S. H. HAMILTON.

Railway-Ties.

No. 163,187. Patented May 11, 1875.

Fig. 1.

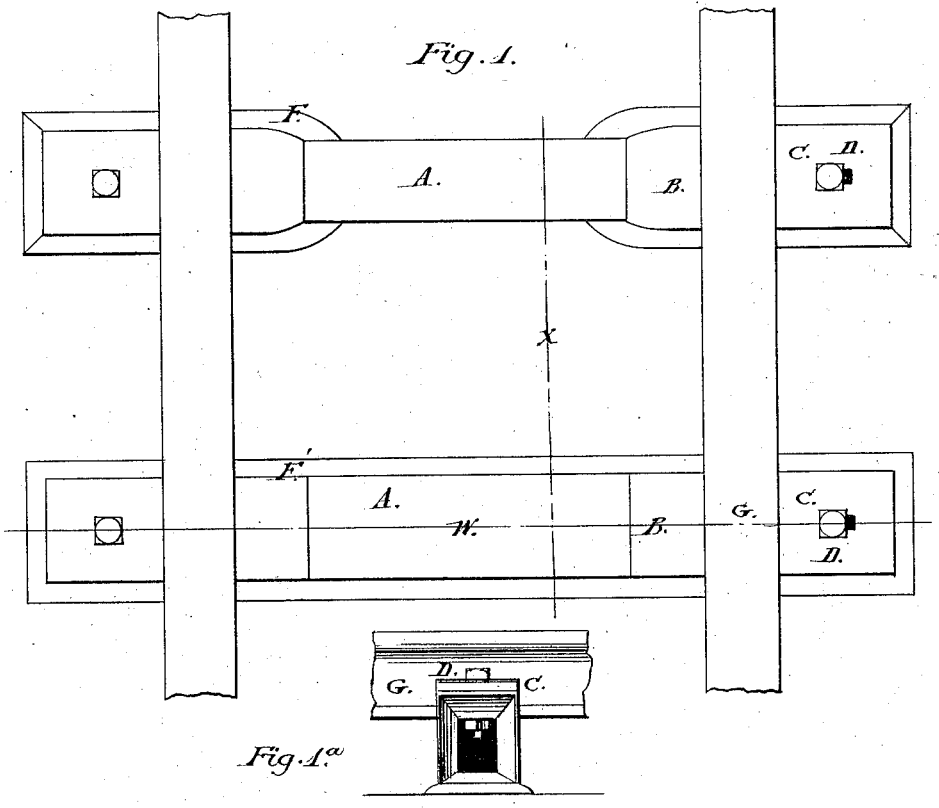


Fig. 1ª

Fig. 2.

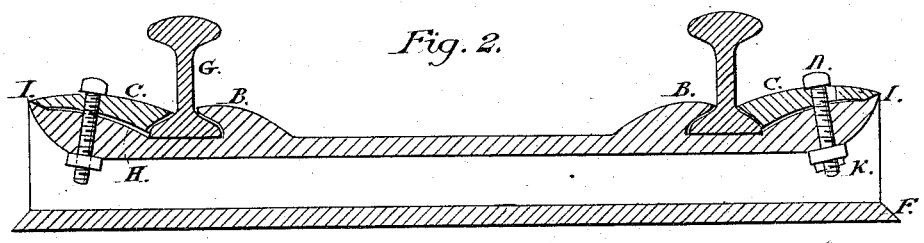
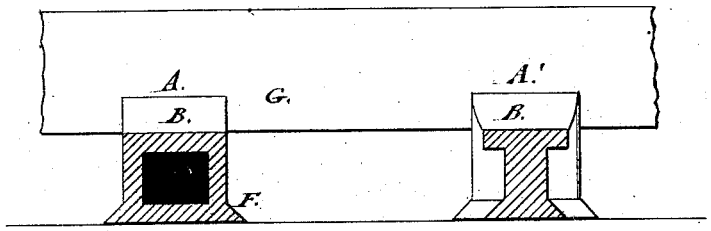


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

SILAS H. HAMILTON, OF BUSHNELL, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN FITCH, OF TOLEDO, OHIO.

IMPROVEMENT IN RAILWAY-TIES.

Specification forming part of Letters Patent No. **163,187**, dated May 11, 1875; application filed May 4, 1875.

To all whom it may concern:

Be it known that I, SILAS H. HAMILTON, of Bushnell, McDonough county, Illinois, have invented a new and useful Improvement in Railway-Ties, which are made substantially as hereinafter set forth, referring to the accompanyings drawings, in which—

Figure 1 is a plan of two forms of my invention. Figs. 2 and 3 are cross-sections of same on lines *w x*, and Fig 1ª shows the end of one tie in elevation.

This invention is an improvement in railway-ties of metal for holding the rails; and consists in forming their ends or whole length in tubular form, of iron or steel, and in the supports and fastenings of the rails thereto, and details therein.

The tie A is formed of iron or steel, in one piece. It is flattened in its cross-section, and has a flange, F, around the bottom, to give breadth of bearing on the road-bed. This form is made tubular throughout its length. The form A′ is made the same, except that the central portion between the rails is made with a solid center, and top and base flanges, leaving the ends tubular. The jaws B are formed on the top of the tie, with ledges projecting over the edge of the rail-base, and against the rail-web G, to hold it solidly. The top of the tie forms seats for the rails instead of chairs. The ends of the tie, outside of the rail, are inclined upward to the end, and upon these inclines H are bolted clamps C, with their inner ends on the outside flange of the rail-base, and against the web of the rail, to hold it solid on that side. These clamps fit their seats on tie and rail, and are held solidly down by bolts D passing through into nuts in the tubular ends of the ties. The bolt-holes through the clamps are slotted, so the clamps may slide down the incline to rest solidly against the rail by the strain of the bolt, the clamp-plates being wedge form. There are also outer inclined abutments L on the ends of the ties, against which these clamps slide, to crowd them onto the rails lengthwise. The bolts D have square heads to turn by, to tighten them in the nuts below; they also have holes through their lower ends to receive keys K, to hold the nuts on solidly and from getting loose.

This tubular construction of the portion on which the rails rest gives an elasticity very desirable, and the elasticity may be regulated as desired by controlling the thickness of the shell, whether the central portion of the tie between the rails is tubular or not. The durability of this tubular metallic tie will be very great, and the saving to the road in preventing accidents will be great. The attachment is very simple, and is very easily and quickly put on; it holds securely, and will prevent accidents from loose or spreading rails. The nuts, being within the tubular ends of the ties, are protected from all accidents and from the weather, while they are easily seen or got at to keep in order, and by simply removing them the rails may be removed without further trouble.

I claim—

1. The metallic tie with tubular ends, the lips B C, and bolts D, having nuts within the tubular ends, as set forth.

2. The tubular-ended tie, having the ledges B C, bolt D, and inclines H, all arranged substantially as set forth.

3. The tie with the inclines H, abutments I, clamps C, and bolt D, having nut and key K on its lower end, as set forth.

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Witnesses:

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