

(No Model.)

C. WILCOX.
RAILWAY RAIL JOINT.

No. 348,484.

Patented Aug. 31, 1886.

Fig. 1.

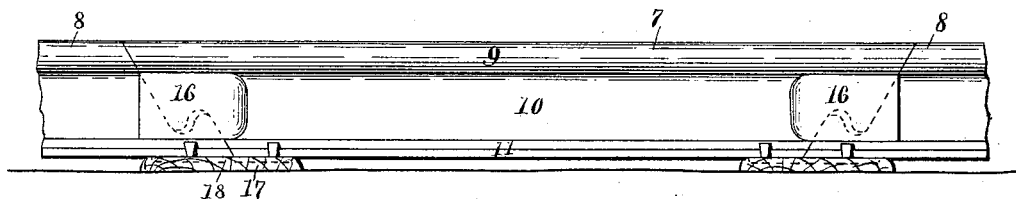


Fig. 2.

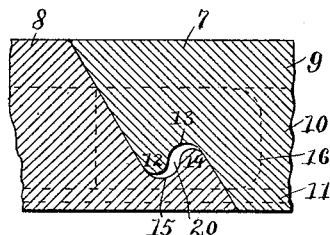


Fig. 3.

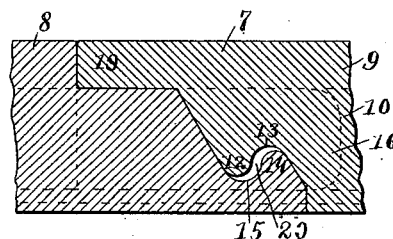


Fig. 5.

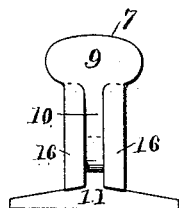


Fig. 6.

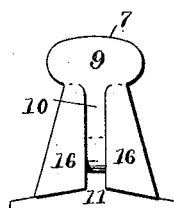
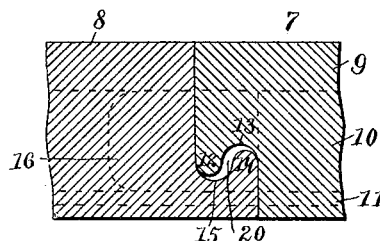


Fig. 4.



WITNESSES:

Chas. H. Luther Jr.
Willis Fowler.

INVENTOR:

Clark Wilcox
by Joseph S. Miller & Co
Attys

UNITED STATES PATENT OFFICE.

CLARK WILCOX, OF APPONAUG, RHODE ISLAND.

RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 348,484, dated August 31, 1886.

Application filed February 25, 1886. Serial No. 193,100. (No model.)

To all whom it may concern:

Be it known that I, CLARK WILCOX, of Apponang, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Railway-Rails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to the metallic rails ordinarily employed in railways for the wheels of the car-trucks to track on.

In the construction of railways it is a great advantage to use no bolts in fixing the abutting ends of the rails rigidly together, and also to maintain the rails in approximate alignment, and to have their upper surfaces on a level with each other.

The object of my invention is to accomplish the above-described advantages by means of the new and peculiar construction and arrangement of the several parts, as hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a portion of the railway-track constructed with my improved rails. Fig. 2 represents an enlarged longitudinal sectional view of the joint of two of my rails, both shown in part. Fig. 3 represents same view as Fig. 2 of a modified form of my joint. Fig. 4 represents same view as Figs. 2 and 3 of a still further modified form of my joint. Fig. 5 represents an enlarged end view of my so-called "lock-rail." Fig. 6 represents an enlarged end view of a modified form of my lock-rail.

In the said drawings like numbers designate like parts throughout.

Referring to the drawings, 7 designates the so-called "lock-rail," and 8 the intermediate rails, the latter are shown in parts only in the figures of said drawings. In cross-section these rails are like the ordinary American or H rail, having the large solid head 9, the supporting-web 10, and the broad base 11, which extends with a flat foot to each side of the web 10. The abutting ends of the lock-rail 7 are cut under diagonally in a straight plane and transversely of the rail to a little below the center of web 10. The cut then curves inwardly toward the body of said rail, then upwardly to about the center of said web, there-

by forming the coupling-ridge 12. Then it curves inwardly and downwardly slightly, thereby forming the depression 13. Then it runs diagonally and parallel to the above-described diagonal plane to the under surface of said rail. The abutting ends of the intermediate rails, 8, are cut similar to the lock-rail 7, but in an opposite manner. The rails 8 have the coupling-ridges 14 and depressions 15, which parts couple and lock with the conformed depressions 13 and ridges 12, respectively, on said lock-rail. At the ends of the lock-rail 7 I fix the fish-plates 16, integral with the web 10, and one on each side of the web. The fish-plates 16 are approximately rectangular in shape, and flat. Their outer ends are cut squarely off and extend to the outer end of the undercut head 9, so that they project entirely over upon the part of the webs 10 of the intermediate rails, forming the joints, and fit snugly against said webs. The construction of these fish-plates (see Fig. 5) will prevent any lateral play of the end of one rail relative to the adjacent one, and will maintain the abutting ends of the rails in alignment, as shown in Fig. 1, which represents the rails as spiked down upon the cross-ties 17, and their cross-joints resting across the center of the bed-plates 18, to prevent the ends of said rails from being depressed into the ties. The fish-plates 16 afford a very rigid bearing between the heads 9 of the lock-rail 7 and the bases 11 of the intermediate rails, 8, thereby preventing still more the liability of the ends of said rails from being depressed one before the other, by the rolling-stock, and thus keeping the upper surfaces of the rails in approximately the same plane.

In Fig. 6 I show a modified form of the fish-plates 16, in which they are merely thickened and broadened out at their bases.

In the modification of the cross-joint, Fig. 3, I show the head 9 of rail 7 projecting at 19 beyond its web, and extending over and lying upon web 10 of rail 8, and with the abutting ends of the heads of said rail as straight across, instead of diagonal. The cut of the webs of both rails in this form is the same as in the primary form, while the bases are cut straight off, like their heads. In this form the heads of the rails can withstand very great pressure,

since they are solidly supported, and the fish-plates 16 are much longer than in the primary form, and perform the same office.

The modification of Fig. 4 shows the same form of joint as the primary form, without the diagonal cut, which is here vertical. The fish-plates in this form are constructed the same and form the same rigid supports, but are arranged upon the intermediate rail, as shown.

Between the coupling parts of my rail-joints I show the scroll-shaped space 20 as quite an appreciable space when the rails are in an expanded state, as I show in all the joints. This space 20 allows considerable freedom in the movement of the rails, when by contraction under low temperature they move or creep up in direction of their lengths. These rails are laid with spaced joints, as ordinary rails.

When my rails are in a contracted state, the spaces 20 are well-nigh closed up, and the other parts of the joints, shown as closed, are opened quite a distance.

It is obvious that a track constructed of my rails will have the rails maintained in good alignment, with their upper surfaces kept in a level condition while the car-wheels are passing over the joints, and thereby will prevent to a great extent the injurious hammering of the wheels over the joints.

The rails may be constructed of any suitable material, and there may be various modifications made in my peculiar joint without substantially departing from the spirit of the invention, as herein described and claimed. For instance, the lock-rail may have one end different from the other and in the form of the end of the intermediate rail, without the fish-plates, which would then be on the intermediate rail, and in this case all the rails would be exactly alike.

I am aware of the heretofore construction of rails provided at their abutting ends with transversely-disposed extensions or tongues,

and the adjacent rail having oppositely-arranged grooves or recesses in conformation to the said first rail end, and the webs of the rails formed with locking side pieces. Therefore I do not broadly claim the rail-joint made in such a manner; but,

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

1. A rail-joint formed by the abutting end of one rail having a transversely-disposed rounded ridge projecting downwardly, and of the adjacent abutting end of the other rail having an upwardly-extending rounded ridge transverse of the rail, said ridges partially conforming the one to the other, whereby the lack of conformation may produce a space between the abutting ends of the rails, substantially as described.

2. In combination, an abutting end of one rail formed with a transversely-disposed rounded coupling-ridge extending downwardly, an adjacent abutting end of another rail formed with a transversely-disposed rounded coupling-ridge projecting upwardly, and the fish-plates integral with the web of one of said rails and projecting beyond the end thereof and fitting against the sides of the web of the adjacent rail, substantially as described.

3. The rail-joint consisting of the abutting ends of rails 7 and 8, formed with the coupling-ridges 12 and depressions 13 and the coupling-ridges 14 and depressions 15, respectively, substantially as described.

4. The combination, with the rail 7, provided with the integral fish-plates 16, and having the ends formed with the coupling-ridges 12 and depressions 13, of the rails 8, having their abutting ends formed with the coupling-ridges 14 and depressions 15, substantially as and for the purpose described.

CLARK WILCOX.

Witnesses:

M. F. BLIGH,

J. A. MILLER, Jr.