

(No Model.)

2 Sheets—Sheet 1.

J. N. WILSON.
RAILWAY RAIL JOINT.

No. 513,695.

Patented Jan. 30, 1894.

Fig. 1.

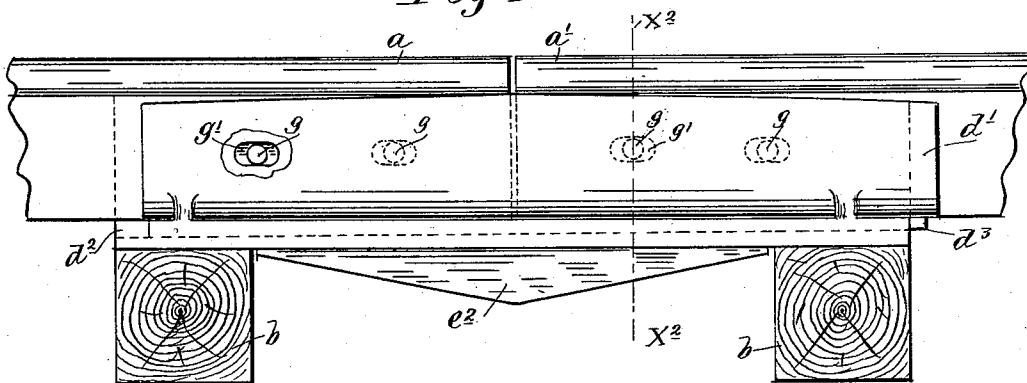


Fig. 2.

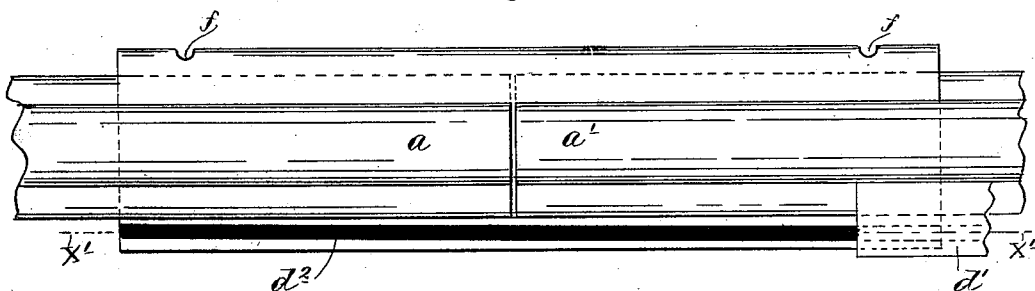


Fig. 3.

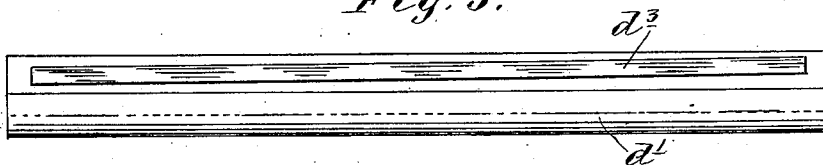
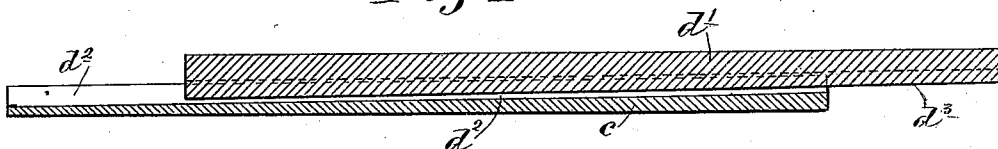


Fig. 4



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Fig. 5.

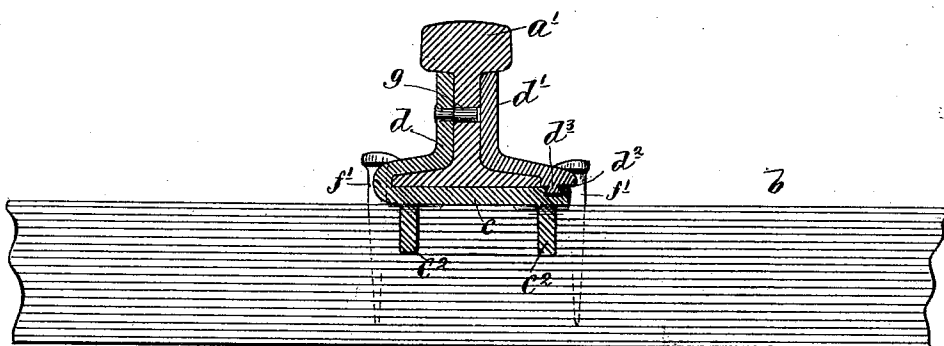


Fig. 8.

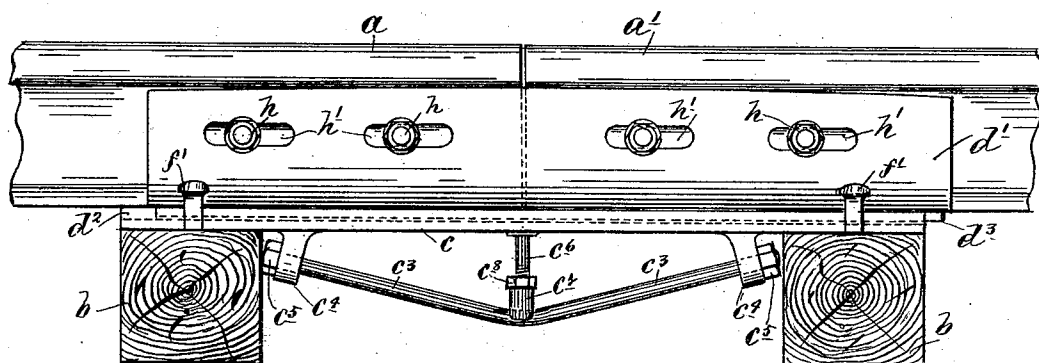


Fig. 9.



Fig. 7.

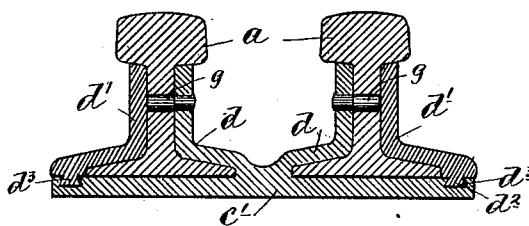
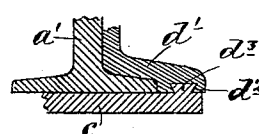


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES N. WILSON, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF
TO GEORGE W. FREY, THOMAS A. WHITWORTH, AND ROBERT E. DORTON,
OF SAME PLACE.

RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 518,695, dated January 30, 1894.

Application filed July 6, 1893. Serial No. 479,733. (No model.)

To all whom it may concern:

Be it known that I, JAMES N. WILSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Railway-Rail Joints; and I do hereby 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.

My invention has for its object to provide an improved railway rail-joint.

To this end, my invention consists of the novel features of construction, hereinafter fully described and defined in the claims.

The accompanying drawings illustrate my invention, wherein, like letters referring to like parts throughout the several views—

Figure 1 is an inside elevation of a rail-joint, embodying my preferred construction, some parts being broken away. Fig. 2 is a plan view of the same, with the detachable locking angle-bar, in its entering position. Fig. 3 is a bottom view of the locking angle-bar detached. Fig. 4 is a longitudinal section, on the line $X'X'$, of Fig. 2, with the locking angle-bar driven partly home on its seat in the chair-plate. Fig. 5 is a vertical cross section, on the line X^2X^2 of Fig. 1, looking from the left toward the right. Fig. 6 is a view similar to Fig. 5, with some parts broken away, showing the reverse arrangement of the groove and tenon interlocking joint, connecting the locking angle-bar and the chair-plate. Fig. 7 is a cross sectional view of a double joint suitable for use on frogs. Fig. 8 is an inside elevation of a modified construction employing an underneath adjustable truss; and Fig. 9 is a detail of the same, showing in section the adjustable truss work.

a a' represent the adjoining ends of adjacent rails. b represents supporting ties for the same.

c represents the chair plate, and d d' the angle-bars, which parts together constitute the irons of the rail-joint. Of these parts, at least one of the angle-bars is detachable, and engages with the chair-plate by means of an interlocking joint.

In my preferred construction, one of the angle-bars, as d , is formed integral with the chair-plate c , which parts co-operate to form a rigid seat for the ends of the adjacent rails a a' ; and the other angle-bar d' engages with the chair-plate by an interlocking joint, the interlocking parts of which d^2 d^3 , are shown as of the groove and tenon dove-tail form. These interlocking parts d^2 and d^3 are so constructed and related to each other, and to the chair-plate c and angle-bar d' , that they engage by an endwise movement and with an inward or lateral and a downward drawing action. As shown, in the principal views, the groove d^2 in the chair-plate, is formed on an inward incline, with respect to the edge of the chair plate, as clearly appears in Fig. 2, and is of a greater depth at its rearmost than at its receiving end, as is clearly shown in Fig. 4; while the tenon d^3 on the locking angle-bar d' is also placed on an inward incline, with respect to the outer edge of the said bar, as appears in Fig. 3, and is deeper at its entering than at its rearmost end, as is shown in Fig. 4. It is obvious, that the effect of this construction is to give a wedge-like action between the two angle bars, together with the chair-plate, and the ends of the rails embraced thereby, which serves to clamp all the said parts firmly together, and secure the same against tilting or lateral sliding movement. The chair, plate and angle-bars, are provided with spike-notches f , for spikes f' , which when the joint-irons are in proper working position and the spikes are driven home into the ties b , will hold the same in place. The rails will be free to move longitudinally, under expansion and contraction, in the customary way, and the fixed angle-bar d is provided with stop-lugs g , working in corresponding elongated slots g' of the rails, to prevent undue endwise movement of the rails, under the action of the wheels, when the brakes are on.

With my rail-joint, as I have so far described the same, the parts may be secured and held in position, without the use of cross-bolts connecting the angle-bars. This is an item of economy; and besides, with my construction, I obtain a firmer and more reliable

railway joint. I prefer to make the ends of the vertical flange of my locking angle-bar d' slightly tapering on their upper edges, to give easier entrance into its driving position; and
 5 I construct the central part of the said flange of full possible height, so as to afford a close bearing of the same at the joint between the ball portions of the two rails. This prevents the end portions of the rails from being bat-
 10 tered down under the action of the wheels.

The angle-bar d' is of course, entered end-wise into its seat on the chair c , and between the ball and the foot of the rail, by hand, and is driven home by a sledge.

15 It is, of course, obvious, that the positions of the groove and tenon parts $d^2 d^3$, as shown in the principal views, might be reversed, as shown in Fig. 6. It is equally obvious, that the interlocking joint between the locking
 20 angle-bar d' and the chair c , might be formed in any other way, which would give the interlocking and the drawing action.

At frogs, or in other positions, where rail-joints of different tracks, are located side by
 25 side, the two fixed angle-bars d , may be formed integral with a common or double chair-plate c' , as shown in Fig. 7.

For affording additional strength, I may re-
 30 inforce the chair-plate c with underneath vertical parts; which may be either in the form of rib-flanges c^2 , as shown in Figs. 1 and 5, or in the form of an adjustable truss c^3 , as shown in Fig. 8. If the truss c^3 is employed, the chair-plate will be provided with truss-lugs
 35 c^4 , through which the truss-rod works, and is adjustable by nuts c^5 , over a suitable truss-yoke; which is shown as adjustable and consisting of the section c^6 , fixed to the chair plate, the hollow section c^7 , telescoping with

the section c^6 and the adjusting screw c^8 , hav- 40
 ing screw-threaded engagement with the section c^6 and bearing against the section c^7 . With this truss construction, it is obvious, that the truss rod c^3 may be adjusted either
 45 at the ends or by adjusting the truss-yoke.

In case double security is deemed desirable, my angle-bars may of course, be connected by the ordinary cross-bolts and nuts h , as shown in Fig. 8; in which event, the stop-lugs g , shown in the other views, might be dispensed 50
 with, and the bolts h be made to serve that function in the customary way. In Fig. 8, the slots h' , for allowing contraction and expansion of the rails, are shown as in the angle-bars, instead of single slots g' , of the custom- 55
 ary kind in the rails.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The railway rail joint, comprising the combined chair-plate and angle-bar $c d$, hav- 60
 ing the dove-tailed longitudinal groove d^2 set on an inward and downward incline, and the locking angle-bar d' , having the longitudinal dove-tailed tenon d^3 set on an inward incline and formed of greater depth at its forward 65
 than at its rearmost end, substantially as and for the purposes set forth.

2. In a railway rail joint, the combination with a horizontal chair-plate, of an adjustable truss yoke, and an adjustable truss-rod 70
 applied to said plate, substantially as and for the purposes set forth.

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

JAMES N. WILSON.

Witnesses:

EMMA F. ELMORE,

A. H. OPSAHL.