

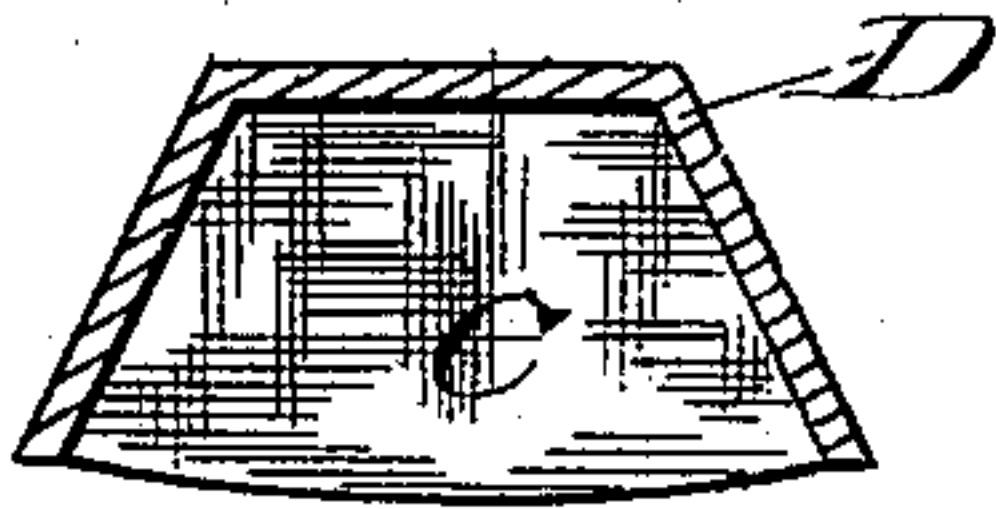
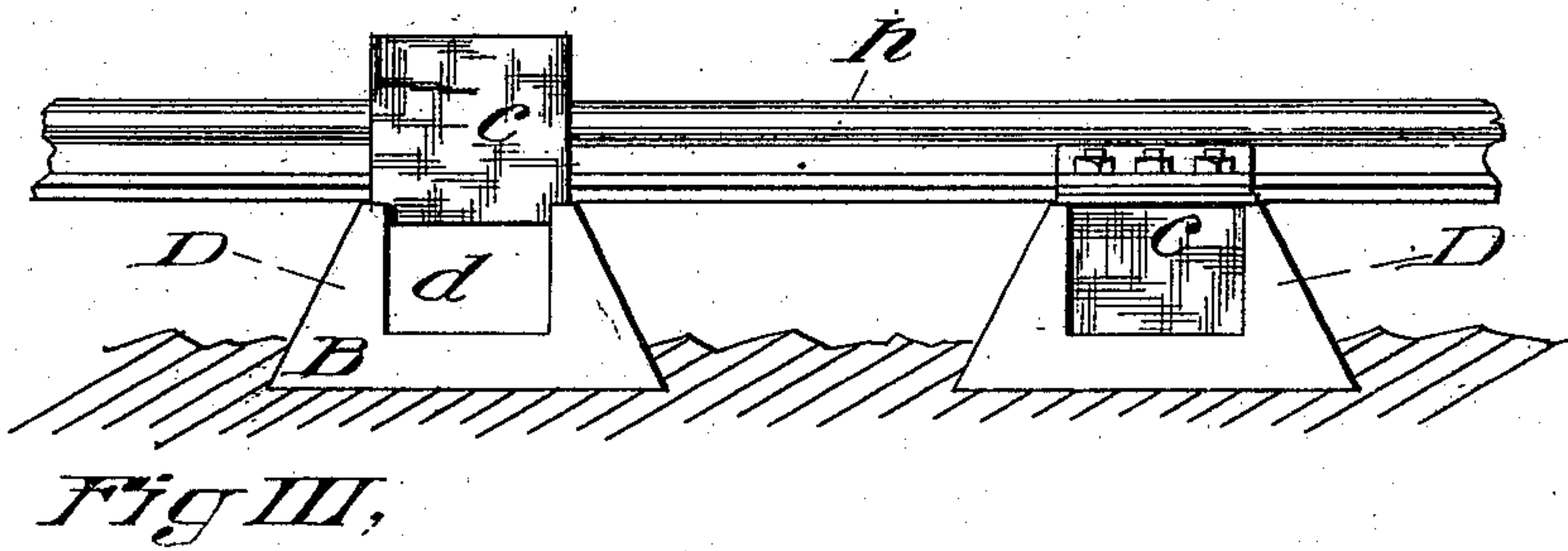
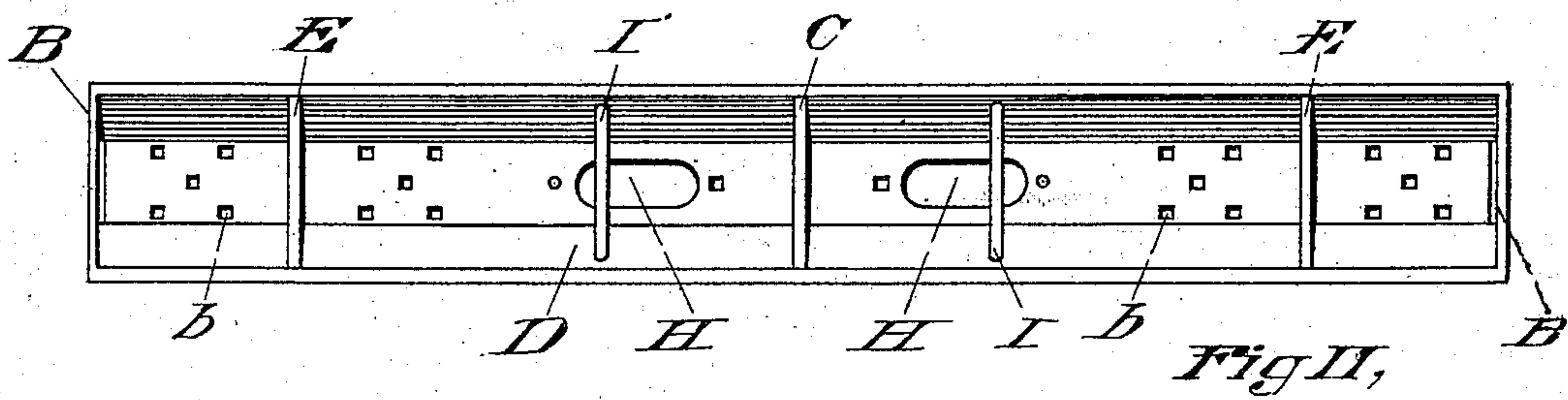
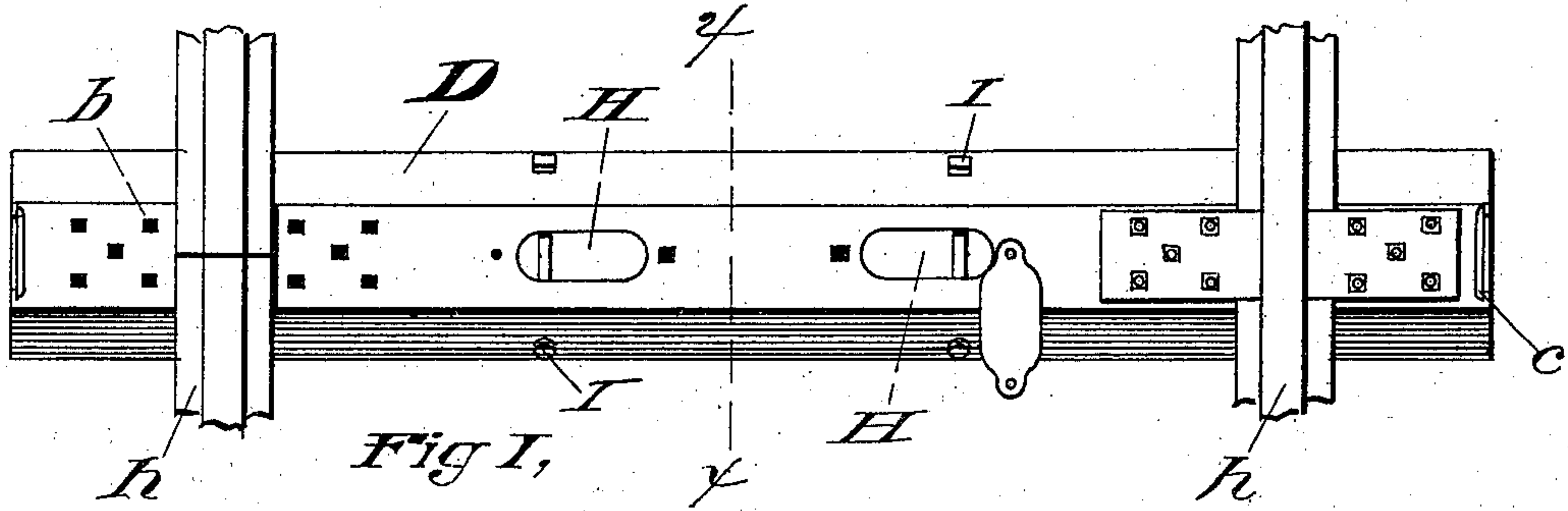
No. 695,433.

Patented Mar. 18, 1902.

V. E. BARNES.
METALLIC RAILROAD TIE.

(Application filed Dec. 27, 1900. Renewed Aug. 24, 1901.)

(No Model.)



Witnesses,
Joseph Springer
George A. Gennell

Inventor,
Vincent E. Barnes
By his attorney
R. E. Hyde

UNITED STATES PATENT OFFICE.

VINCENT E. BARNES, OF WESTFIELD, MASSACHUSETTS.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 695,433, dated March 18, 1902.

Application filed December 27, 1900. Renewed August 24, 1901. Serial No. 73,146. (No model.)

To all whom it may concern:

Be it known that I, VINCENT E. BARNES, a citizen of the United States, residing at Westfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Metallic Railroad-Ties, of which the following is a specification.

My improvements relate to the construction of a metallic railroad-tie in the form of a shell, providing a firm seat for the rails, providing means for combining with it the chairs for seating the rail-joints and fish-plates and fastenings intermediate to the joints interchangeably, and adapted to be made, in effect, an integral part of the road-bed, so as to be guarded against any displacement laterally or longitudinally; and the invention consists in the combination and arrangement as hereinafter described, and more particularly pointed out in the claims.

My invention is fully illustrated in the accompanying drawings, in which—

Figure I is a top plan view of my tie seating-rails, and showing the plates at one end for securing the rails removed. Fig. II is a plan view of the tie interior. Fig. III is an end view of two ties in position upon the road-bed, one of which has its end gate open and the other showing the gate closed; and Fig. IV is a transverse section of the tie on the dotted line *x x* of the Fig. I and showing the partition therein.

Referring to the drawings, D is the tie in the form of a metallic shell, having the thickness approximately of boiler-iron and presenting a flat top as a rail-seating surface, downward-extending diverging sides forming with the top, as shown in Fig. IV in cross-section, a truncated triangle, closed ends B, and an open bottom. The tie D is also provided with transverse partitions E E and C joined to its three sides, with openings H H through its top wall and located upon each side of the central partition C, for a purpose hereinafter described, with transverse stay-bolts I I extending from side to side, and with squared bolt-holes *b* for receiving the squared shanks of bolts securing the fish and other plates to the top of the tie.

The closed ends B of the tie are provided

with openings *d* and vertically-sliding gates *c* for closing said openings.

The tie D may have its three sides formed by being rolled from a sheet to leave end flaps, which are bent to form the ends of the tie, being riveted to the side with which they are not integral, and in this case the partitions E E and C are also riveted to the walls of the tie, or the tie may be cast or by suitable machinery drop-forged to form the ends and partitions, as shown in the drawings, integral with the tie sides. While the ends and partitions resist any tendency of the sides to approach each other from superimposed weight and also act to restrain the side walls from being crushed apart, the reinforce of the stay-bolts, arranged as shown in Figs. I and II, effectually prevents the side walls from being distorted under weight.

Although the shell shown, stayed and tied and with closed ends, would be a strong structure to support weight if left empty to rest upon the surface of the road-bed, I still further add to its stability when it is placed in its position in the road-bed, and the rails *h* are bolted to it, by, through the openings *d* in the ends and openings H H in the top, provided for the purpose, tamping it full of the same material of which the road-bed is composed, whether of earth or of stone ballast, and this filling is driven in by a sledge-hammer and the tamping-tool until it is, in effect, an integral part of the road-bed. It will be seen that the partitions H H and C, thus practically embedded in the road-bed, will resist any longitudinal movement or creeping of the tie and that the tie will be, by being so filled, immeasurably strengthened.

The tie when it has its filling rammed in has the doors *m*, one of which is shown in Fig I, closed, and the gates by which the filling is placed in the end compartments of the tie are also closed, as shown in Fig. III, to retain the filling from working out.

The bolt-holes *b* in the top of the tie are formed square to receive the squared shanks of bolts and prevent the bolts from any rotation while the nuts coming against the plates are being run on their free ends, and one function of the holes H H and *d* is to permit the hand to be passed into the tie to in-

sert the rail-holding bolts before the filling is tamped in.

In the drawings it will be seen that the partitions E E are placed directly under the rails and where the strain from the weight will be in consequence the greatest, and the disposition of the holes H H is such as to give access to the bolt-holes on one side of the rail and permit one compartment to be filled on each side of the central partition, while provision is made for filling the end compartments through the holes in the end of the tie.

A tie of this construction is simple and strong and can be inserted at any point in the road-bed to take the place of any wooden tie in common use which it may be desirable to remove, and the bolt-holes b fit interchangeable plates for securing all parts of the rail, and which plates may be combined with the tie and rail in less time than said fastenings require to be spiked to the ordinary wooden tie.

Now having described my invention, what I claim is—

1. The within-described metallic railroad-tie, comprising a hollow shell with flat top and flaring sides, closed ends, transverse partitions disposed one centrally and one under each rail, openings in the top on each side of the central partition, with openings in each end of the tie and provision for closing said openings—and squared bolt-holes through the top accessible from the end and top openings, all combined and operating as and for the purpose set forth.

2. The railroad-tie, adapted to be filled by tamping, and comprising a hollow shell with open bottom, flat top, flaring sides and closed ends, provided with a plurality of compartments formed by transverse partitions, two of which are located under the rails; and with end and top openings for inserting the filling, with means for closing said openings.

VINCENT E. BARNES.

Witnesses:

R. F. HYDE,
PEIRRE TYLER.