

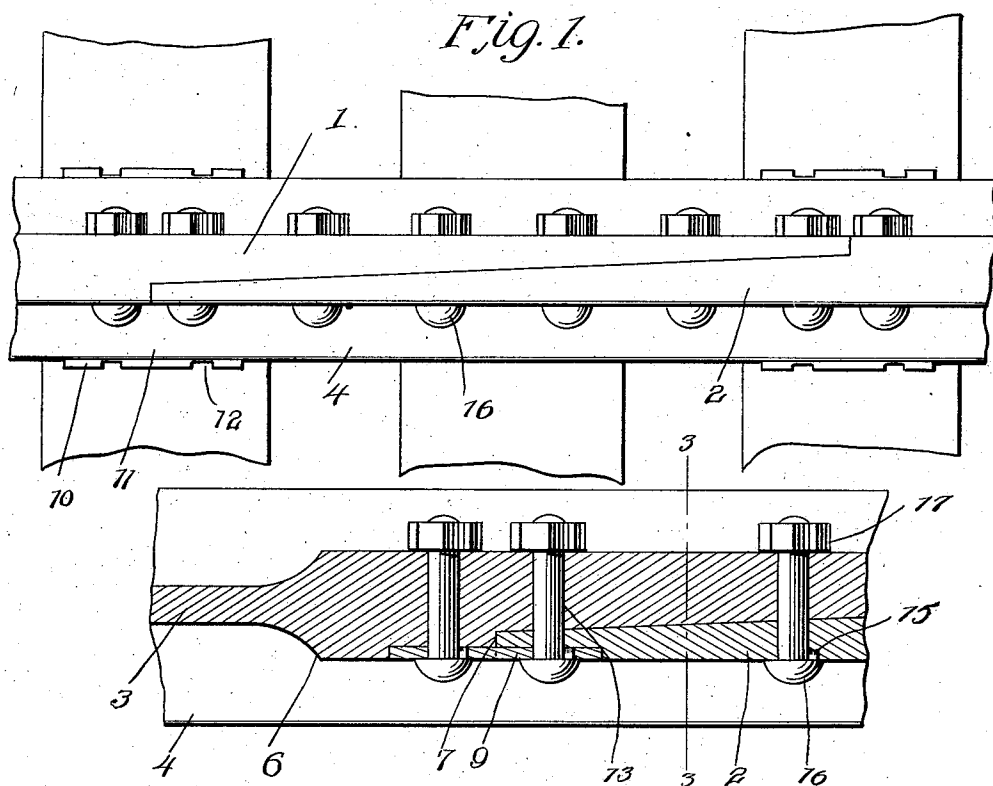


Fig. 3.

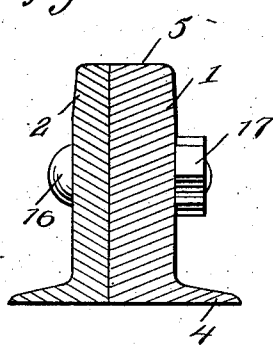
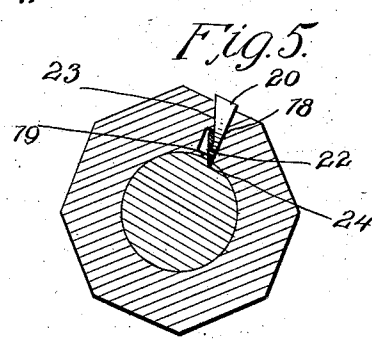


Fig. 4.



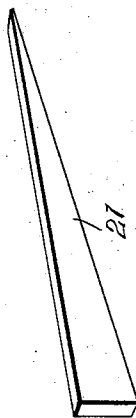
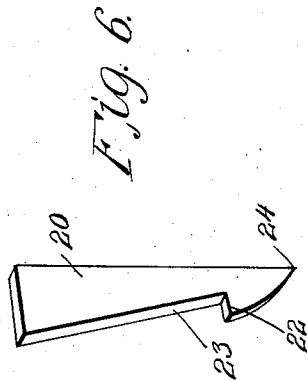
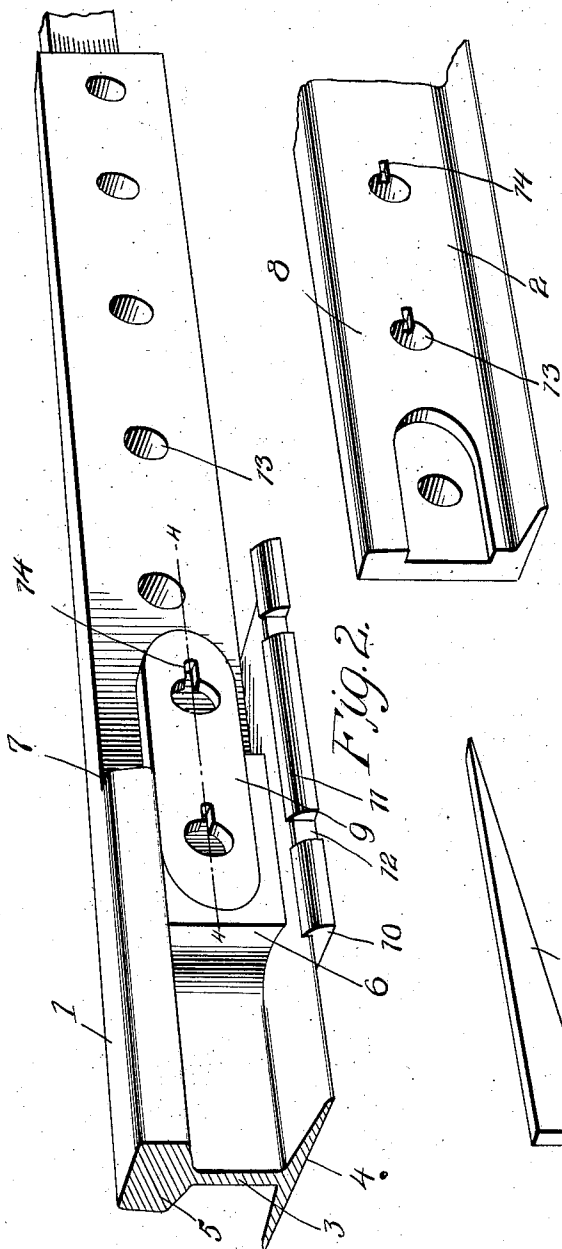
Witnesses
William Smith
James A. Kael

Inventor
Willis L. Lyons.
By Victor J. Evans
Attorney

1,027,489.

W. L. LYONS.
 SPLICE RAIL JOINT.
 APPLICATION FILED DEC. 10, 1910.

Patented May 28, 1912.
 2 SHEETS—SHEET 2.



Witnesses

William Smith

James A. Keel

Inventor
 Willis L. Lyons.

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

WILLIS L. LYONS, OF THOMASVILLE, GEORGIA.

SPLICE RAIL-JOINT.

1,027,489.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed December 10, 1910. Serial No. 596,622.

To all whom it may concern:

Be it known that I, WILLIS L. LYONS, a citizen of the United States of America, residing at Thomasville, in the county of Thomas and State of Georgia, have invented new and useful Improvements in Splice Rail-Joints, of which the following is a specification.

This invention relates to splice rail joints, the object of the invention being to provide substantially identically constructed rail ends, each having a relatively long combined web and ball-forming portion tapered throughout its length and constructed so that its tread portion of greater diameter will be disposed at and also immediately adjacent to its outer extremity where it abuts against the opposite rail end so as to greatly strengthen the joint and to insure against any sagging of the rail ends at their points of immediate engagement with each other.

Another object of the invention is to provide a chair supporting the rail ends at the joint and constructed to prevent the lateral separation or spreading of the rail ends and to also provide in connection with the chair a novel form of coupling plate secured to the rail ends and operating to hold the rail ends against relative movement vertically.

In the drawings, forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views:—Figure 1 is a plan view of the splice joint. Fig. 2 is a perspective view thereof showing the rail ends separated. Fig. 3 is a section on line 3—3 of Fig. 4. Fig. 4 is a longitudinal section on line 4—4 of Fig. 2, showing the rail ends connected with each other. Fig. 5 is a transverse section through one of the clamping bolts showing my improved nut lock therefor. Fig. 6 is a perspective view of the locking element. Fig. 7 is a perspective view of the retainer.

My improved splice joint comprises substantially identically formed rail ends 1 and 2, each of which being provided with the usual web portions 3, the base flange 4 and the ball 5. At the end, each rail has its web portion enlarged, as at 6, so that its diameter is equal to the diameter of the ball of the rail. The rail end is rabbeted so as to form a vertical shoulder 7, and as illustrated, the rail end is formed with a combined ball and web portion 8 which extends outwardly

from the shoulder 7. The said ball and web portion is tapered longitudinally throughout so that its portion of greatest diameter is located immediately adjacent to the shoulder 7. The enlarged portion 6 and the combined ball and web portions 8 respectively are formed at each joint with alining longitudinally extending recesses in which joint plates 9 are removably fitted, at each joint of the rail and one on each side. These joint plates operate in the most efficient manner to prevent the rail ends from sagging or from causing what are commonly called "low joints". In connection with the joint plates 9, I employ chairs 10 each comprising a horizontally disposed plate which extends beneath the base flanges of the rail ends immediately at each joint and directly beneath the joint plate 9. Each chair is formed on its longitudinal edges with vertical flanges 11 which extend against the sides of the base flanges of the rail ends so as to prevent lateral separation or spreading of the rail ends. The flanges 11 are recessed vertically, as at 12, to receive the clamping spikes, (not shown), so as to hold the plates against displacement from the ties.

The combined ball and web portion 8 of each rail end is formed with a longitudinal series of apertures 13 which are coincident with each other when the rail ends are connected together. The joint plates 9 are formed with corresponding passages to aline with those passages in the rail ends which are located immediately adjacent to the shoulders 7. The passages 13 in one of the rail ends are each formed with a longitudinal offset portion 14 in which the lug 15 of the clamping bolt 16 is seated, the purpose of this construction being to provide means for preventing rotation of the bolt. The clamping nut 17 for each bolt is identically constructed and each is formed with radial passages 18 and with passages 19 which communicate with the said passages 18, as shown. The nut may be of any configuration which may be found most preferred for the purpose, but as illustrated, it is octagonal and the radial recesses therein open at their outer ends directly onto the flat faces of the said nut. After the nut has been finally adjusted upon its bolt the locking element 20 is inserted in one of the radial passages 18, after which a substantially

wedge key 21 is driven into the passages 19 so as to contact with the shoulder 22 and beveled face 23 respectively of the locking element and to cause the pointed end 24 of the element to be driven into the threaded surface of the bolt. In practice, this form of nut lock has been found most effective when used in connection with the specific form of splice joint described.

10 From the construction of the joint described and shown herein, it will be seen that that part of the rail between the joints is of a transverse diameter greatly exceeding the transverse diameter of the web 3.

15 By providing the combined ball and web portions 8 of a longitudinally tapered construction as described, a very broad bearing surface is located immediately at the joint, greatly strengthening the joint and materially assisting in preventing any possible sagging of the rail ends. It may be stated that the combined ball and web portion of each rail end is of a length sufficient to span at least three rail ties so that the portion of

the rails intermediate of the joints will be supported by the intermediate tie. 25

I claim:—

A spliced joint comprising rail ends having enlarged web portion, and a combined ball and web portion extending outwardly from the said enlarged web portion, both of the said portions being formed to provide alining longitudinally extending recesses, joint plates connecting the rail ends with each other, said plates being adapted to be slidably fitted within the said recesses, so as to be made flush with the sides of the web, and to hold the rails against relative movement vertically, fastenings extending through the joint plates and through the said combined ball and web portions respectively. 30 35 40

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

WILLIS L. LYONS.

Witnesses:

JOHN M. DEKEE,
C. M. HURT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."