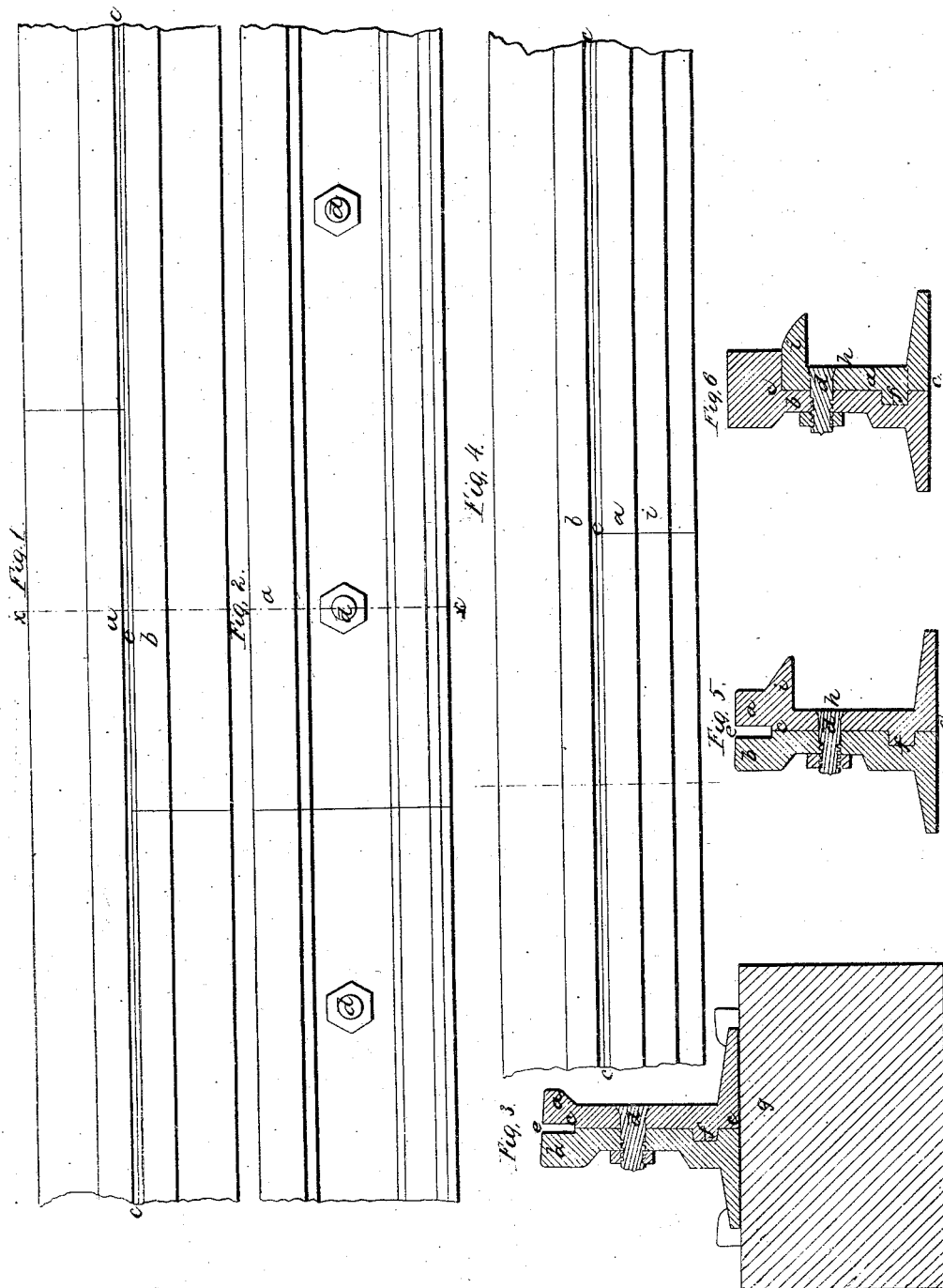


A. B. Seymour.

Railroad Rail Joint.

N^o 6,141.

Patented Mar. 13, 1849.



UNITED STATES PATENT OFFICE.

ALFRED B. SEYMOUR, OF BORDENTOWN, NEW JERSEY.

IMPROVED COMBINED RAIL-ROAD BAR.

Specification forming part of Letters Patent No. 6,171, dated March 13, 1849.

To all whom it may concern:

Be it known that I, ALFRED B. SEYMOUR, of Bordentown, in the county of Burlington and State of New Jersey, have invented new and useful Improvements in Iron Rails or Bars for Railroad-Tracks; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a side elevation; and Fig. 3, a cross vertical section of a railroad bar or rail on my improved plan; and Figs. 4, 5, and 6 are plans and cross vertical sections of different modifications of my improved rails.

The same letters indicate like parts in all the figures.

Experience has shown that the destruction of the iron rails or bars of railroads is due in a very slight degree to the actual wear of the iron by the treads of the wheels, and that it is mainly due to the fact that the ends of the sections where they are joined together by a chair rest on an iron bed, while the other portions rest on wood, and that the junction thus formed is very imperfect and yields to the action of trains passing over them. From these two circumstances the ends that rest on the iron chair are exposed to the wearing action of the wheels to an extent far greater than would be due to the simple wear by the passage of the wheels over them if they had an equal bearing from end to end and were permanently and unyieldingly connected together from end to end. Another fruitful source of destruction is to be found in the lateral action of the flanges of the wheels, which, acting on the separate sections, causes them to yield at their junctions, thus exposing the ends to the guiding action of the flanges.

The leading object of my improvements is to remedy these evils with the view to render the rails or bars of railroads more durable, and at the same time to obtain a more equal bearing to avoid the jars in railroad-trains consequent on their passage over rails that have their bearing alternately on iron and on wood.

With these views the nature of my invention consists, first, in making the iron rails of railroads in two parts, divided by a vertical and longitudinal plane passing through the middle or near the middle of the thickness of the rail and then securing them with screw or key-bolts, breaking the joints so as to have the junctions of the sections of the one half at or about the middle of the sections of the other half, the face of one of the halves being formed with a fillet received and fitted in a corresponding groove in the other, thus preventing the junctions of the several sections from yielding or moving when under the action of passing trains.

My invention also consists in making a groove at the junction of the two halves of the rail at top that the metal when beaten down by the passage of trains may spread therein and avoid the straining of the securing-bolts by the spread of the two parts of the rail.

In the accompanying drawings, Figs. 1, 2, and 3, *a* represents the inner and *b* the outer half of a railroad bar or rail united at a longitudinal vertical plane represented by the line *c c*. Each half is made in sections of the usual length, and when put together to complete the rail the junctions of the sections of the one half are placed in the middle, or nearly so, of the sections of the other half, or, as it is technically termed, "breaking joints," and then they are firmly secured together by means of screw-bolts *d*. The inner face of each half of the rail at the top and extending down about half an inch is made with a rabbet, so that when the two halves are put together these rabbets form a groove *e* the whole length of the rail to give room for the iron to spread when beaten down by the passage of trains over them, and thus avoid the tendency to spread the two halves apart. Without this it will be obvious to those who are acquainted with the properties of iron and the action of trains on railroads that the spreading of the iron when beaten down by the passage of trains would tend to separate the two halves and exert a great strain on the securing-bolts. The inner face of one half of each rail is provided with a fillet *f* running the whole length, which is received and fitted into a corresponding groove in the inner face of the other half. This locking of the two halves, in addition to the se-

ries of bolts, prevents the several sections from moving on one another, and in this way a continuous unbroken rail can be made of any length desired without the use of iron chains or clamps, such as are generally used for the union of the several sections of a railroad-track. The rails thus formed are laid and secured onto the wooden stringers *g* by means of hook-headed spikes in the usual manner, every part of the rail having the same elastic bearing, and therefore avoiding all the evils due to an unequal bearing, such as is attained by having the main part resting on wood and the ends of the sections resting on the base of iron chairs.

To avoid the lateral action of the flanges of the wheels against the edges of the rails, I make the inner vertical face of each rail below the swell that forms the bearing for the wheels flat, as shown at *h*, Figs. 4 and 5, and the holes for receiving the securing-bolts are countersunk to receive the heads thereof that they may be flush, and thus form a fair surface against which a wheel may run, if desired to use the rails with guide-wheels to guide the cars and prevent the flanges of the main wheels from grinding away the edge of the rail. Such guide-wheels have been used with rails otherwise formed, and therefore it is deemed unnecessary to represent them. When such guide-wheels are to be used, I make the rail with a projecting lip *i*, having the under face horizontal, or nearly so, that the upper faces of the guide-wheels, which when used are horizontal, may strike against the under face of this lip to prevent the car from being lifted up from the track, and thus prevent it from running off. Instead of making the plane *c c* which divides the rail extend entirely through the whole height of the rail, it may be made to extend from the bottom of the rail to within a short distance of the top, as shown in Fig. 6, and in this way avoid a seam or division on the upper surface. When thus made, the lip *i* for preventing the cars from being lifted up may be formed on that part of the rail which does not extend up to the upper surface; or, in-

stead of this, the lower part or web, as well as the top, can be made without being divided, as shown in Fig. 6 by dotted lines; but I prefer to make the rails with the dividing plane passing up vertically through the whole height, as first described.

I am aware that the sections of rails for railroads have been united by means of a clamp-plate and screw-bolts; but this does not attain the object contemplated by me, for such clamp-plates being short do not give the firmness and stability attained by my method of construction, and therefore I wish it to be understood that I do not claim as of my invention the use of mere clamp-plates and screw-bolts for the union of the sections of rails or bars of railroads.

I am also aware that rails have been made in two or more parts divided by a longitudinal plane or planes; but when so made the upper part constituting a cap is made separate from and attached to the base, and I do not, therefore, simply claim making rails in two parts when the top part depends alone on the bolts to keep it down; but

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

1. Making such rails in two parts divided by a longitudinal and vertical plane when brought together and united by breaking joints and secured by screw-bolts, keys, or their equivalents, so that the junctions of the sections of one part shall be in the middle or near the middle of the sections of the other part, substantially as described.

2. Making a recess or groove at the junction of the two parts of the rail at the top, substantially as described, that the iron when beaten down by the action of the wheels of railroad-trains may spread therein without having a tendency to force apart the two halves and strain the securing bolts or keys, as described.

ALFRED B. SEYMOUR.

Witnesses

A. P. BROWNE,
CHS. M. KELLER.