S. STEPHENS.

RAILWAY JOINT.

APPLICATION FILED NOV. 19, 1909.

960,428. Patented June 7, 1910.

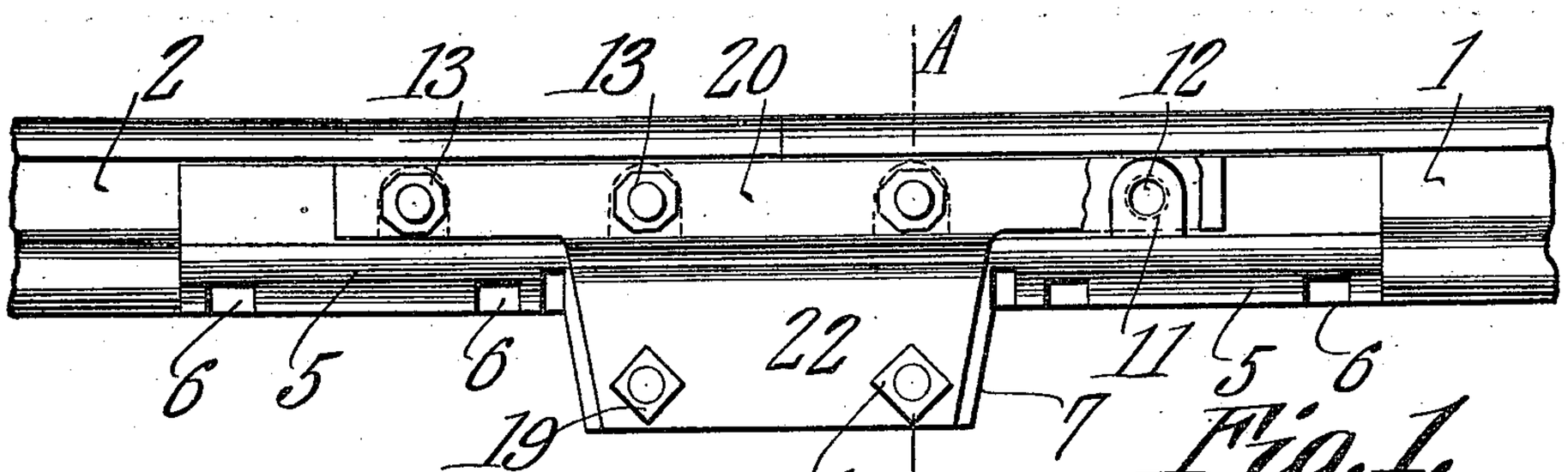


Fig. 1.

Fig. 2.

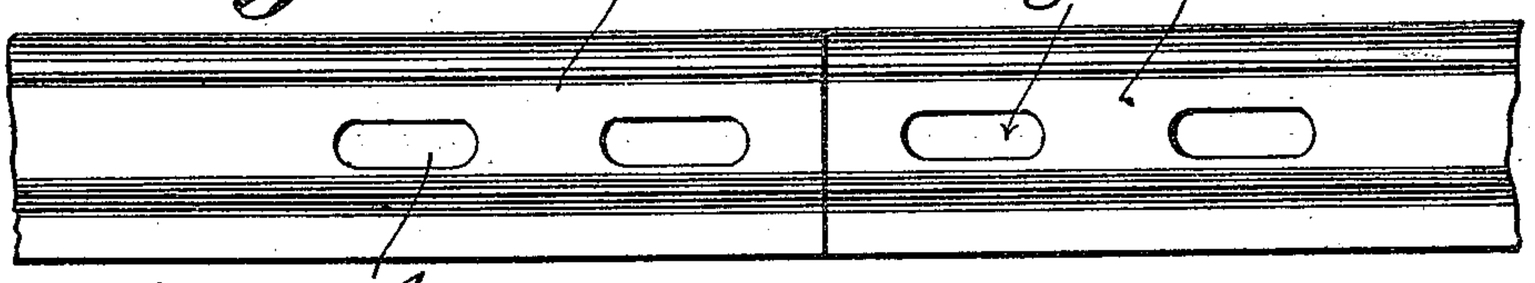
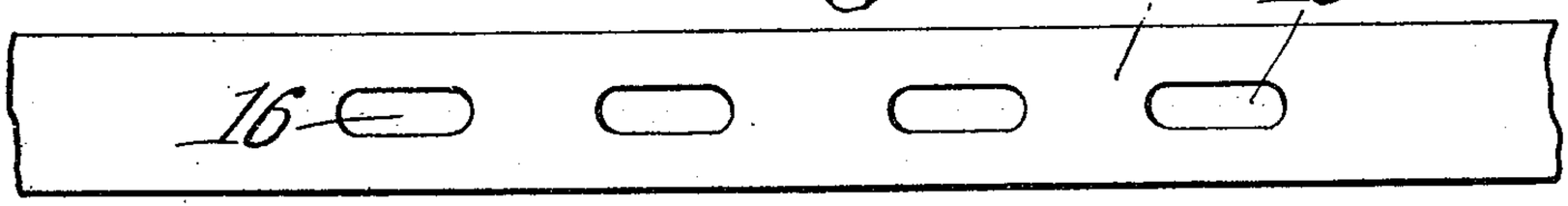


Fig. 3.



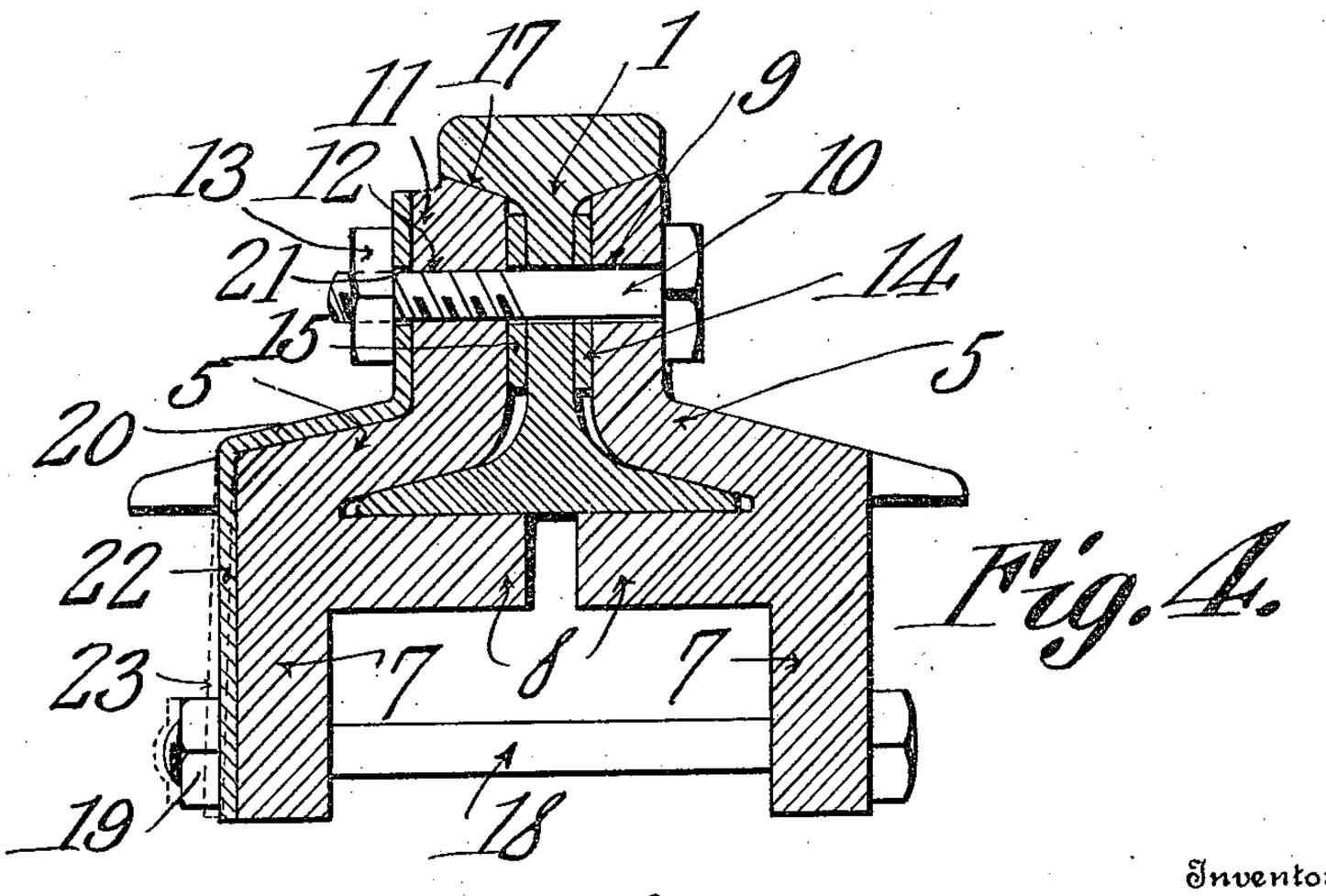


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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RAILWAY-JOINT.

960,428. Specification of Letters Patent. **Patented June 7, 1910.**

Application filed November 19, 1909. Serial No. 528,932.

To all whom it may concern:

Be it known that I, STERLING STEPHENS, a citizen of the United States, residing at Bushnell, in the county of Sumter and State of Florida, have invented a new and useful Railway-Joint, of which the following is a specification.

This invention relates to rail joints and has for an object to provide a rigid rail joint which will permit the free expansion and contraction of the rails and will be noiseless under all the various stages of expansion and contraction of the rails.

A further object is to provide a rail joint which will partially inclose the abutting rail base flanges and web, so that a substantial foundation is presented to support the rail and prevent the occurrence of so-called low joints.

A still further object is to provide a rail joint which will have the clamping bolt nuts locked against accidental disengagement without the use of the usual jam nuts.

With the above advantages and other objects in view which will appear as the description proceeds, my invention embraces certain novel details of construction and combination of parts which will be hereinafter more fully described and claimed.

In the accompanying drawing forming part of this specification, Figure 1 is a side elevation of a rail joint constructed in accordance with my invention. Fig. 2 is a fragmentary detail view of the meeting ends of two rails having longitudinal slots to permit of the application of my improved rail joint thereto. Fig. 3 is a fragmentary detail view of a damper strip. Fig. 4 is an enlarged transverse section taken on the line A—B of Fig. 1.

In a more detailed description of my invention in which like characters of reference designate similar parts in the views shown, 1 and 2 designate the abutting ends of a pair of railway rails of the usual and well known kind. Formed in the webs of the rail are longitudinal slots 3 and 4 in which work the clamping bolts of the rail joint.

The rail joint consists of a pair of chairs 5 adapted to conform to the contour of a rail base flange and web, and having suitable openings 6 for the reception of spikes. Formed upon the longitudinal lower edge of each chair is a tongue 7 which extends downwardly and considerably below the base flange of the rail and is provided with an inturned flange 8 adapted to engage the bottom face of the rail base flange. As will be seen the abutting ends of the rail are nearly inclosed by the chairs so that a rigid foundation is presented which prevents either of the rails from sinking below their normal alinement. Formed in each of said chairs is a plurality of annular openings 9 which register with the longitudinal slots in the rail web to receive clamping bolts 10. Projecting laterally from the rail webs are integral lugs 11 that are provided with threaded annular openings 12 which engage the threaded extremities of the clamping bolts 10 and coöperate with the nuts 13 thereof to prevent the accidental disengagement of the bolts. The lugs perform the function of lock nuts so that the employment of the usual jam nuts for locking the bolts in position is not required.

In order to prevent the rattling of the rail joint when the rails are contracted, I provide a pair of damper strips 14 and 15 which are preferably formed from compressed paper or other suitable fiber. The damper strips are provided with longitudinal slots 16 which register with longitudinal slots of the rail webs to receive the clamping bolts and permit the rails to expand and contract without causing the creeping or distortion of the damper strips. The damper strips are sufficient in thickness to so space the chairs from the webs of the rails that the top faces of the chairs and opposed bottom faces of the rail heads are disposed in abutting contact, as shown at 17. The rail heads are thus held in direct contact with the chairs so that a loose connection, that is to say, a partial contact between the two is prevented whereby rattling of the joint caused by the contraction or expansion of the rail from extremes of temperature is obviated.

Connecting the free ends of the down-turned tongues 7 are clamping bolts 18. By tightening the clamping bolts 18 the free ends of the down-turned tongues may be drawn together and a compact and rigid rail joint made.

For preventing the accidental disengagement of the nuts 19 from the clamping bolts 18, a nut locking plate 20 is provided. The clamping plate 20 is adapted to conform to the contour of the abutting rail webs, as shown, and is provided with a plurality of

openings 21 for the reception of the clamping bolts 10. The nuts 13 of the clamping bolts bear against the outer face of the nut locking plate and securely hold the plate in position. Formed upon the lower longitudinal edge of the nut locking plate is a resilient flange 22 adapted to engage the outer lateral face of the down-turned tongue 7. The flange is provided with an annular opening 23 for the reception of the clamping bolt 18. The flange 22 exerts an outward pressure upon the nut 19 when the same is advanced to its final position and serves to securely lock the same in place.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the construction and operation of my invention will be easily understood without a more extended explanation, it being understood that various changes may be made in the form, proportion and minor details of construction without sacrificing any of the advantages or departing from the spirit of the invention.

What is claimed is:

The combination with the meeting ends of rails, each of which is provided with a longitudinal slot in its web, of a pair of chairs adapted to conform to the contour of the base flanges and webs of said rails, each of said chairs having a down-turned tongue provided with an inturned flange to engage the bottom face of said rail base flange, said chairs having annular openings registering with the slots in the rail webs for the reception of clamping bolts, lugs projecting laterally from the chairs having threaded openings to engage the threaded extremities of said bolts and coöperate with the nuts thereof in securing said bolts against accidental displacement, damper strips disposed between the chairs and the rail webs to prevent the rattling of the joint, said damper strips having longitudinal slots registering with the longitudinal slots of the rail webs to permit of an expansion and contraction of the rail, bolts connecting the free ends of the down-turned tongues of said chairs, and a nut locking plate adapted to conform to the contour of said chair and having openings for the reception of the first named clamping bolts, said plate having a resilient flange provided with openings to receive the second named clamping bolts, said flanges exerting an outer pressure upon the nuts of the second named bolts to hold the same locked in position, substantially as described.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

STERLING STEPHENS.

Witnesses:
W. A. Collins,
R. F. Collins.