

G. A. MEAD.
Rail Joint.

No. 242,350.

Patented May 31, 1881.

Fig. 1.

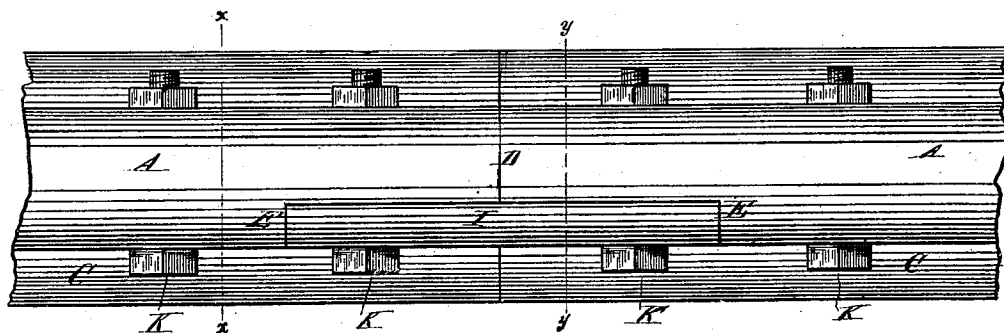


Fig. 2.

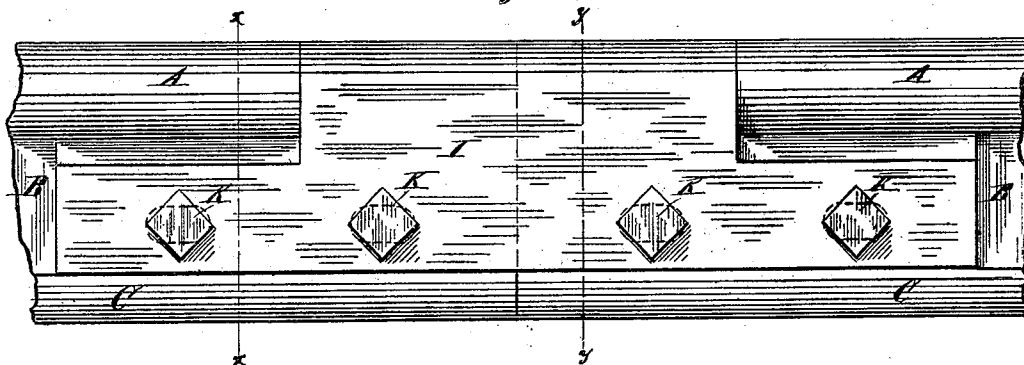


Fig. 3.

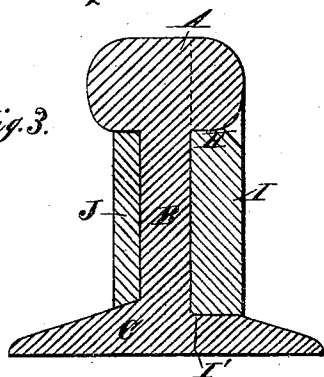
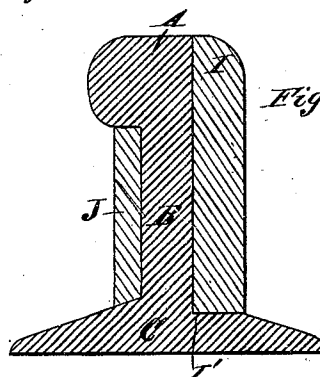


Fig. 4.



Witnesses:
Charles F. Seale,
O. J. Morgan.

Inventor:
Geo. A. Mead,
By A. P. Thayer
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE A. MEAD, OF NORTH SALEM, NEW YORK.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 242,350, dated May 31, 1881.

Application filed February 26, 1880.

To all whom it may concern:

Be it known that I, GEORGE A. MEAD, a citizen of the United States, residing at North Salem, in the county of Westchester and State of New York, have invented a new and useful Improvement in Rail-Joints, which is fully described in the following specification.

In this improvement in rail-joints one of the fish-plates has a middle portion widened to the height of the rail-heads, which are recessed to the vertical plane of the webs thereof for making a splice-joint, on which the wheels are supported both by the rails and the fish-plate, except where at the crack at the ends they are supported on the fish-plate alone, said widened fish-plate also having its end portions prolonged between the heads and the bases of the rails beyond said recesses, and is arranged with its end portions bearing on square shoulders of the bases and under similar shoulders of the heads of the rail-ends, so as to afford great vertical rigidity independently of or without material dependence on the bolts that secure the plates to the rails, on which so much depends in other arrangements where the plates bear at one edge alone, and also where they bear at both edges on the curved or beveled shapes of the sides of the rails.

The essential feature of the invention consists of this arrangement of a fish-plate having the vertical extension and the prolonged end portions fitting closely between the square shoulders of the bases and the corresponding shoulders under the heads of the rails, so that the rigidity of the joint does not depend on the bolts, as when said prolongations are only supported on shoulders at one edge, or where the slackening of the bolts by expansion or by the nuts working loose will slacken the joints, even when the fish-plates bear at both edges on the curved or beveled angles between the webs and the bases and heads of the rails.

Figure 1 in the accompanying drawings is a plan or top view of my improved rail-joint. Fig. 2 is a side elevation. Fig. 3 is a transverse section on line *x x*, and Fig. 4 is a transverse section on line *y y*.

A represents the heads of the rails, B the webs, and C the bases. These heads are recessed or narrowed from the ends D along the inside to the shoulders E by cutting, sawing, or otherwise removing the metal about the

width of the overhanging side of the head, so that the surface in the recessed portion is in the plane of the side of the web B, as shown in Figs. 3 and 4; but, if desired, the recesses may be deeper and the bases have a shoulder, F, square with or at right angles to the side of the web, on which the lower edges, G, of the fish-plate rest, so as to have substantial support thereat, while the upper edges, H, beyond the middle vertical extension, I, fit snugly under similar square shoulders of the rail-heads beyond the recesses, and the said extension rises to the level of the rail-heads and takes the place of the metal removed from the heads, forming a solid continuation across the joint of the rail ends D, having, by reason of the extensions of the fish-plate between the shoulders of the bases and heads, vertical power of resistance almost equal to that of the solid rail and quite independent of the bolts K, by which the plate is bolted to the rails and another fish-plate, J, and which, in this case, have only to keep the plate between the shoulders, and are not required to maintain the vertical resistance, as when the plate bears only at one edge. Nor does the joint slacken if the nuts work loose, as when the plate is supported at both edges by rounded or beveled bearings.

It is believed that this joint will entirely prevent the jolting of the cars and the great noise of the shocks thereof now common to the joints of all railroad-rails, and notably those of elevated roads, which, being magnified by the vibrations of the supporting-structure, are the more intolerable as to the noise and more injurious to the roadway.

I do not claim the vertical extension of the fish-plate to the top of the rails in the recesses thereof, except when the edges of the longitudinal extensions of the plate beyond the recesses are made to fit snugly between the square shoulders F of the bases of the rails and similar shoulders under the heads, which I consider most essential for maintaining vertical rigidity of the joint, as hereinbefore described, and which distinguishes my invention from those of G. W. Skaats, patented March 25, 1873, and H. Williams, patented December 3, 1872, the plate in the former having no bearing under the head, and in the latter having its lower bearing on a chair beneath the rail.

Having thus described my invention, what I

claim, and desire to secure by Letters Patent, is—

5 The combination, with railroad-rails having the head A recessed for a short distance from the ends on one side to the vertical plane of the side of the web, or thereabout, of a fish-plate having a middle extension of the upper edge rising in said recesses flush with the rail-heads, when the end portions of said plate ex-

tend longitudinally beyond said recesses and middle extension, and have their edges closely fitted between square shoulders F of the bases of the rails and similar shoulders of the under sides of the heads, substantially as described
GEO. A. MEAD.

Witnesses:

F. A. THAYER,
W. J. MORGAN.