modified form of the binding-links and clamping device.

Similar letters refer to similar parts throughout the several views.

B represents a metallic tie-beam which is constructed in the shape of an inverted T. The ends of this tie-beam are embedded in the cement blocks, and the flanged portion of the tie-beam is provided with an opening for the reception of the bolt I, hereinafter described.

C C are binding-links, being pivotally attached to the flange of the tie-beam by means of the bolt I. These links extend outwardly, as shown in Figs. 3, 4, and 5, and are provided at their upper or free ends with a collar or ring, which serves as a support for the upper ends of the links and also furnishes means for retaining the rail in position.

In my preferred form the rings are shown by E E, which rest upon the upper surface of the flange of the rail H and also upon the wooden cushion-block G, as shown in Fig. 4. The rings E E are each secured in position by means of a key D, which passes through an opening in the binding-link C, and as a further security I provide a spring-lock F, which can be readily removed and replaced.

G G represent wooden blocks which act as cushions between the rail H and the cement portion N of the tie. The bolt I, which secures the lower ends of the binding-links C C to the flange of the tie-beam B, is so constructed that it can be readily removed and replaced.

In the modified form shown by Fig. 5 the binding-links are shown by K K, each link being provided at its upper end with a screw-thread with which engage the nuts L. The clamping-rings are shown by M M. Each clamping ring or collar rests when in place upon one of the flanges of the rail H and also upon the wooden block G, as shown.

When the form shown in Fig. 5 is used, I prefer to use a washer J between the nut L and the ring M. By tightening the nuts K K the rings or collars M M are drawn securely down, so as to bear upon the wooden block G and upon the flanges of the rail H, retaining the rail securely in position and also retaining in position the wooden block G upon the cement body N. In order that the parts may be readily removed, I provide an open space through that portion of the cement body which is above the pivotal points of the binding-links, as shown by O O in Figs. 4 and 5. This space should be large enough to allow the links to be taken out when the bolt I is removed. By taking off the nuts L the rings or collars M may be removed, which relieves the rail H, and then the binding-links K K may be readily removed and replaced.

In the construction shown in Fig. 4 the keys D D would be removed and afterward

the rings E E. By then removing the bolt I not only the binding-links C C but the wooden block G could be removed, if desired. By this construction any of the parts used for attaching the rail may be removed and replaced, and in case any one of these parts becomes worn or broken a new part can be readily supplied. By this construction also it will be noted that the binding-links will adapt themselves to the size of the flanges on different rails to a certain extent.

By the use of the peculiar-shaped tie-beam the cement portions of the tie are held in position on the road-bed and there will be no cracking or breaking of the cemented portion. The form of the tie-beam also furnishes an easy and efficient method of attaching thereto the binding-links.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. In a railroad-tie the combination with a cement body of a metallic tie-beam having an upwardly-extending flange, a pair of binding-links at each end of the railroad-tie pivotally connected to the flange of the tie-beam, a collar or ring for each binding-link bearing on the flange of the rail and suitable means for clamping the said collar or ring upon said rail.

2. In combination with a cement railroad-tie a metallic tie-beam having an upwardly-extending flange, a pair of binding-links pivotally connected to the said flange, a wooden cushion-block resting upon the cement portion of the tie, a ring or collar for each binding-link, each of the said rings or collars bearing upon the flange of the rail and also upon the wooden cushion-block, and suitable means for clamping the collar or ring upon the flange of the rail and upon said wooden block.

3. In combination with a metallic tie-beam having an upwardly-extending flange, two separate cement blocks, one at either end of the said tie-beam, a pair of binding-links for each of said cement blocks, an opening O in each of said cement blocks through which said binding-links pass, a pivotal attachment securing the binding-links to the upwardly-extending flange of the tie-beam, a collar for each of the said binding-links, each of said collars bearing upon the flange of the railroad-rail and also upon the wooden cushion-block carried by the cement block M, and suitable means for securing the said ring or collar in place so as to clamp said rail and cushion-block, substantially as described.

4. In combination with a metallic tie-beam having an upwardly-extending flange a pair of binding-links pivotally connected to the flange of said tie-beam, a cement block in which the said tie-beam is embedded, an opening O in the said cement block, through which said binding-links pass, a ring or collar for each of the said binding-links, said ring or collar resting upon a flange of the railroad-rail, and suitable means for securing said ring or collar in position, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLARD J. BELL.

Witnesses:

CHARLES M. WILSON,

EDWARD TAGGART.