

No. 782,389.

PATENTED FEB. 14, 1905.

J. M. GRISWOLD.
STEEL RAILWAY TIE.
APPLICATION FILED JUNE 27, 1904.

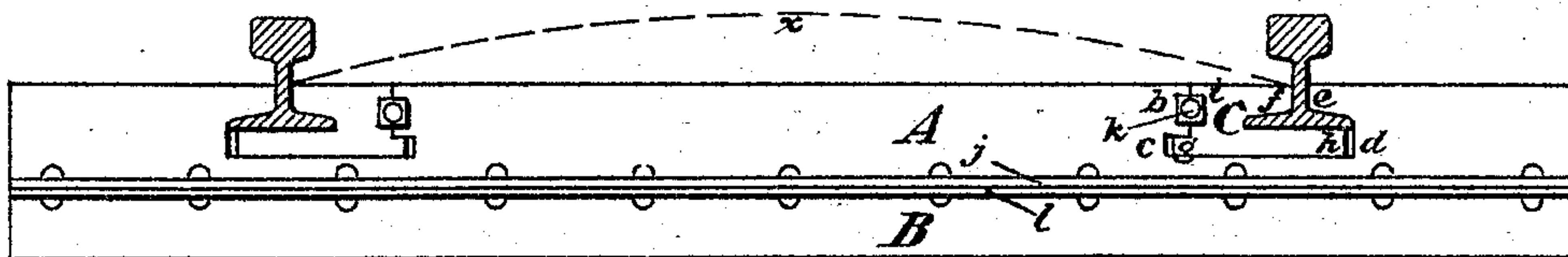


Fig 1.

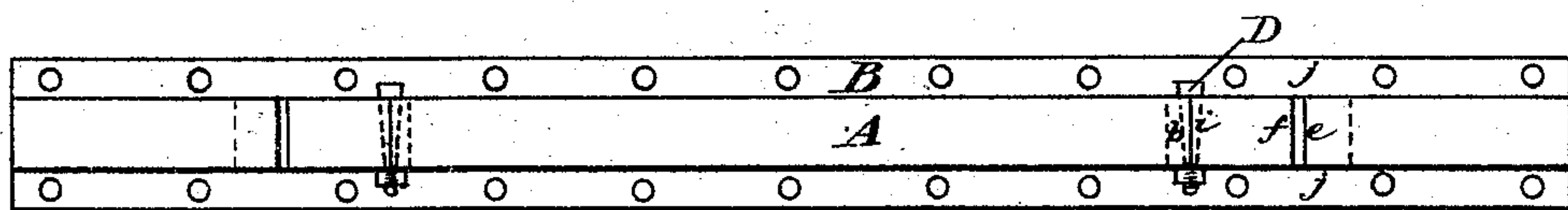


Fig 2.

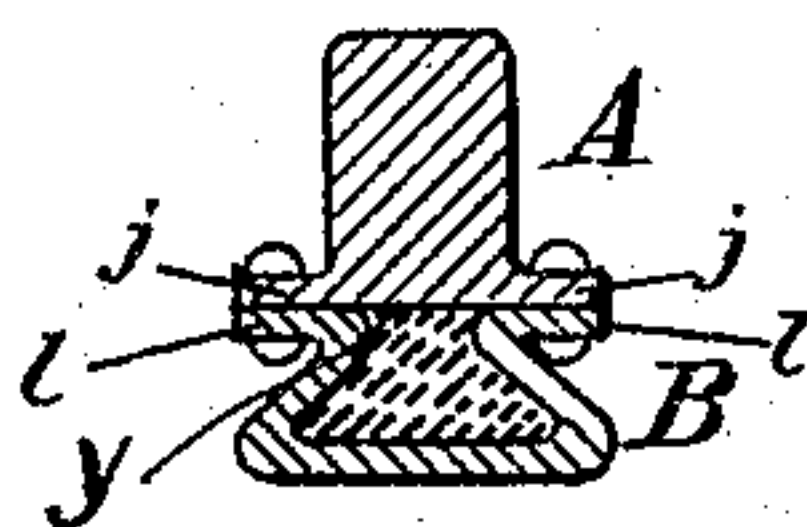


Fig 3.

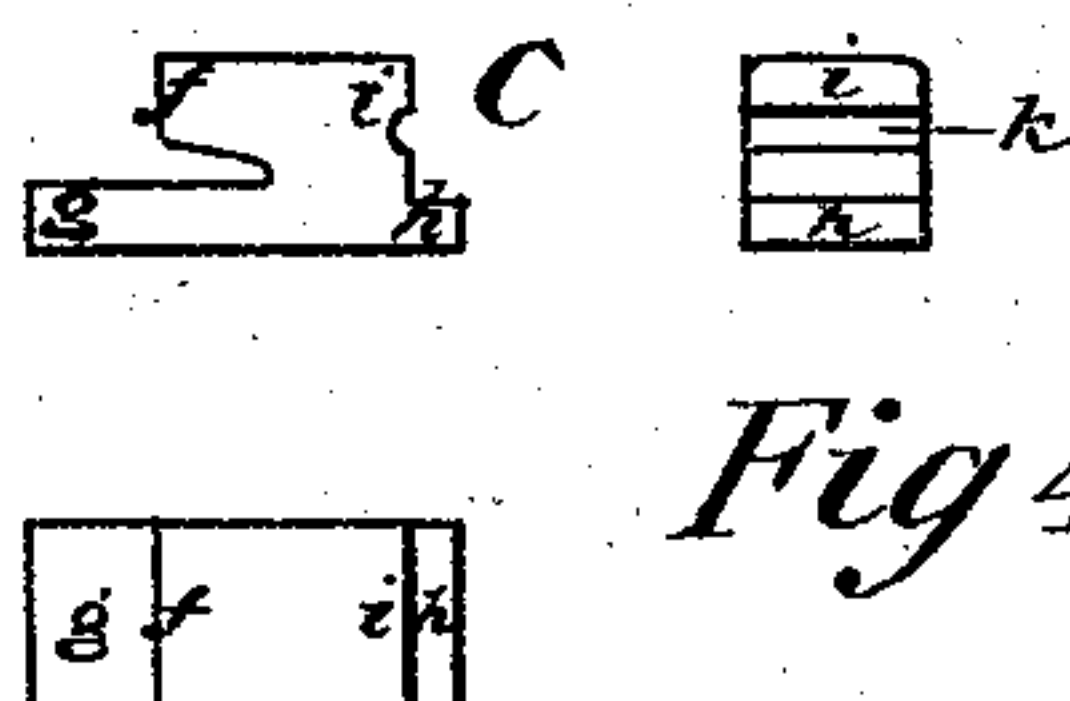


Fig 4.

WITNESSES.

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STEEL RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 782,389, dated February 14, 1905.

Application filed June 27, 1904. Serial No. 214,419.

To all whom it may concern:

Be it known that I, JOSEPH M. GRISWOLD, a citizen of the United States, residing in the city of Detroit, in the State of Michigan, have
5 invented a new and useful Metal Tie, of which the following is a specification.

My invention relates to the improvements in the construction and configuration of metal ties for the following purposes: to bring the
10 main connecting strength of the tie above the road-bed from rail to rail for constant observation and inspection, to maintain a uniform distance from rail to rail and prevent the spreading of the track and the canting of rails,
15 to make a firmer connection between ties and rails than can be secured by spikes in wooden ties, and to secure a safer anchorage, a broader base, and greater elevation for ties. I attain these objects by mechanism illustrated by the
20 accompanying drawings, in which—

Figure 1 is a representation of a side elevation of the tie with its parts and the rails in place; Fig. 2, a plan view of the upper section of the tie with its slots and recesses cut
25 transversely; Fig. 3, the cross-section of the tie and its configuration and connections; Fig. 4, the configuration of the lock.

Sections A and B and lock C when brought in connection constitute the tie as herein pro-
30 posed.

Section A consists of a bar of metal of the length of a tie, approximately three inches square, with a heavy base Y as an integral part thereof acting as a flange, of any desired
35 thickness and six inches or less in width, as represented at A, Fig. 3. The slots *b c d e* are cut transversely across the bar for the reception of the rails, the recesses *c d* to engage arms of the locks *g h* under the rails, and the
40 lapping prolongations *e e* to engage the outside flanges of the rails. The bar A may be raised in height to any line represented by broken line *x*, if necessary, to place it in view over the road-bed. The space between the
45 beveled prolongations *e e* must necessarily measure the exact distance from rail to rail, and the strength of the bar being of any desired width and height to conform to any size of rail, combined with the strength of its in-

tegral base, would hold them firmly from 50 spreading. By extending the lapping beveled prolongations upward on both sides of the webs of the rails to the base of their treads would assist at rail-junctures in holding the
55 ends of the rails in line, the face of the prolongations by their width lapping over the ends of both connecting-rails.

The base-section B is to be of heavy sheet metal, angular in shape, of any desired width at the base, beveled upward to the width of
60 bar A, and bolted through from flange to flange or bolted or welded to the under side of the base of section A. Its internal space should be filled with cement, with trusses at the ends and under each rail. Settled to a depth war-
65 ranted by the height of the tie, with the resistance of the pressure of the track-bank around it, its fixed position would be assured.

The locks C C are designed to fill the spaces of the slots *b c d e* not occupied by the rails. 70 Their lapping projections *f f*, duplicating in size and strength those occupying the outside flanges of the rail, are designed to engage the inside flanges, the arms *g h* to fill the recesses
75 *c d*. These locks are held in place in the recesses by the side contact of the transverse slots, the weight of the rails, and by the pressure of the overlapping outside projections
80 *e e* upon the outside flanges of the rails. A key D, consisting of a bolt slightly beveled, may be inserted at *k*, occupying conjointly the tie and lock and held in place by nuts.

By placing the rails in the slots *b c d e*, throwing the flanges under the lapping projections
85 *e e*, forcing the locks into their places, the arms *h* and *g* under the rails, thus bringing the flanges of the rails into close contact with the projections *e e* and *f f* and the arms *g h* into the recesses *c d* the complete engagement of the
90 tie and rails is effected. For street-railways the ties would necessarily be brought to the level of the rails and pavement or so lowered as to provide for paving above them.

What I claim as my invention, and desire to secure by Letters Patent, is— 95

1. In a railway-tie, the combination of a base-section comprising a plate forming a bottom and inwardly-sloping sides, said base being

filled with a plastic substance, and a longitudinal bar secured to said base, said bar having transverse slots to receive the rails.

2. In a metal railway-tie, the combination
5 of an upper rib having slots to receive the rails, the outer walls of said slots conforming to the bevel of the rails, transversely-slidable blocks to engage the inner sides of the rails, and a hollow base secured to said upper rib.
- 10 3. In a metal railway-tie, the combination of an upper rib having slots to receive the rails, the outer walls of said slots conforming to the bevel of the rails, transversely-slidable blocks to engage the inner sides of the rails, a base
15 comprising a plate forming a bottom and inwardly-sloping sides, and a plastic material

filling said base, the base being secured to said rib.

4. In a railway-tie, the combination of a longitudinal member having transverse slots to receive the rails, the outer walls of said slots conforming to the bevel of the rails, locking-blocks adapted to fit said slots and engage the rails and having longitudinally-extending
20 tongues upon which the rails may rest.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH M. GRISWOLD.

Witnesses:

FLORANCE G. COBB,
BY HANNAH B. THACKER.