

H. ALLEN.
 Railway Rail-Joints.

No. 166,243.

Patented Aug. 3, 1875.

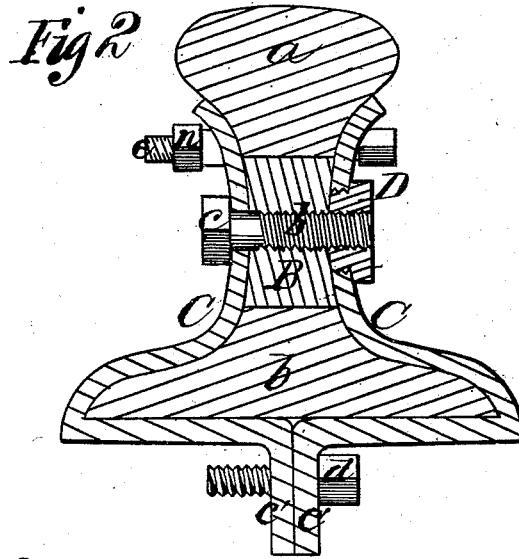
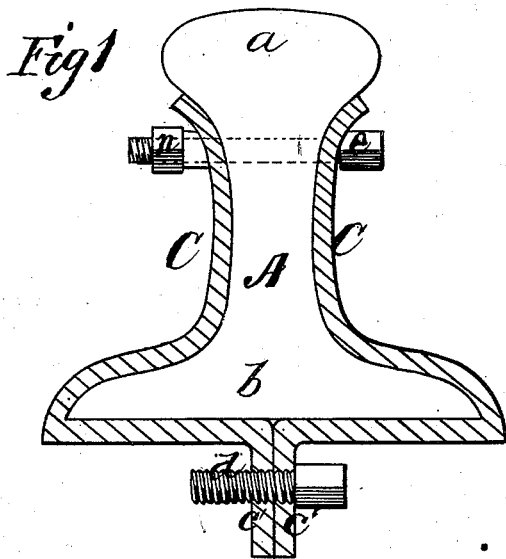


Fig 3

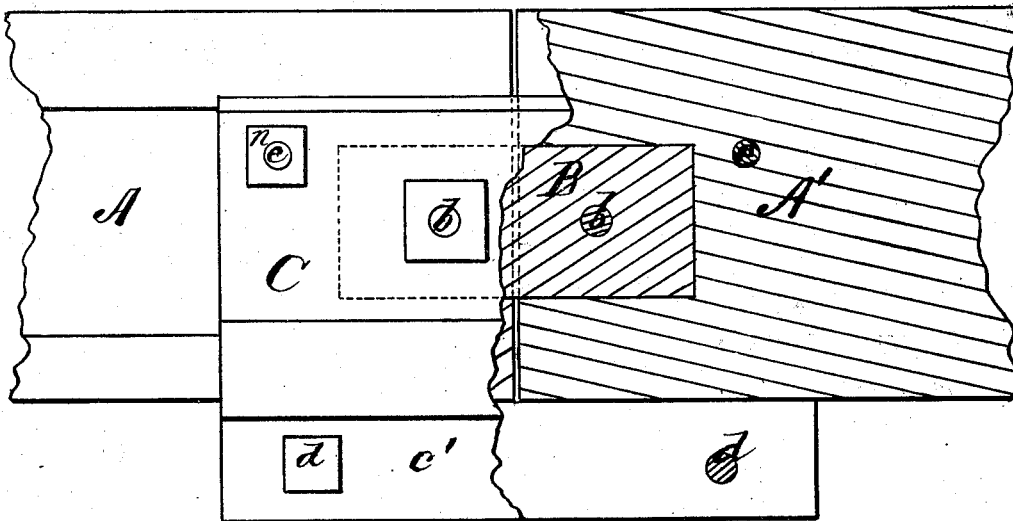
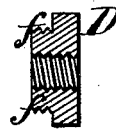
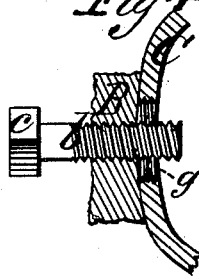


Fig 4



WITNESSES
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UNITED STATES PATENT OFFICE.

HOSEA ALLEN, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY-RAIL JOINTS.

Specification forming part of Letters Patent No. **166,243**, dated August 3, 1875; application filed June 19, 1875.

To all whom it may concern:

Be it known that I, HOSEA ALLEN, of Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and valuable Improvement in Railroad-Rail Chairs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon:

Figures 1 and 2 of the drawings are representations of transverse vertical sections of my railroad-rail chair, and Fig. 3 is a plan view, part sectional, of the same. Figs. 4 and 5 are sectional detail views.

This invention has relation to improvements in chairs for railroad-rails; and the nature of the invention consists in combining with sectional plates, each conforming to the shape of the web and supporting-flange on its side of the rail, and with a joint-block adapted to be snugly received into mortises cut into the contiguous ends of the rails, one or more bolts adapted to be passed into registering perforations in the sectional parts of the chair and joint-blocks, whereby the rails are prevented from lateral displacement relative to each other, and are allowed to have a degree of endwise displacement for the purpose of allowing them to contract and expand under varying temperatures without breaking the bolts, as will be hereinafter more fully explained. In the annexed drawings, A A' designate two adjoining rails, having in their contiguous ends between the threads *a* and supporting-flanges *b*—that is to say, in their webs—recesses of rectangular form adapted to receive each one-half of a joint-block, B. This block is provided at each side of the joint of the rails with one or more perforations, adapted to receive a bolt or bolts, *b*, each having an enlarged head, *c*, which bolts pass through registering-perforations in sections C of a railroad-chair. These sections are adapted, when placed in position, each to embrace one-half of the contiguous ends of the rail below the thread—that is to say, they conform to the superficies of the rail—and they are each provi-

ded with a flange, *c'*, through which registering screw-threaded perforations are made, adapted to receive screws *d*, by means of which the lower part of these sections is clamped about the lower portion of the rails A A'. When bolts *b* are passed through registering-perforations in the segmental chair, and in the joint-block B, and a nut, D, is forcibly set up upon their projecting screw-threaded ends, the upper part of the sectional chair C will be clamped against the web of the rail with sufficient force to hold them against lateral displacement relative to each other. At the same time the clamping force of the said sections will be insufficient to prevent the said rails from endwise displacement adequate to yielding to expansion or contraction consequent upon a change from a higher to a lower temperature, and vice versa, without rendering the bolts liable to be broken by such expansion or contraction. With a view to preventing the rails from such endwise displacement as would be sufficient to withdraw their ends from the sectional chair above described, I have designed the following: A perforation is cut in the sectional chair, registering with one in the rail, through which is passed a bolt, *e*, which latter is secured in position by means of a nut, *n*, applied upon its projecting screw-threaded end. Nuts D, before alluded to, are each provided upon their under sides with a screw-threaded rabbet, *f*, which is adapted to be received into a correspondingly screw-threaded perforation in the chair, so that when the said nuts are forcibly set up upon the ends of bolts *b* this rabbet will at the same time engage with the thread in the chair. By this means the chair, which is immovable, is made to prevent the said nuts from turning, and a very effectual nut-lock is obtained. In practice the joint-block B will be forcibly driven into the mortise in the end of the rails, care being taken that the latter be not split.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railroad-chair, the combination, with the rails A A', and the joint-block B, of the sectional chair C C, having flanges *c'* upon its

under side, adapted to be clamped around and about the web of the said rails, substantially as specified.

2. The nut *D*, having screw-threaded rabbet *f*, in combination with the bolt *b* and section *C* of a railroad-chair, having a screw-threaded aperture, *g*, adapted to receive the rabbet on the nut, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HOSEA ALLEN.

Witnesses:

O. B. EVANS,
D. A. RAY.