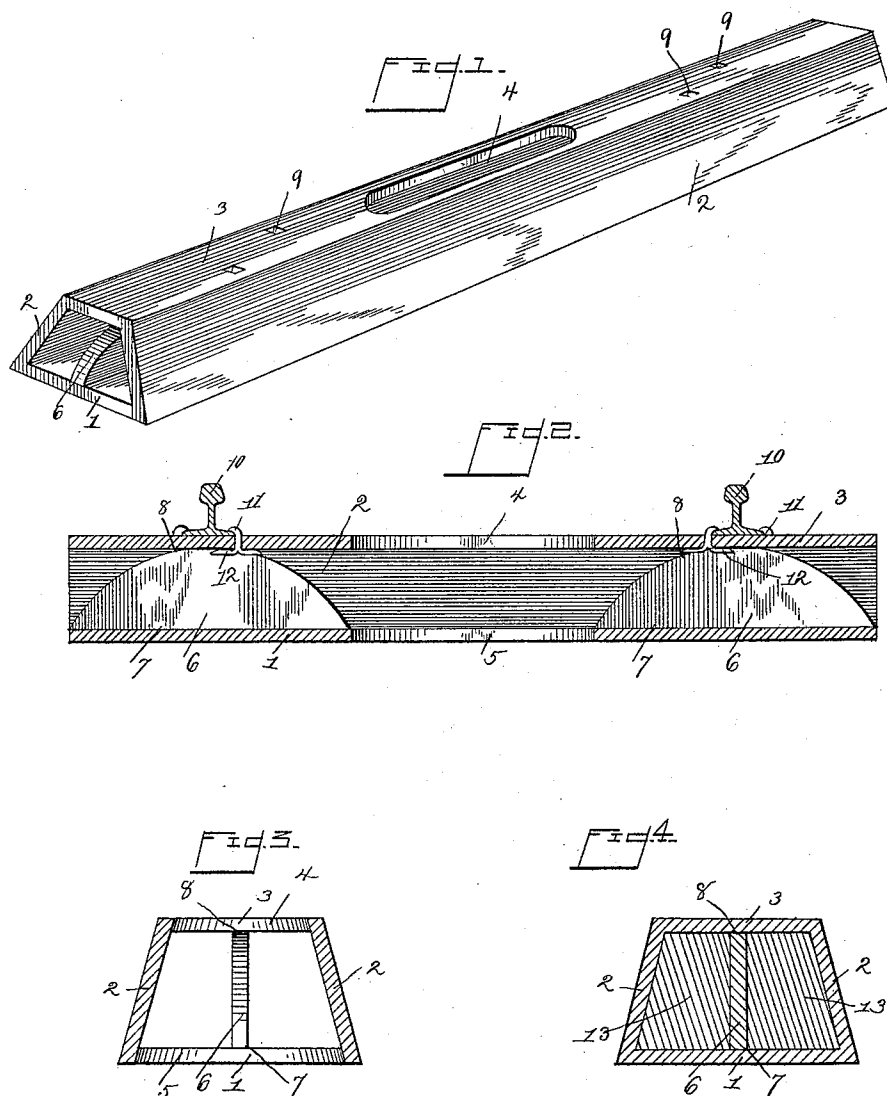


No Model.)

J. A. CARL.
RAILWAY TIE.

No. 464,552.

Patented Dec. 8, 1891.



Witnesses:

Chas. C. Ford.
W. S. Duval.

Inventor

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

JOHN A. CARL, OF BRIDGEPORT, PENNSYLVANIA.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 464,552, dated December 8, 1891.

Application filed May 23, 1891. Serial No. 393,883. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. CARL, a citizen of the United States, residing at Bridgeport, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Railway-Tie, of which the following is a specification.

This invention relates to improvements in metal railway-ties; and the objects in view are to provide a tie formed of metal and both light and cheaply constructed.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a railroad-tie constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a transverse section. Fig. 4 is a transverse section of the tie when employed in connection with a wood-filler.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I construct the metallic tie of either cast or wrought metal, and the same comprises the bottom 1, side walls 2, and the top wall 3. The side walls are inclined or converged toward their upper ends, and the top and bottom walls are provided with elongated openings 4 and 5, respectively, the upper opening 4 being smaller than the lower opening 5, the ratio being the same as between the top and bottom of the tie.

Interposed between the bottom and top at each side of the openings 4 and 5 are braces 6, said braces being in the shape of the chord of a circle—that is, consisting of the lower base portion 7 and the curved upper edge 8. The base 7 rests squarely upon the upper side of the bottom wall of the tie, while the curved upper edge takes under and supports the center of the top wall of the tie.

In operation the ties are mounted upon the bed and surrounded by the ballast, the ballast also being tamped in the openings 4 and 5, and therefore taking into the tie beyond the edges of the same. Thus I form a secure anchorage for the tie, the inclined walls serving to greatly aid in the stability of the device as a whole.

In operation a rail-section 10 is laid across the tie near the ends, and the base of the rail is clamped at opposite sides by the heads of spikes 11, passed through perforations 9, located diagonally opposite each other and formed in the top of the tie. The lower ends of the spikes 11 are preferably split and clinched, as at 12.

As shown in Fig. 4, I may insert into each of the cavities of the tie formed by the longitudinal partitions a filler 13, of wood, into which the lower ends of the spikes may be driven. When this is done, the arched supports or braces 6 serve the double function of braces and of forming small compartments or cavities adapted to receive fillers of wood. Each cavity accommodates and is filled by small timber of less than one-half the size that would be necessary to fill the tie were it not thus subdivided, and thus, instead of employing necessarily large and in some sections what would be expensive and scarce timber, small cheap timber may be utilized with equally good results.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I provide a cheap, simply-constructed, strong, and durable tie, which may be readily anchored to the bed without danger of displacement, and, furthermore, I am enabled to employ small readily-formed timber for filler purposes.

Having described my invention, what I claim is—

1. The herein-described metallic tie, made tubular and provided with a longitudinal partition interposed between the bottom and top of the tie and serving as a brace or support for the top, substantially as specified.

2. The herein-described metallic tie, made tubular and provided with an internal vertical partition having a flat lower edge resting on the base of the tie and an upper curved edge under the center of the top of the same, substantially as specified.

3. The herein-described metallic tie, having opposite converging side walls and bottom and top walls, the two latter having central openings in the same ratio of proportion as are said top and bottom walls and provided at each side of the openings with vertical partitions, the upper edges of which are curved

and rest under the center of the top of the tie, substantially as specified.

4. The herein-described hollow tie, having vertical partitions longitudinally subdividing the same, combined with the wood fillers
5 inserted in the compartments formed by the partitions, the rail-sections mounted on the tie, and the spikes driven through the top of the tie into the fillers and having their heads

overlapping the bases of the sections, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN A. CARL.

Witnesses:

WM. A. EVANS,
G. BARNES.