(No Model.)

C. F. KREUZ.

RAILROAD TIE.

No. 263,919. Patented Sept. 5, 1882.

Fig. 1.

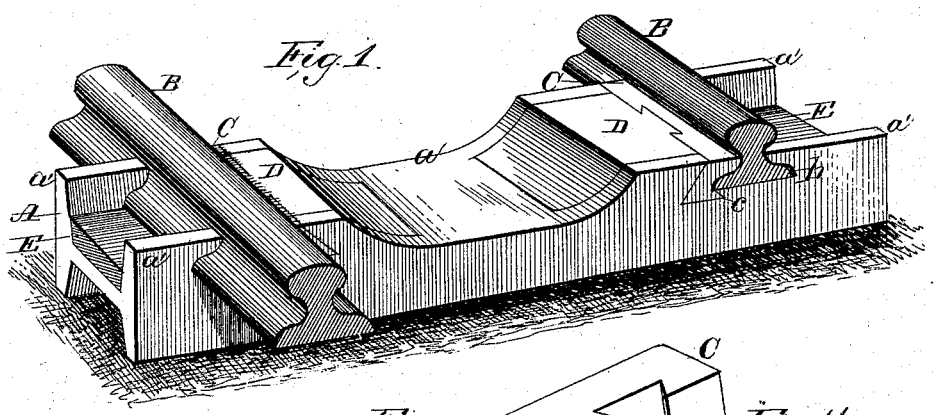


Fig. 3

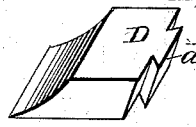


Fig. 4

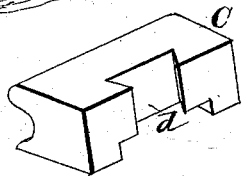


Fig. 2.

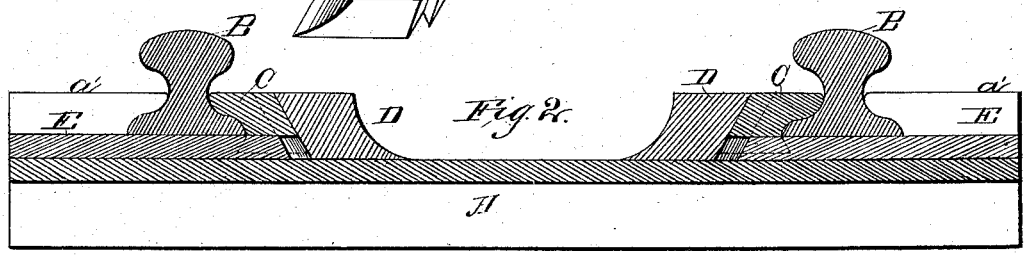
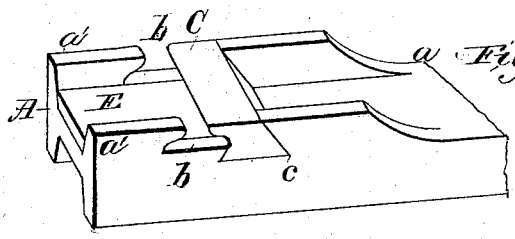


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

CONRAD F. KREUZ, OF MILWAUKEE, ASSIGNOR OF ONE-HALF TO JEROME D. CLARKE, OF MADISON, WISCONSIN.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 263,919, dated September 5, 1882.

Application filed May 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, CONRAD F. KREUZ, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Railroad-Ties; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to railroad-ties, and is in part an improvement on the device patented to me December 20, 1881, and numbered 251,251, as will be more fully set forth hereinafter.

In the drawings, Figure 1 represents in perspective one form of my improved tie with a special key. Fig. 2 is a longitudinal vertical section of the same. Figs. 3 and 4 are detail views of the key and lock, and Fig. 5 represents another form of my tie without the described key.

In my patent above named I found it necessary to employ a system of three ties, each of the same general description, yet differing more or less in detail, and two of which were adapted to be used alternately throughout the length of a pair of rails, while the third tie was to be used whenever a second pair of rails were to be laid in continuation of the preceding pair. In my present invention, however, all this is much simplified, and I may use indiscriminately the form of tie shown in Fig. 1 or the form shown in Fig. 5, though both may be used to good effect, and where this is done the form shown in Fig. 1 with the extra key is best adapted for the purpose of uniting the ends of two pairs of rails, while the other form of tie, Fig. 5, may be used for the intermediate ties. Again, when the grade of the road is very steep it may be desirable to employ the form of tie with the key, whereas on perfectly-level road-beds the form shown in Fig. 5 will answer satisfactorily.

A represents the body of the tie, and this is formed of H bars or beams of iron, having a central web and upper and lower flanges. The upper flanges are cut or punched through transversely to remove the superfluous iron at the center *a*, and also on each side of this central cut-away, as shown at *b b*, to receive the rails B B and at *c c* to receive the locks C C. These locks C are either plain on the side or edge farthest from the rail, as shown in Fig. 5, or provided at that point with a central dovetail groove, *d*, extending from top to bottom, as shown in Fig. 4, to receive the central dovetail projection, *d'*, on a key, D, Fig. 3, according to the grade of the road or the kind of service required, as already explained.

E E represent cushions interposed between the central web of the tie-body and the bottom of the rails. Their function is to prevent jarring and to deaden sound, and also to prevent the pounding of the surface of the rails by the car-wheels when the ground is frozen. These cushions are to be made of either wood, rubber, felt, leather, paper, or a mixture of any of these, or any similar composition which possesses the qualities of flexibility, durability, and elasticity.

I have designated by the letters *a' a'* the extreme ends of the side flanges of my tie above the central web, and extending from each end of the tie to the outer side of each rail. Should I desire in any event to adopt the system of alternation that I described in my former patent hereinbefore named, it would only be necessary to remove (by punching or cutting in precisely the same way, and, if desired, at the same operation, in which the spaces *a b c* are formed) these end portions, *a' a'*, of my upper flanges, and then the rail would serve as an exact substitute for the rail shown in Fig. 2 of my said Patent No. 251,251, to be alternated with my present complete rail. In Fig. 2 of my present case I have shown by the wholly white portions (marked *a' a'*) just what would thus be removed, as a portion of the flanges above the web should be retained in order to secure the cushions E against lateral displacement.

My ties can be made very quickly and cheaply from the H-iron bars or beams, as all portions of the upper flanges which are to be cut away can be removed at a single punching operation, thus leaving the body of my tie complete, and the lower flanges, being left integral, will firmly grasp the earth and lessen the danger of displacement of the tie when once laid.

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

1. A railroad-tie made from a bar of H-iron,

the upper flanges of which are punched through or cut away, as shown at *b c*, in combination with the rails B and locks C, as set forth.

2. A railroad-tie made from a bar of H-iron, the upper flanges of which are punched through or cut away, as shown at *b c*, in combination with the rails B, locks C, and keys D, as set forth.

3. A railroad-tie made from a bar of H-iron, the upper flanges of which are punched through or cut away, as shown at *b c*, in combination with the rails B, locks C, keys D, and cushions E, as set forth.

4. In railroad-ties, the combination of the locks C, having central dovetail groove, *d*, extending from top to bottom, with the keys D, having central dovetail projections, *d'*, as shown and described, and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand on this 10th day of April, 1882, in the presence of two witnesses.

CONRAD F. KREUZ.

Witnesses:
HENRY HARNDEN,
F. M. STEWART.