

(No Model.)

G. F. KEY.
RAILROAD TIE.

No. 568,446.

Patented Sept. 29, 1896.

Fig. 1.

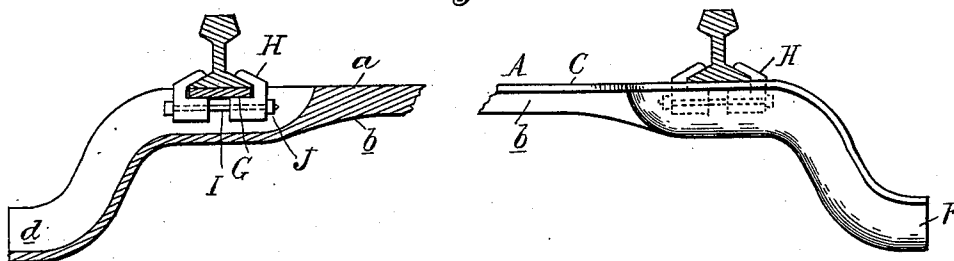


Fig. 2.

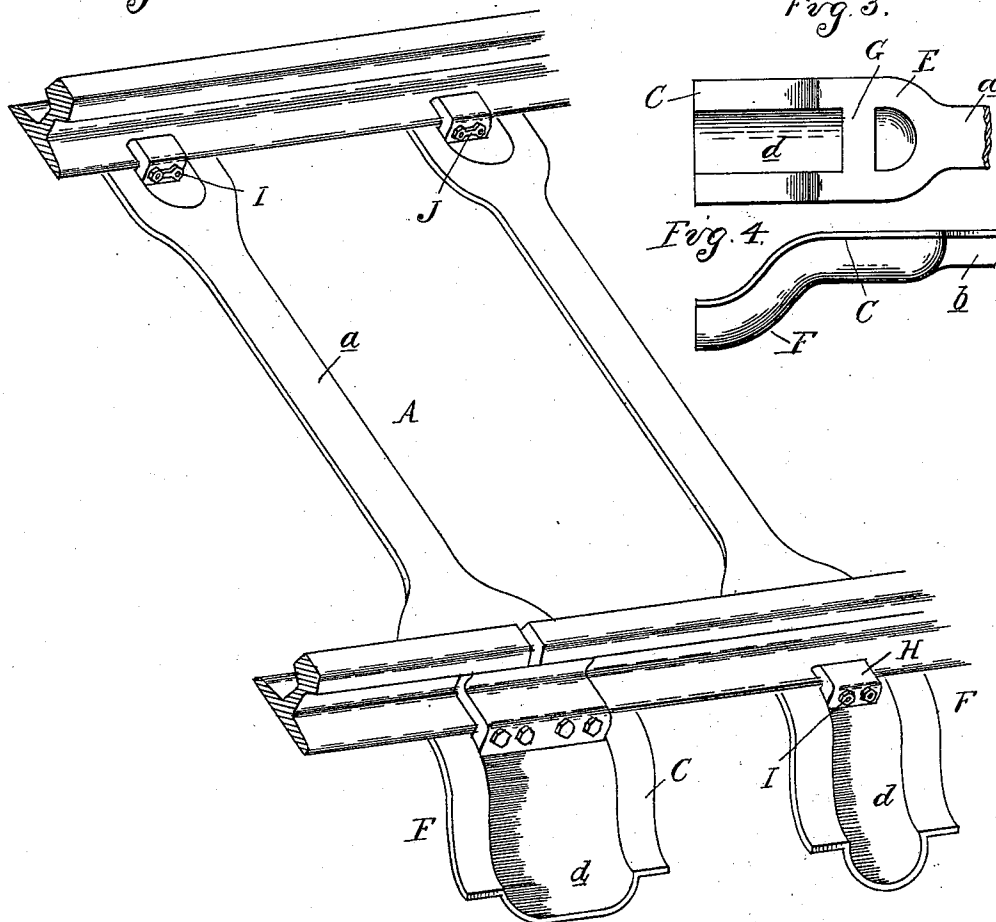


Fig. 3.

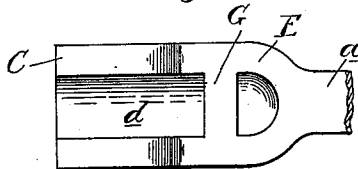
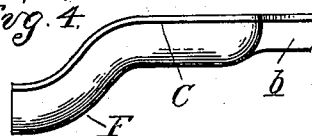


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 568,446, dated September 29, 1896.

Application filed December 16, 1895. Serial No. 572,277. (No model.)

To all whom it may concern.

Be it known that I, GEORGE F. KEY, a citizen of the United States, residing at Ann Arbor, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the construction of a railway-tie of metal, and particularly in the construction, arrangement, and combination of the various parts, whereby I obtain a tie which is light, strong, durable, easily made, and which is especially well adapted to all the exigencies to which such ties are subjected in practical use, all as more fully hereinafter described.

In the drawings, Figure 1 is a sectional elevation of one of my ties, showing the rails in position as in use. Fig. 2 is a perspective view of a portion of a road-bed, showing two ties, one being formed to adapt the clips for making a rail-joint and the other a regular tie. Figs. 3 and 4 are plan and side elevation of one end of my tie, or what I call the "end-rail-supporting portion" thereof.

The tie consists of the central portion, which is in fact the tie part or the connecting part, and the two end-rail supports. While these parts have only an imaginary dividing-line, as they are preferably cast integral of iron, for convenience of description I will designate them, as mentioned, as if separated.

A is the middle or connecting portion. This I make of a plate *a*, adapted to lie flat on the ground or the road-bed, and with a central depending rib *b*. At the ends are the rail-supporting portions, each consisting of the side plates *C*, preferably formed as bifurcated extensions of the plate *a* of the central portion, these sides being connected by a depending trough-shaped portion *d*, open on top. The ends of the rib *b* connect with or are cast integral with the ends of the troughs, thus in effect forming a continuous rib or reinforcement along the whole length of the tie.

The rail-supporting sections of the tie comprise the horizontal portion *E* and the down-

wardly and outwardly curved portion *F*, as shown in Figs. 1 and 4.

Midway the length of the horizontal portion of the rail-supporting section is a bridge *G*, spanning the trough and connecting into the side plates, being cast integral therewith, and with its upper face flush with the upper faces of the side plates, so as to form a seat or support for the foot of the rail. This bridge is substantially the same width as the foot of the rail.

The ties being laid in the road-bed, and the rails laid thereon over the bridge, may be clipped thereto in any desired manner, but I prefer to use the following construction as especially adapted to be used in connection with this tie:

I have two clip-plates, having a recess in their inner faces adapted to engage over the edge of the bridge and the foot of the rail, as shown, that portion of the plates passing beneath the bridge having apertures to receive the clamping-bolts *I*. These bolts at their ends are screw-threaded and engage in screw-threaded apertures in the double nut or plate *J*, and are turned up until the plates are clamped tightly upon the parts and hold the rail firmly and rigidly upon the bridge. At joints I make the trough wider, as shown at the lower left-hand corner of Fig. 2, and extend the top of the clip-plates up beside the web of the rails to take the place of fish-plates.

The trough, combined with the rib *b*, serves to stiffen the tie, and the trough acts to carry off any water from around the connection of rail and tie, discharging it free from the side of the road-bed.

The use of the double nuts with the screw-bolts obviates the use of lock-nuts.

What I claim as my invention is—

1. A metallic railway-tie consisting of a central connecting portion and end-rail-supporting portions, of flat flanges or plates on the edges thereof, a central depressed trough-shaped portion between, and a rail-supporting bridge joining the plates intermediate the trough, substantially as described.

2. A metallic railway-tie, consisting of a central connecting portion, end-rail supports, horizontal at their inner ends, and down-

wardly and outwardly curved at their outer ends, comprising flat side plates, an intermediate depressed trough-shaped portion, and a rail-supporting bridge between the side
5 plates, substantially as described.

3. The combination with the central connecting-section, having a top flat plate and a depending central rib, of end-rail supports
10 widened ends being curved downwardly and comprising the side plates, an intermediate

trough and a bridge connecting the side plates, the end of the web of the connecting portion merging into the end of the trough portion, the whole being formed integral, sub- 15
stantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE F. KEY.

Witnesses:

M. B. O'DOGHERTY,

OTTO F. BARTHEL.