

(No Model.)

D. C. HELLER
RAILWAY CROSS TIE.

No. 370,192.

Patented Sept. 20, 1887.

Fig. 1.

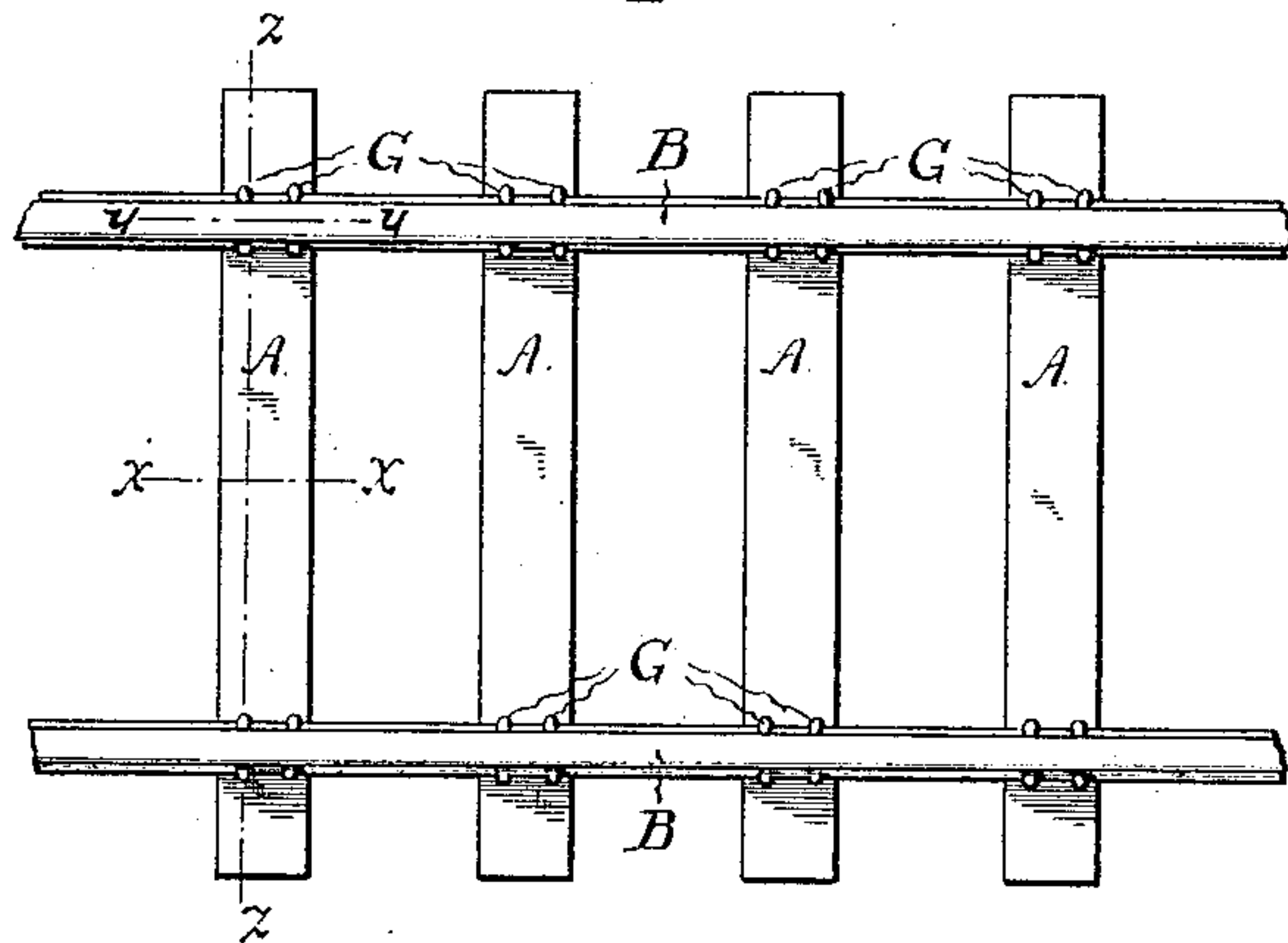


Fig. 2.

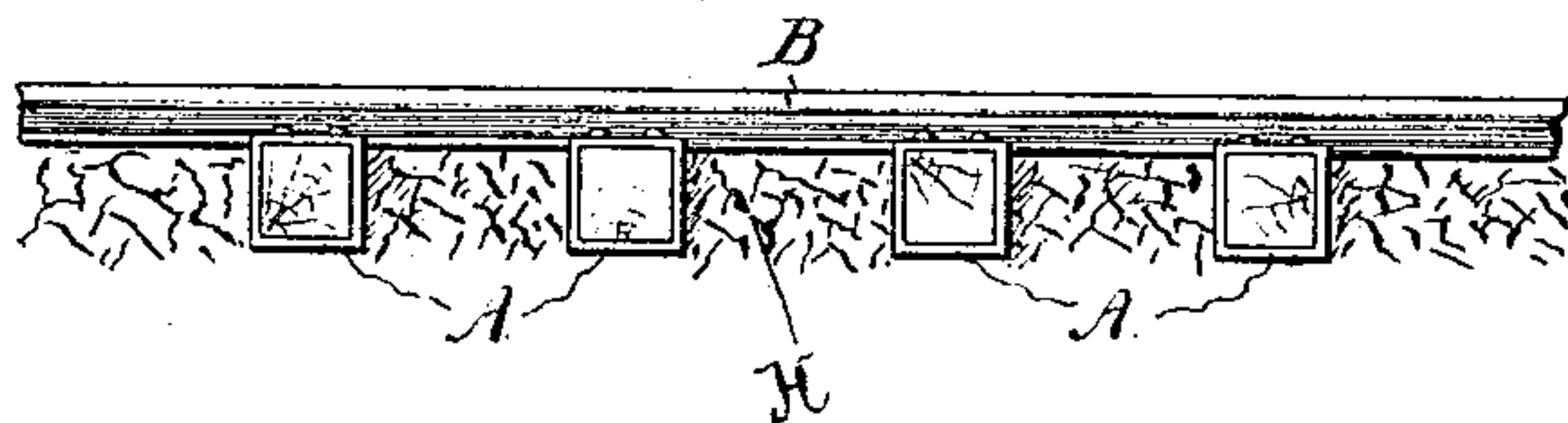


Fig. 3.

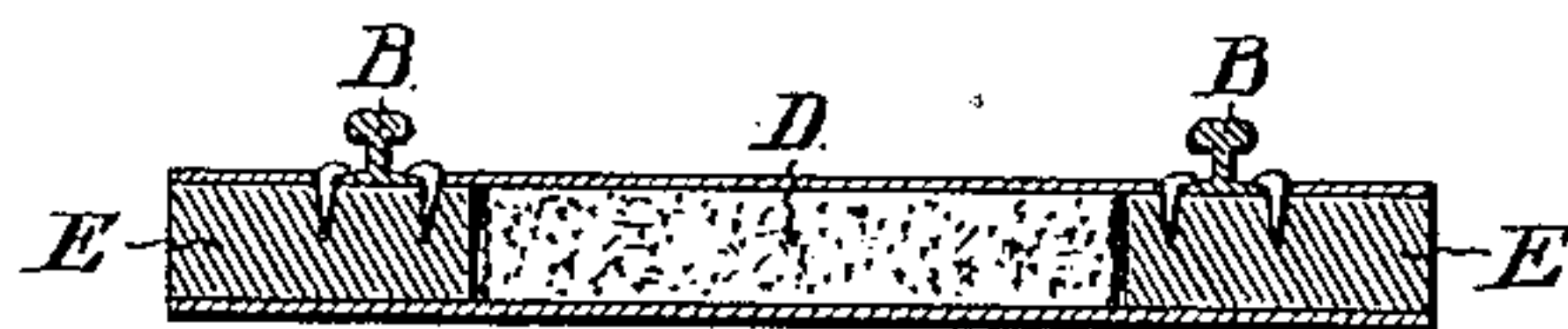


Fig. 4.

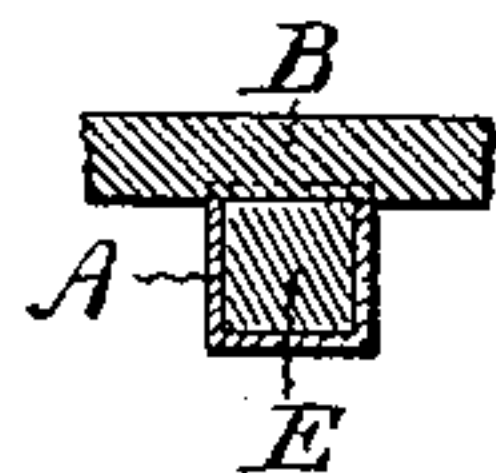
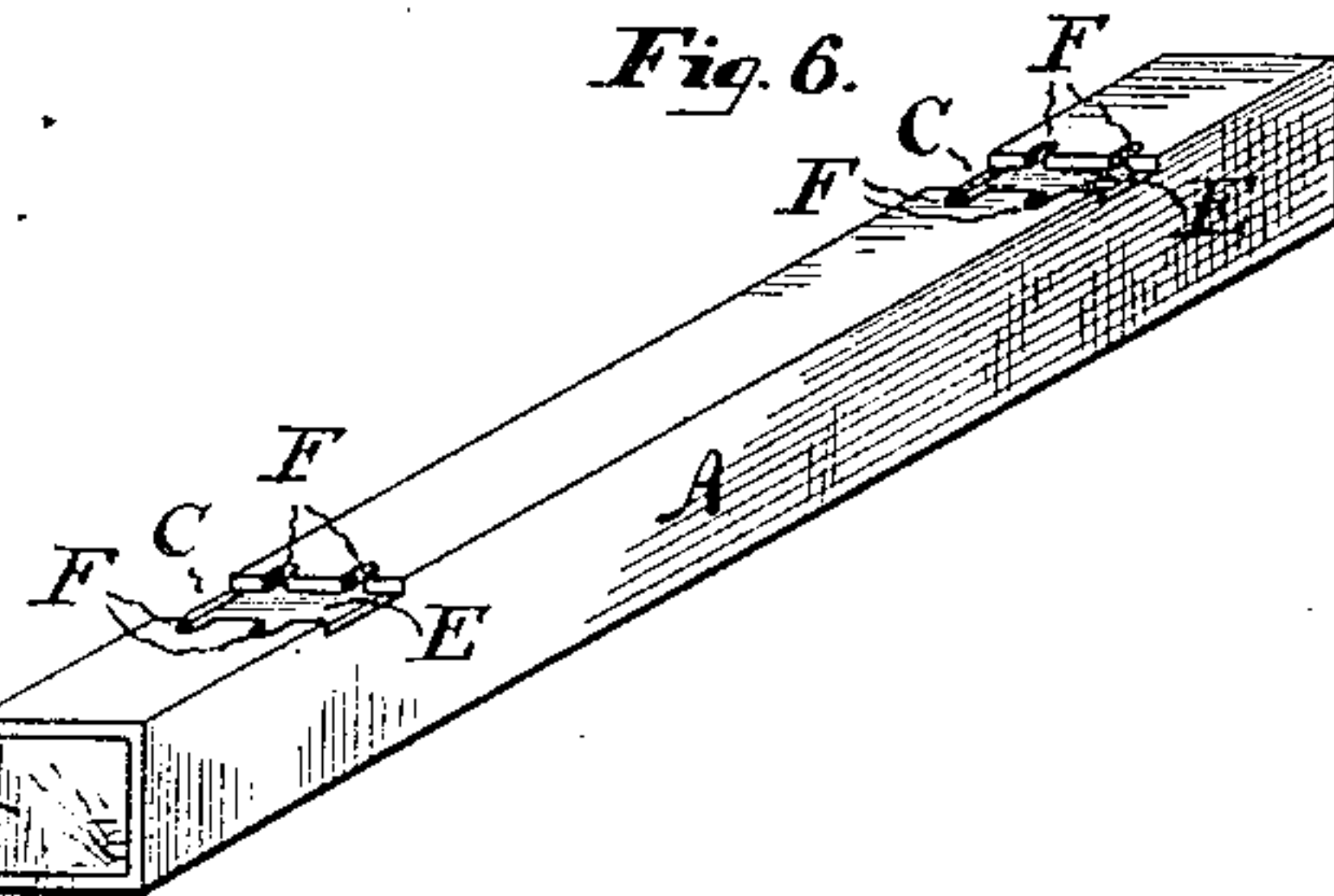


Fig. 5.



Fig. 6.



WITNESSES:

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RAILWAY CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 370,192, dated September 20, 1887.

Application filed January 3, 1887. Serial No. 223,258. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. HELLER, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Railway Cross-Ties; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof as to enable others skilled in the art to make and use the said invention.

This invention relates to cross-ties of railways for supporting the tracks or rails, and has for its object the providing of a more durable and sufficiently elastic support for the rails, together with increased facility for repair and a better maintenance of alignment of the rails, than have been practicable with other construction.

The nature of this invention may be concisely stated to consist of a tubular shell of ductile metal filled in the center with a composition or concrete and at the end with wooden blocks, upon which the rails rest and into which spikes are driven through notches in the metal shell for holding the rails in position.

I will now proceed to describe the mode of making and using the said invention, referring in so doing to the drawings annexed and the letters of reference marked thereon, in which—

Figure 1 shows a plan of a railway made with these improved ties; Fig. 2, a side elevation. Figs. 3, 4, and 5 are sections respectively in the planes indicated by the dotted lines Z Z, Y Y, and X X in Fig. 1; and Fig. 6, a detached perspective view of a metallic shell.

The same letters of reference apply to the same parts in the several figures.

A represents horizontal tubes of rectangular cross-section, in length, breadth, and height equal to the usual timber cross-tie—that is to say, long enough to extend outwardly beyond each rail B to afford a sufficient support on the road-bed without sinking into it and without springing the center of the tie upward. Through the upper side of the tube A, under the parts upon which the rails B rest, are cut openings C of the breadth of the top of the tube A and extending downward upon the sides about half of an inch, more or less. Each of the openings C is equal in the direc-

tion of the length of the tube A to the breadth of the sole or base of the rail B. The central portion of the tube A is filled compactly with a composition or concrete, D, of asphalt and stone, or of some equivalent tenacious and hard material possessing a degree of flexibility. The portions of the tube A beyond the concrete D are filled with hard-wood blocks E, preferably of oak, impregnated with a preservative compound for resisting decay and attacks of insects and worms. Notches F are cut upon the margins of the holes C, through which spikes G are driven into the blocks E, the heads of which spikes serve to secure the rails B to the cross-ties A. The support of the rails B is upon the blocks E, and the blocks E rest upon the bottom of the tube A. The concrete D stiffens the tube A and serves to exclude water and prevent the floating of the tie in case of overflows.

The blocks E furnish an elastic cushion to support the rail, and can be changed in position in the tubes A, so that when impaired by repeated driving of the spikes G other sides and ends may be presented for use.

The block E can be removed from the tube A when spikes G are withdrawn without displacing the ballast H between the ties A, and the passage of the trains can be continued while the repairs of the ties and track are in progress—a feature very desirable in much-used portions of railways.

Having described this invention and the mode of making and using the same, what I claim is—

1. A railway cross-tie consisting of a rectangular tube of metal filled centrally in its length with a concrete, and having combined therewith movable blocks of wood presenting surfaces through apertures in the tube for supporting and securing the rails thereto, substantially as set forth.

2. In metallic railway-ties, the combination of removable wooden blocks E with a rectangular tubular case, A, having apertures C for receiving the rails and notches F for receiving spikes, substantially as and for the purpose set forth.

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Witnesses:

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