(No Model.)

J. A. OGDEN.

RAILROAD TIE AND FASTENING.

No. 386,156. Patented July 17, 1888.

Fig. 1.

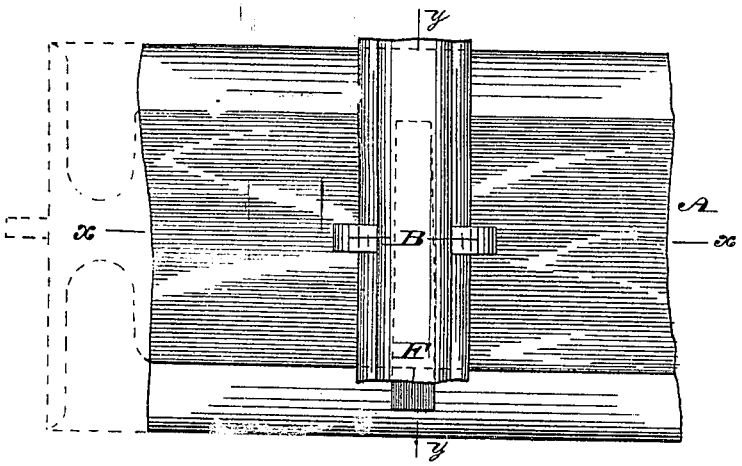


Fig. 2

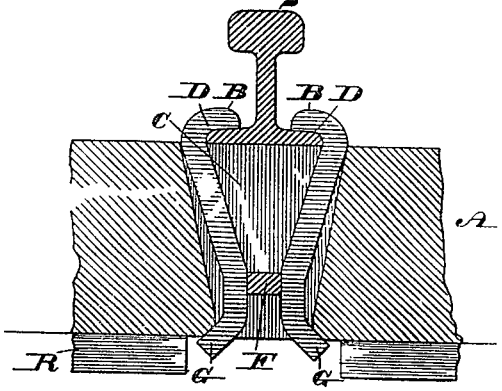
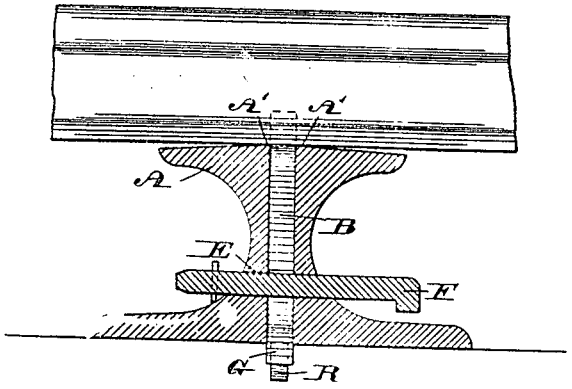


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

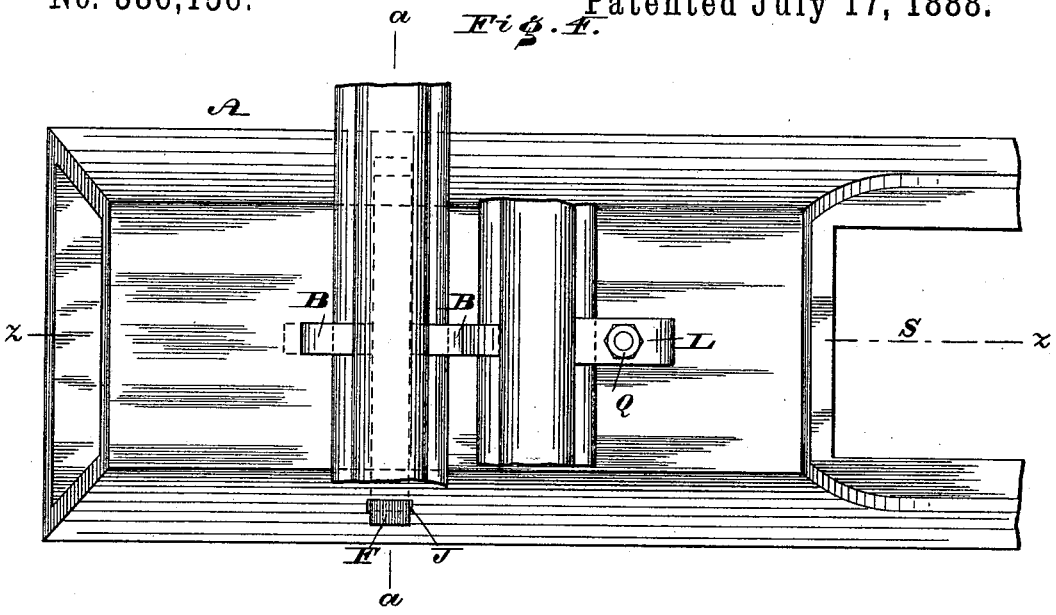


Fig. 5.

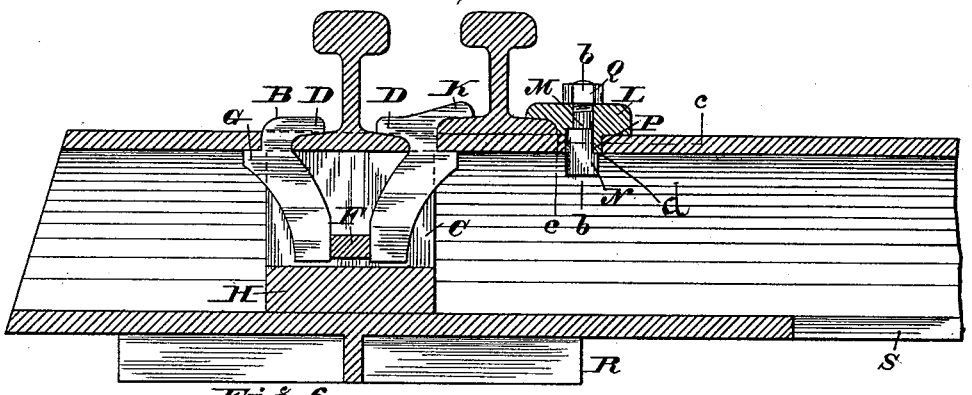


Fig. 6.

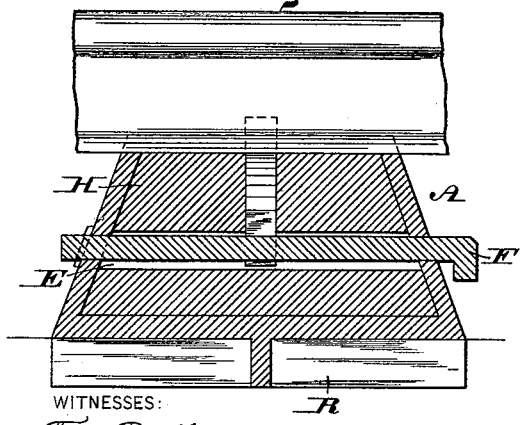


Fig. 7.

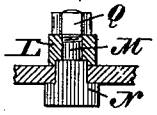
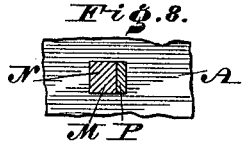


Fig. 8.



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UNITED STATES PATENT OFFICE.

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RAILROAD-TIE AND FASTENING.

SPECIFICATION forming part of Letters Patent No. 386,156, dated July 17, 1888.

Application filed October 7, 1887. Serial No. 251,681. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. OGDEN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Railroad-Ties and Fastenings, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a railroad-tie formed of metal possessing novel features and having novel fastenings for the rails, as will be hereinafter fully set forth.

Figure 1 represents a top or plan view of a railroad-tie and fastening embodying my invention. Fig. 2 represents a transverse vertical section thereof in line *x x*, Fig. 2. Fig. 3 represents a longitudinal vertical section thereof on line *y y*, Fig. 1. Fig. 4 represents a top or plan view of a tie and another form of rail-fastening, including a fastening for an additional rail. Fig. 5 represents a transverse section in line *z z*, Fig. 4. Fig. 6 represents a longitudinal section in line *a a*, Fig. 4. Fig. 7 represents a vertical section of a portion in line *b b*, Fig. 5. Fig. 8 represents a horizontal section of a portion in line *c c*, Fig. 5.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A represents a railroad-tie, which is constructed of metal, and B represents the fastenings for the rail, said fastenings being of check-pieces, which are fitted in a vertical recess or opening, C, in the tie, and formed of plates of metal having at their upper ends the inwardly-bent lips D, which rest on the base of the rails, it being noticed that the opening C in Figs. 1, 2, and 3 is of such width that the lower ends of the check-pieces are capable of lateral play therein.

In the tie, near the bottom thereof, is a horizontal opening, E, to receive a key, F, said opening E being so disposed that when the key is inserted thereinto it enters between the lower portions of the check-pieces, and thereby spreads the same, causing the top lips, D, to approach each other, and thus be forced firmly upon the base of the rails. The lower ends of the check-pieces are bent outwardly, forming lips G, which bear upwardly against the bottom of the tie, thus preventing the fastenings from rising and consequent upward displacement through the opening C.

It will be seen that when the fastenings are in position the rail is placed on the tie and its base inserted under the lips D. The key F is now introduced into the opening E, whereby it bears against the inner sides of the lower portions of the check-pieces, thus separating the same and causing the lips D to turn on the base of the rail as a fulcrum, so that they are pressed inwardly and downwardly against said base, the rail being thereby securely fastened to the tie.

It will be noticed that the tie shown in Figs. 1, 2, and 3 is solid, excepting, however, the places of occupation of the openings C E.

In Figs. 4, 5, and 6 the tie is hollow, and contains a bed, H, having an opening, C, to receive the lower portions of the check-pieces, and an opening, E, for the key F. The lips G are located just below the lips D, so as to bear against the under side of the top piece or wall of the tie.

When the bed is fitted in the tie, the fastenings are located in position from within the tie, after which the rail is placed on the tie and passed under the lips D, the rail then resting on the tie and bed. The key is now inserted through the opening J inside of the tie into the opening E, thus spreading apart the lower ends of the check-pieces, and turning the lips on the base of the rail as a fulcrum, thus pressing the lips firmly against said base, whereby the rail is securely fastened on the tie. When the key F is withdrawn, the check-pieces are released of their holding action on the rail, and the latter may then be removed, as is evident. When an additional rail is employed, as will be seen in Fig. 5, the check-piece next to said rail is formed with an additional lip, K, which projects in a direction opposite to the lip D, so as to embrace one side of the base of the rail. The opposite side of said base is clamped by a check-piece, L, which is secured to the top plate or wall of the tie by a bolt, M, whose head N is within the tie, and bears upwardly against the under side of said top plate. A portion of the body of the bolt is squared or angular, and passes through an angular opening in the

top plate of the tie, whereby turning of the bolt is prevented. One side of said portion of the bolt has a rabbet, *d*, in which is fitted a tongue, P, depending from the under side of the check-piece L, it being noticed in Figs. 5 and 8 that the tongue P occupies part of the opening in the top plate of the tie, through which it receives portion of the body of the bolt. By this provision the check-piece L is prevented from rotation. The body of the bolt passes through said check-piece L, and has its upper end threaded for the engagement of a nut, Q, which when tightened forces the check-piece firmly against the base of the additional rail, so that said rail is reliably fastened. By unscrewing the nut Q the check-piece L is loosened, and the additional rail may then be readily removed.

On the under side of the tie is a cross-shaped rib or flange, R, (see Figs. 4, 5, and 6,) which is embedded in the roadway or ground, thus preventing longitudinal and lateral displacements of the tie. In Figs. 1, 2, and 3 the flange or rib extends in one direction only.

For purposes of lightness, the bottom of the tie is cut away or reduced at its center, as at S, thus leaving less metal thereat, and avoiding ballasting beneath the center, whereby there is no fulcrum at said center and breaking of the tie thereat is avoided.

The center of the tie is slightly elevated, forming a peak or ridge, A', (see Fig. 3,) whereby weight of the railroad-cars is superimposed on said peak, thus avoiding transportation of such weight to the sides of the tie, which are of less strength than the center.

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

1. The combination of the tie A, having the vertical opening C and the side openings, E, leading into said opening C, with a rail, the check-pieces B, each having inwardly-bent upper lips, D, and outwardly-bent lower lips, G, and the key F, adapted to pass through said opening E and between said pieces B, firmly wedging the latter against the top and bottom walls of the tie, substantially as described.

2. A hollow tie with angular opening in the top thereof, in combination with a check-piece having a depending tongue, a bolt having an angular portion corresponding to the angular opening in the tie, and provided with a head adapted to bear against the under side of the top wall of said tie, and a nut, the depending tongue of the check-piece fitting into a rabbet, *d*, on the side of the bolt, substantially as and for the purpose set forth.

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