No. 631,353. Patented Aug. 22, 1899.

H. M. WILLIAMS.

RAIL JOINT.

(Application filed Dec. 1, 1898.)

(No Model.)

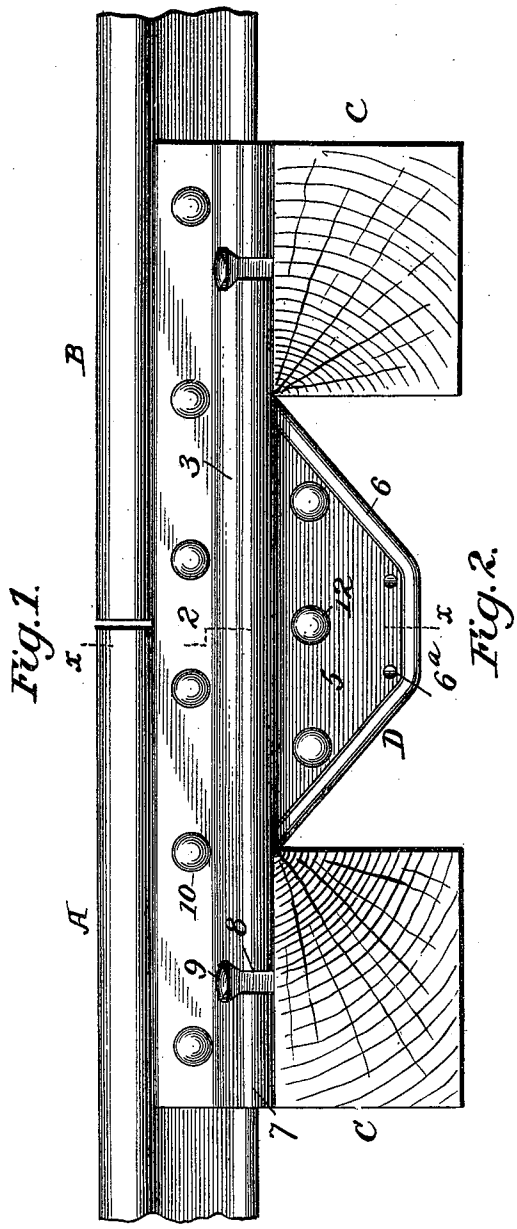


Fig. 1.

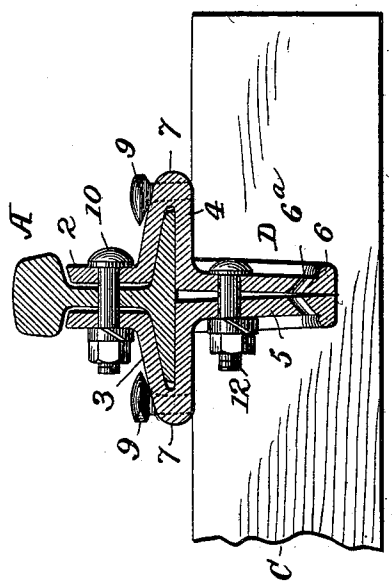


Fig. 2.

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UNITED STATES PATENT OFFICE.

HENRY M. WILLIAMS, OF FORT WAYNE, INDIANA, ASSIGNOR OF ONE-FOURTH TO FRANZ BURGER, OF SAME PLACE.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 631,353, dated August 22, 1899.

Application filed December 1, 1898. Serial No. 697,997. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. WILLIAMS, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to certain new and useful improvements in rail-joints, having for its object to provide a simple, rigid, and effective joint whereby the ends of abutting rails may be maintained in perfect alinement; and with this object in view the invention consists in the construction and arrangement of parts hereinafter more fully described.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference designate corresponding parts, Figure 1 is a side elevation of two abutting rails with a joint embodying the invention applied thereto, parts of the rails being broken away; and Fig. 2 is a cross-sectional view taken on the line *x x*, Fig. 1.

Referring more particularly to the drawings, A B designate the meeting ends of two abutting rails, which extend over and meet between the ties C C.

D is the rail-joint, applied to the ends of the rails and comprising in the present instance two main sections arranged upon opposite sides of the rails and secured to said rails and to each other.

The sections of the joint are formed in duplicate and are adapted for application to either side of a rail. Each of said sections is formed with a vertical portion 2, an inclined portion 3, a horizontal portion 4, and a depending portion 5. The vertical portions 2 of the joint-sections normally rest wholly out of contact with the webs of the abutting rails and are of less width than said webs in order to prevent their coming in contact with the under faces of the heads of the rails. The inclined and horizontal portions 3 4 of the sections are adapted to receive the bases of the rails between them and conform to the upper and lower faces thereof, respectively, and the depending portions 5 are adapted to project below the rails between two adjacent cross-ties. In order that this may be accomplished, the depending portions 5 are of less length than the joint-sections and preferably, though not necessarily, the depending portions of opposing sections are inclined with respect to each other, so that their only point of contact will be at their lower edges. In other words, they diverge upwardly from their lower contacting edges to the bases of the rails. To the end that the greatest degree of strength may be imparted to the depending portions by the employment of a minimum amount of metal, the said portions are provided upon their outer faces, at the edges thereof, with strengthening-ribs 6. It is desirable too that the joint-sections be strengthened at the point of intersection of the inclined portions 3 and horizontal portions 4, and to this end they are formed much thicker at these points, as shown at 7. Within these thickened portions are formed recesses 8 for reception of spikes 9, which not only secure the joint-sections to the cross-ties and prevent lateral displacement thereof, but likewise serve to hold the sections against longitudinal movement.

In practice the joint-sections are placed upon opposite sides of two abutting rails. Bolts 10 are then passed through coinciding holes in the vertical portions 2 and the webs of the rails and tightened, and while the said vertical portions are not drawn into contact with the webs of the rails the bolts serve to prevent them from moving in a direction away from the rail-webs. The depending portions 5 of the joint may then be drawn together by means of bolts 12, passing through them immediately below the rails to cause the inclined and horizontal portions of the joint-sections to closely conform to and clamp the rail-bases, the lower edges of the depending portions being brought into close contact.

From the foregoing description it will be apparent that a simple and cheap rail-joint is constructed of a relatively small amount of metal, which is so shaped and distributed that it possesses great strength at those points where it is most needed. Moreover, it will be evident that by arranging the vertical portions of the joint-sections out of contact with the heads and webs of the rails they are relieved of all strain which is ordinarily imposed upon them, such strain being taken up by the depending portions of the joint,

and consequently there is little liability of the securing-bolts and joint-sections becoming loosened. By reason of the close engagement of the joint-sections with the upper and lower sides of the rail-bases and the extent of such engagement the rails are tightly held and all liability of lateral swaying under strain is prevented. It will be obvious also by reason of the fact that the vertical portions of the joint are out of contact with the webs of the rails the joint-sections may be tightened and a more uniform and extensive engagement thereof with the rail-bases secured than would be possible if they rested in contact either with the rail heads or webs.

Without limiting myself to the exact construction of the parts shown and described, what I claim is—

1. In a rail-joint, the combination of the rails, joint-sections upon opposite sides of the rails embracing the base-flanges thereof and having vertical portions adapted to rest out of contact with the heads thereof and likewise out of contact with the rail-webs, said sections extending beneath the bases of the rails and adapted to be brought together at the lower edges of their depending portions, means for securing the vertical portions of the sections together, and means for securing the depending portions of said sections together, substantially as described.

2. In a rail-joint, the combination of the rails, joint-sections upon opposite sides of the rails embracing the base-flanges thereof and having vertical portions adapted to rest out of contact with the heads thereof and likewise out of contact with the rail-webs, said sections having oppositely-inclined portions extending beneath the bases of the rails and adapted to be brought together at the lower edges of their depending portions, means for securing the vertical portions of the sections together, and means for securing the depending portions of said sections together, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY M. WILLIAMS.

Witnesses:

GEO. D. CRANE,

FRANZ BURGER.