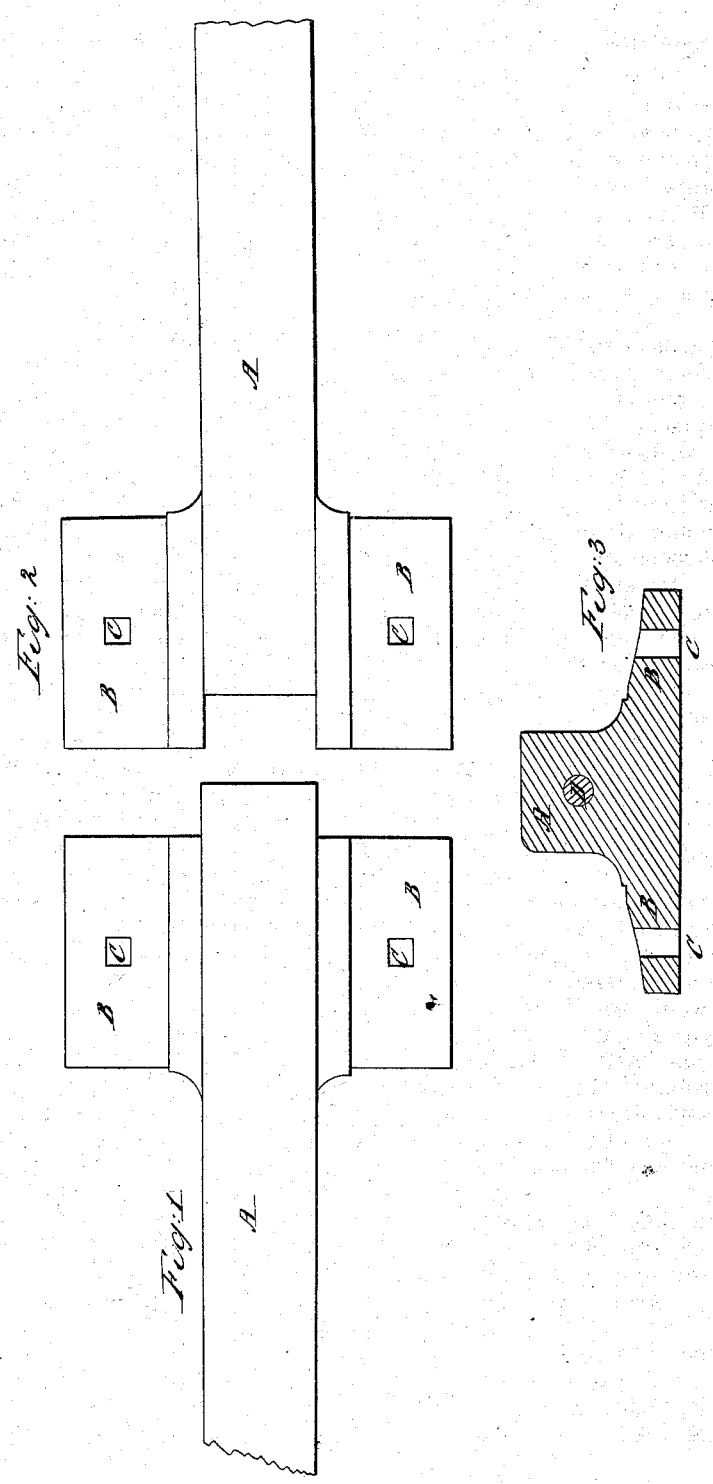
J. M. Bay.

Railroad Rails.

No. 3,539. Patented Apr. 13, 1844.



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UNITED STATES PATENT OFFICE.

JAMES M. BAY, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN THE MANNER OF CONNECTING CAST-IRON RAILS FOR RAILROADS.

Specification forming part of Letters Patent No. **3,539**, dated April 13, 1844.

To all whom it may concern:

Be it known that I, JAMES M. BAY, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented an Improvement in the Manner of Constructing Rails of Cast and Wrought Iron Combined to be Used on Railroads; and I do hereby declare that the following is a full and exact description thereof.

I form my rails of solid quadrangular bars, straight at their bottom and sides, as they are intended to lie closely upon continuous string-pieces. I usually make them about three inches in height and two in thickness. At suitable distances from each other—say at from two to three feet, more or less—I cast wings or brackets, which are to serve the purpose of chairs, and by which they are to be attached to the string-pieces. Close to each end of each of said rail-bars there are formed such ears or brackets. At one end these are allowed to fall back an inch, (more or less,) and at the other to project to the same distance beyond the end of the bar, so that when the two are in place they will interlock in such manner as to prevent all lateral motion. In casting these bars I insert at or near the middle of each of them a rod of wrought-iron, which I denominate a "safety-rod." This rod may be three-eighths or half of an inch in diameter, and is to extend from end to end of the bar. By this insertion of a rod of wrought into the body of the cast iron rail it is rendered secure against the danger that would result from the breaking of the bar by the passing of a train over it, as while the bar itself rests upon the string-piece the wrought-iron rod will effectually prevent the separation of the broken pieces, and afford an opportunity of substituting a new bar before any further injury would be likely to result.

I am aware that the inserting of bars or rods of wrought-iron within articles made of cast-iron in the operation of casting is not of itself new. Car-wheels are frequently cast with a hoop of wrought-iron inserted in the body of the metal to operate as a chill in the vicinity of the junction of the flange and tread, and this is confessedly a great improvement. Before this had been done such bars or rods had been cast in other articles, but with a different view and for the attainment of a different end.

By the combination of wrought and cast iron in a railroad-bar such bar is materially improved and rendered applicable to a purpose to which it could not otherwise be securely applied.

In the accompanying drawings, Figures 1 and 2 represent the outer ends of two of my railroad-bars, and Fig. 3 a cross-section of one of them in the line *x x* of Fig. 1.

A A is the main body of the bar.

B B are the wings or brackets by which they are to be attached to the string-pieces, said wings or brackets being flush on their under sides with the under side of the bar, so that the whole rests firmly on the string-pieces.

C C are spike or bolt holes, by which the bars are to be fastened down.

D shows one end of the wrought-iron rod, which is to extend from end to end of the bars.

The manner of securing the bars from lateral motion, by causing one bar to project beyond and the other to recede from the adjoining sides of the wings or brackets, is distinctly shown in Figs. 1 and 2.

Having thus fully made known the nature of my improved cast and wrought iron railway-bars and set forth the object of the combination, what I claim therein as new, and desire to secure by Letters Patent, is—

The particular manner of forming the bars at their ends, which is such that the end of one bar, in its whole size, shall be received between the wings or brackets which form the chair, or that part by which the next contiguous bar is attached to the string-piece, as herein described and represented, by which improvement on a cast-iron rail that has a wrought-iron rod inserted in it, I have rendered such bars, when resting on string-pieces, perfectly safe, and am enabled to substitute a cheap for a costly rail.

JAMES M. BAY.

Witnesses:

THOS. P. JONES,

EDWIN L. BRUNDAGE.