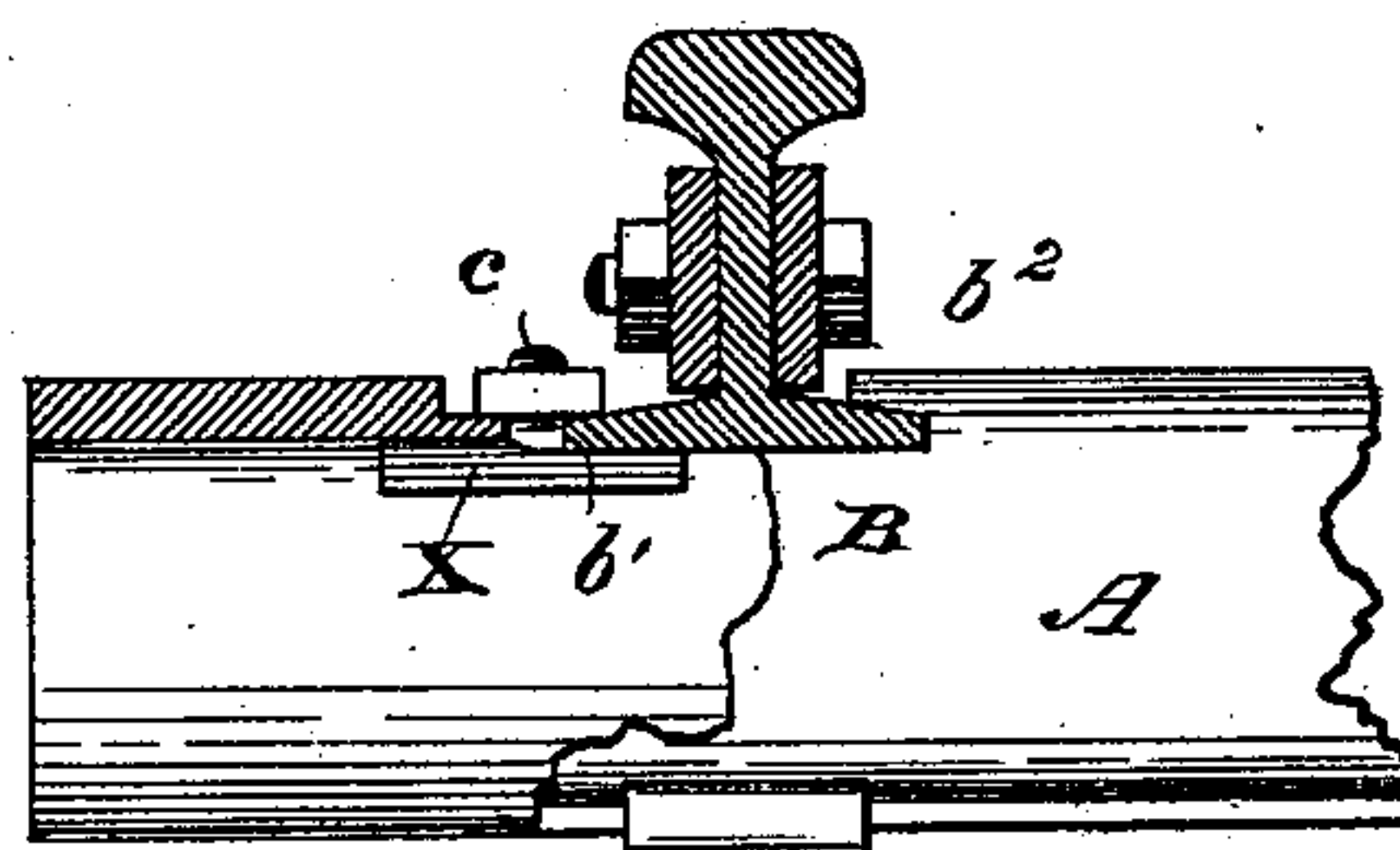
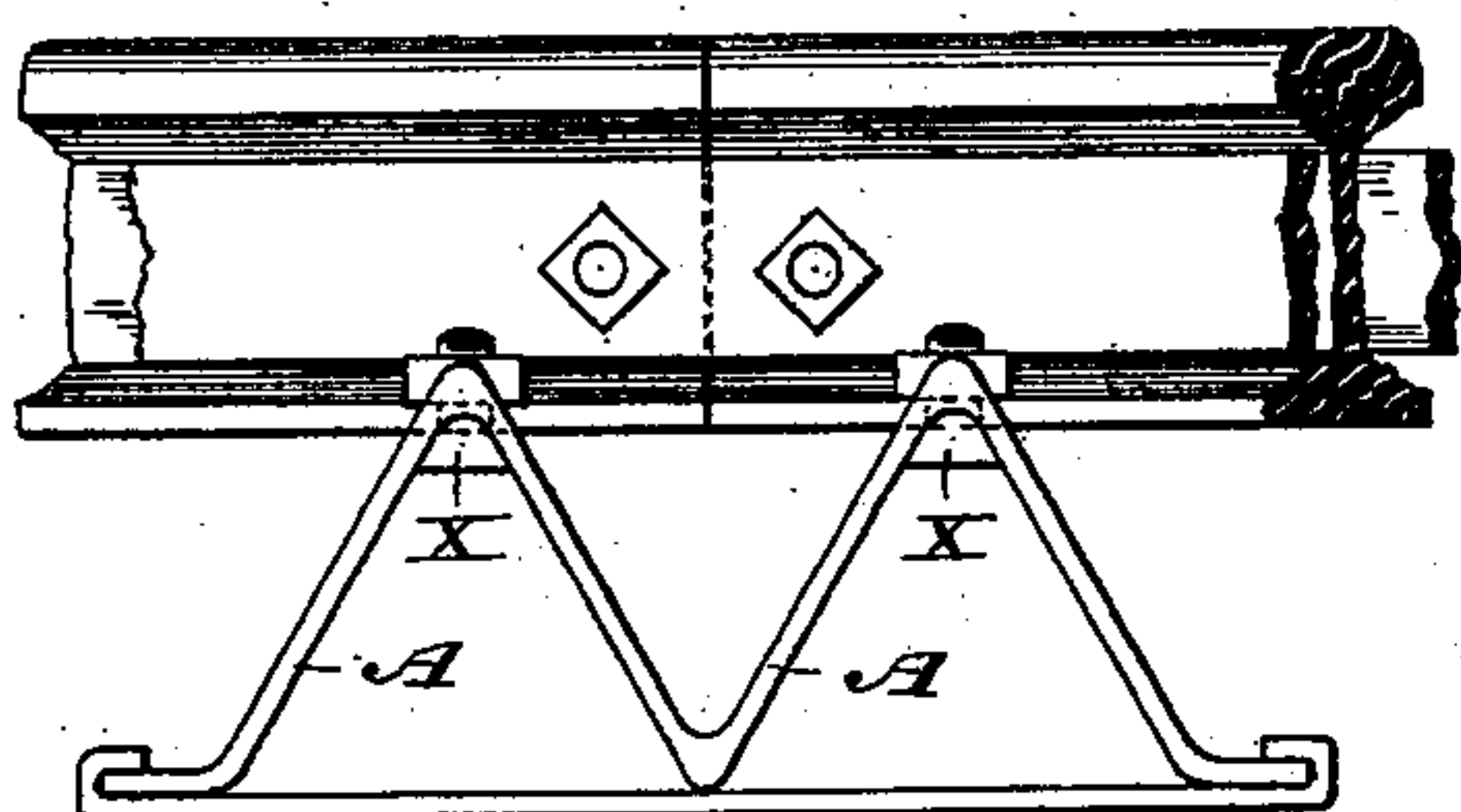
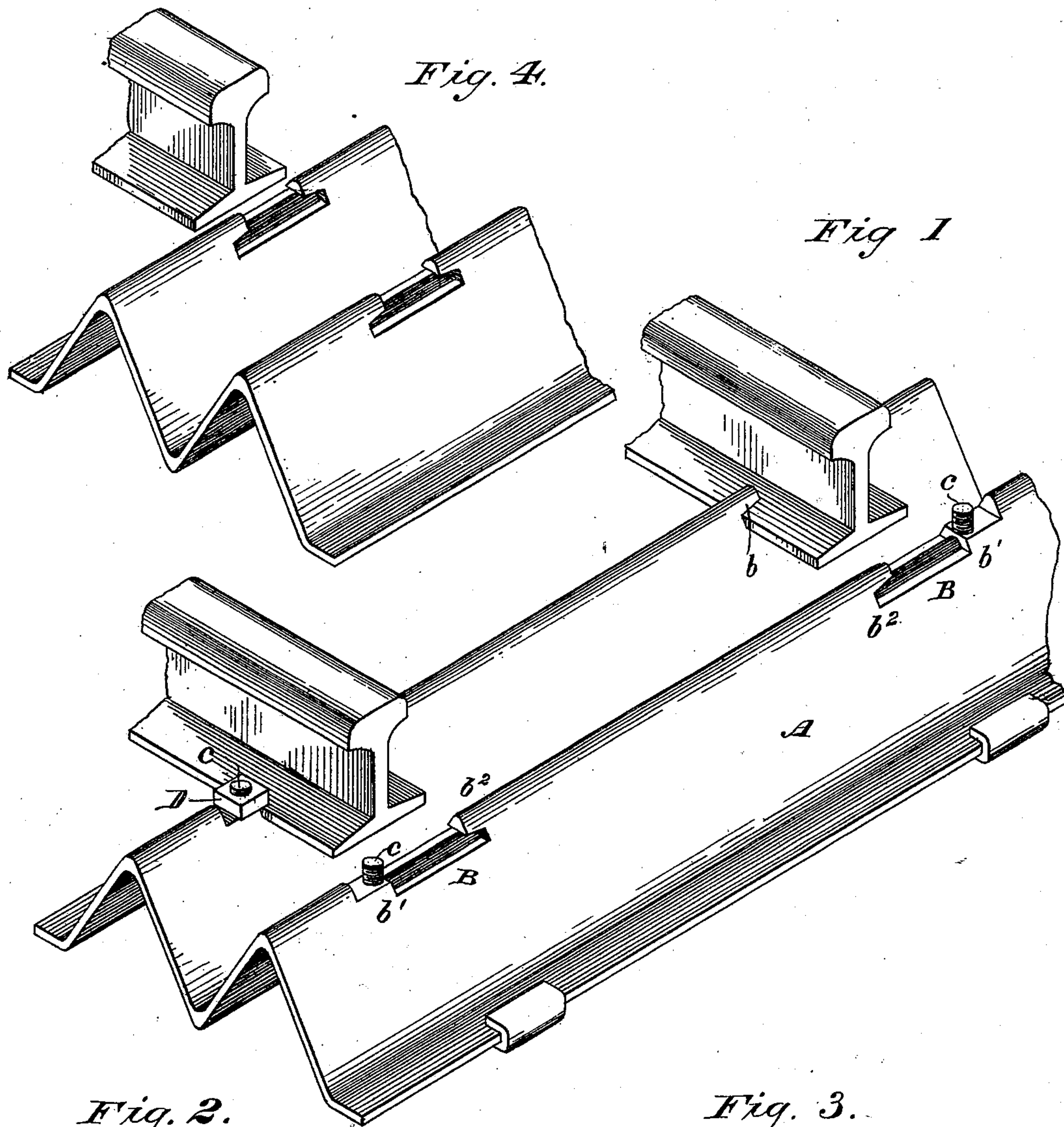


(No Model.)

D. S. WHITTENHALL.
Railroad Cross-Tie and Rail-Fastening.
No. 227,602. Patented May 11, 1880.



WITNESSES

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UNITED STATES PATENT OFFICE.

DANIEL S. WHITTENHALL, OF DENVER, COLORADO.

RAILROAD CROSS-TIE AND RAIL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 227,602, dated May 11, 1880.

Application filed April 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, DANIEL S. WHITTENHALL, a citizen of the United States, and a resident of Denver, in the county of Arapahoe, in the State of Colorado, have invented certain Improvements in Railroad Cross-Ties and Means of Securing Rails to them, of which the following is a specification.

My invention relates to the corrugated metallic railroad cross-tie for which Letters Patent No. 185,808 were granted me December 26, 1876, which patented tie consists of a single piece of metal corrugated in the process of manufacture, and provided with fitting transverse slots or apertures near its opposite ends for receiving and seating the track-rails.

Figure 4 of the accompanying drawings shows a perspective view of one end of a cross-tie provided with a series of transverse apertures for seating the rails and a section of a rail in position to be slid into the apertures endwise and seated upon the tie, according to said patent.

The plan of securing the rails to the ties by sliding the ties onto the rails, or sliding the rails into the tie-slots, in order to lay the track, and then of drawing the rails out endwise, or sliding the ties off the rails, in order to take up the track, as illustrated in Fig. 4, and as contemplated in said patent, is attended with great inconvenience in practice, and it is the object of my present improvement to overcome this difficulty. I therefore provide an improved form of slot in the cross-tie, shaped as illustrated in Fig. 2—that is to say, oblique or V-shaped at only one end and right angular at the other end—which enables me to lay the rails in place readily, and when there I secure them, by means of a bolt and nut, upon the right-angular end of the slot, while the V-shaped end of the slot holds the base-flanges, as shown in said patent.

The metal point of the V-shaped slot end can be struck down upon the flange of the rail, if desired, when the tie is made of wrought metal.

Fig. 1 of the accompanying drawings, illustrating my present invention, shows a perspective view of my improved tie and fastening appliances. Fig. 2 is a side elevation of a rail in place and an end elevation of my tie; and Fig. 3 is an end view of a rail in place and of a tie, partly in section.

A indicates a corrugated metallic tie provided with slots B, right angular at b' and oblique or partly V-shaped at b^2 , and provided with bolts c . In this case the bolt is riveted or otherwise permanently secured to the rib of the tie, and provided with the nut D.

In Figs. 2 and 3 I show the bolt detachable from the tie and provided with an elongated bolt-head, X. In this latter case the bolt is applied from the under side of the rib of the tie, as will be apparent from the drawings.

This plan of securing the rails has all the advantages of security and durability of the one disclosed in my said patent, and, in addition thereto, very greatly facilitates the laying of the track and the removal or exchange of rails, which latter can be done, when my present improvement is employed, without disturbing the tie or the earth in which it is embedded, by simply unscrewing the nut, leaving the bolt in its place, tilting up the outside of the rail, and sliding it out of its seat.

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

1. The corrugated cross-tie provided with the rail-seating slot oblique or V-shaped upon one side and right-angular upon the other, substantially as specified.

2. The combination of the corrugated cross-tie, slotted as described, the rail, and the fastening-bolt and nut, all substantially as specified.

DANIEL S. WHITTENHALL.

Witnesses:

J. W. ANDERSON,
W. S. CARTER.