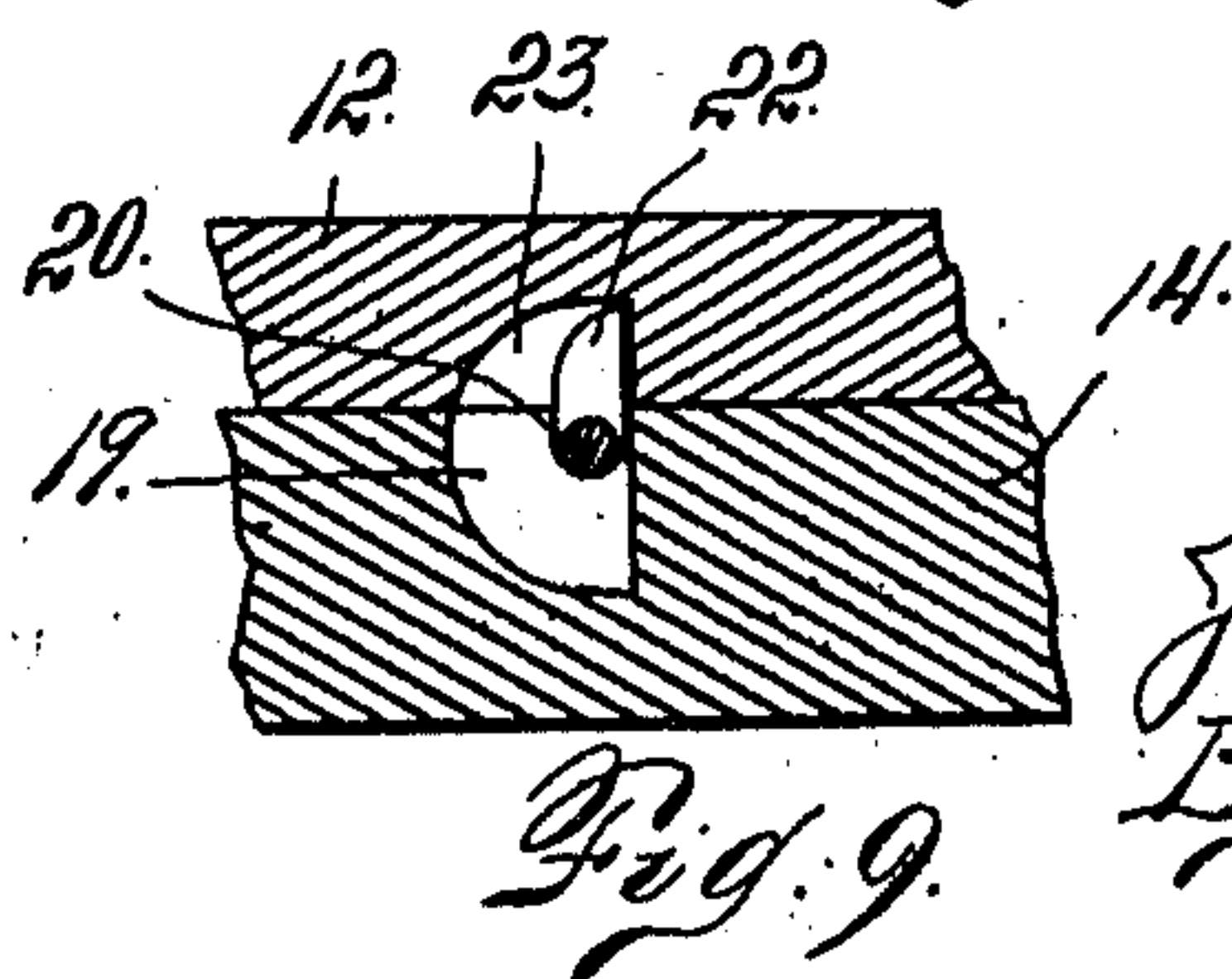


# RAIL JOINT.

**982,821.**

Patented Jan. 31, 1911.



Witnesses  
Otto E. Hoddick.  
J. D. Thornburgh.

Inventor  
John F. Hudson  
By A. J. O'Brien.  
Attorney



# UNITED STATES PATENT OFFICE.

JOHN F. HUDSON, OF RADIUM, COLORADO.

## RAIL-JOINT.

982,821.

Specification of Letters Patent.

Patented Jan. 31, 1911.

Application filed April 26, 1909. Serial No. 492,375.

*To all whom it may concern:*

Be it known that I, JOHN F. HUDSON, a citizen of the United States, residing in the city of Radium, county of Grand, and State of Colorado, have invented certain new and useful Improvements in Rail-Joints; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in railway rail joints, my object being to form a joint of such character as to make a practically continuous rail, and avoid the jarring effect incident to the passage of trains over tracks of ordinary construction, in which the adjacent rail ends are separated to leave a gap or space between them, which allows the wheel of the car to move downwardly to a perceptible extent while passing over the joint.

In my improved construction, the adjacent rail ends are fashioned to overlap each other longitudinally for a suitable distance, whereby short transverse offsets only are formed, whereby the wheels are prevented from moving downwardly at the rail joints. I also provide a locking device, whereby the rail ends are connected and locked together without the use of bolts, but by a simple key, and when assembled making the joint the most durable part of the rail.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a top plan view of a rail joint constructed in accordance with my improvement. Fig. 2 is a side elevation of the same. Fig. 3 is an elevation viewed from the side opposite that shown in Fig. 2. Fig. 4 is a cross section taken on the line 4—4, Fig. 1, the parts being shown on a larger scale. Fig. 5 is a perspective view showing two adjacent rail ends constructed in accordance with my improvement, the rail ends being separated. Fig. 6 is a perspective view illustrating the locking key. Fig. 7 is a perspective view illustrating a block forming one member of the rail joint locking means. Fig. 8 is a

similar view showing the cooperating member of said locking means. Fig. 9 is a vertical section taken through the locking mechanism taken on the line 9—9, Fig. 4.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the rails whose extremities are to be united. The treads of these rails are cut away at their extremities on diagonal lines 6, one extremity of this line terminating in a shoulder or offset 7, while the other extremity terminates in a narrow rail end 8, adapted to engage the offset or shoulder 7 of the opposite rail. The two tread portions of the adjacent rail ends, cut away as aforesaid, are adapted to overlap each other (see Fig. 1) when the joint is completed. The flanges of the rails are simply cut away on diagonal lines 9, each line terminating at one extremity in a shoulder or offset 10 and at the other extremity in a relatively narrow end 2, adapted to engage the shoulder or offset 10 of the opposite rail. Attention is called to the fact that the diagonal lines 6 and 9, of each rail end, are arranged crosswise of each other, thus increasing the strength of the joint and preventing the separation of the rail ends by a lateral movement when assembled in interlocking relation.

The web of the rail is cut away between the overlapping tread parts A and the overlapping members B of the base, forming an opening to receive a block 12 whose upper surface is grooved as shown at 13 to engage the undersurface of the overlapping members A of the tread of the rail. The block 12 is held in the position just explained by a cooperating locking member 14 having a central portion 15 adapted to enter the web opening below the block 12, the part 15 forming a support for the block and holding the latter in the proper position. Beyond the central part 15 of the member 14, the latter is equipped with lugs 16, which enter openings 17 formed in the webs of the two rails on opposite sides from the opening which is entered by the part 15, thus giving the lock additional strength and security. The member 14 is of sufficient length to reinforce the web on opposite sides of the joint.

The central portion 15 of the member 14 is provided with a top recess 18, at one side of which is located a recess 19 communicating with the recess 18. When the parts are assembled a part 20 of a locking key 21 is



passed through the recess 18 for locking purposes, the same being provided with a tongue 22 adapted to enter the recess 19 and also to enter a recess 23 formed in the block 12 and communicating with the recess 19. The key 21 is provided with a protruding crank handle 24 which also serves as a weight to maintain the key in the position shown in Fig. 4 or so that the tongue 22 shall normally engage the recess 23 of the block 12, whereby the key is prevented from accidental removal and the locking members 12 and 14 held in place. When it is desired to disconnect the rail ends, it is only necessary to turn the key 20 sufficiently to throw the tongue 22 downwardly into the recess 19 of the member 14, in which event the last named member, together with the key may be removed from the rails, after which the block 12 being unsupported will move downwardly disengaging its groove 13 from the members 6 of the treads of the rails.

From the foregoing description, the use of my improved rail joint will be readily understood. Assuming that the rail ends are fashioned as illustrated in the drawing and heretofore described, if it is desired to connect the rail ends or form the joint in accordance with my invention, the two ends are brought together as illustrated in Figs. 1, 2 and 3 after which the block 12 is first passed through the opening in the web and raised to bring its groove 13 into engagement with the undersurface of the members 6 of the adjacent rail ends. The locking member 14 is then applied, its central portion 15 passing through the web opening below the block 12 and forming a support therefor. Before applying the member 14, however, the key is applied thereto by placing the part 20 in the recess 18, the key being turned to cause the tongue 22 to engage the recess 19. When in this position, the key offers no obstruction to the insertion of the part 15 into the web opening below the block 12. As soon as this is done, the operator releases the handle 24 of the key which moves downwardly by gravity to the position shown in Fig. 4, causing the tongue 22 to enter the recess 23 of the block 12. The members of the joint are then locked securely in place against accidental removal. At the same time that the member 15 enters the web opening between the parts A and B of the rail extremities, the lugs 16 enter the opening 17.

Having thus described my invention, what I claim is:

1. In a rail joint, the combination with the rail ends having the adjacent extremities of the webs removed between the base and the tread, and locking means composed of two members inserted in the web opening, one of the said members consisting of a block adapted to interlock with the tread ex-

trémities of the rails above the web opening, the other member occupying a position below the block and maintaining it in the assembled relation.

2. In a rail joint, the combination with the abutting rail ends having a central opening formed in the webs between the extremities of the treads and bases of the rails, and means for connecting the rail ends composed of two members engaging the web opening, one of the members being interlocked with the rail ends and a key for interlocking with adjacent slots of the two members to prevent accidental removal.

3. In a rail joint, the combination of two rails, the treads of whose extremities are fashioned to longitudinally overlap, an opening being formed in the webs of the rails below the tread, and means engaging said opening for locking the rail extremities in the assembled relation, the said means consisting of two blocks, one supported by the other against the under side of the tread of the rails, and a key for interlocking the said members, substantially as described.

4. In a rail joint, the combination with two rails, the treads of whose extremities are cut away on diagonal lines to form offsets, whereby the two rail ends are caused to overlap longitudinally, the webs of the rails having an opening below the tread ends and two blocks inserted in the said openings, one of the blocks engaging the under side of the tread of the rails and the other resting on the base of the rail, and means for interlocking the two blocks for securing the rail ends in the assembled position, substantially as described.

5. In a rail joint, the combination with two rails, the treads and bases of whose extremities are cut away on diagonal lines to allow them to overlap longitudinally when in alinement, the web of the rail between the overlapping tread and base portions being cut away to form an opening, and two blocks inserted in said opening, one of the said blocks being adapted to interlock with the tread of the rail extremities, and the other with the base of the rail extremities, whereby the ends are held against displacement, substantially as described.

6. In a rail joint the combination of the two rails, the webs of whose adjacent extremities are cut away to form an opening between the tread ends and the base ends of the rails, two members inserted in the web opening, one of which is interlocked with the rail ends, one of the members being provided with a transverse opening and a recess communicating with said opening and extending therefrom longitudinally of the rail, the other member also having a recess registering with the first named recess of the other member, and a key inserted in said opening and having a tongue adapted to



engage the recess of either rail member according to the position of the key, the latter having a protruding portion forming a weight to hold the tongue of the key in a predetermined position for the purpose set forth.

7. In a rail joint the combination with the two rails, the webs of whose extremities are cut away to form an opening between the bases and treads of the rails, a block inserted in said opening and having its upper surface grooved to engage the lower surfaces of the tread ends of the rails, and a second member inserted in the web opening below the first named member and maintaining the latter in the aforesaid position, the second member having a registering recess, and a locking key adapted to enter the opening of one member and provided with a tongue adapted to enter the recess of either member, the key having a protruding portion serving as a weight to maintain the tongue in a predetermined position, substantially as described.

8. In a rail joint the combination of the

two rails, the webs of whose adjacent extremities are cut away between the tread and base ends, the webs being also provided with openings located beyond the first named cut away portions, a block inserted in the first named web opening and having its upper surface grooved to receive the treads of the adjacent rail ends, and a locking member whose central portion is adapted to engage the web opening below the said block, the said member being also provided with lugs located beyond the said central portion and adapted to enter the recesses of the webs located beyond the first named opening, and means for securing the cooperating block and locking member in their assembled relation with the rail end extremities, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. HUDSON.

Witnesses:

JESSIE F. HOBART,  
A. EBERT O'BRIEN.