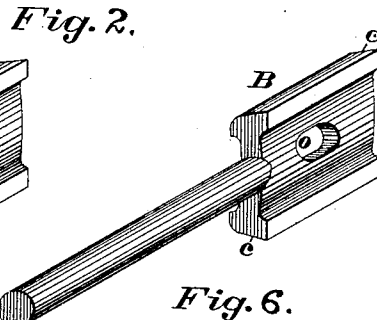
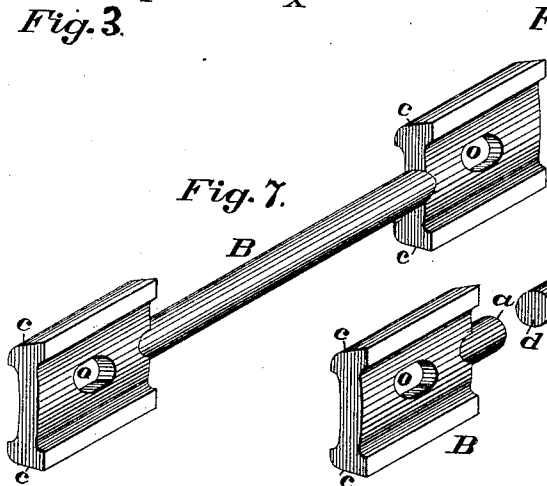
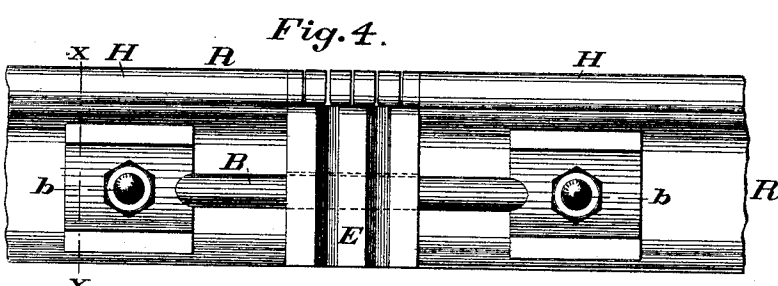
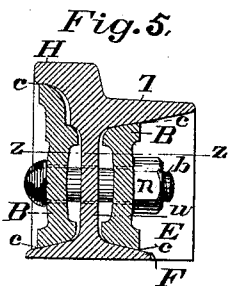
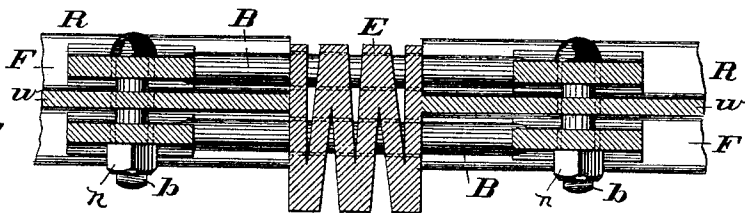
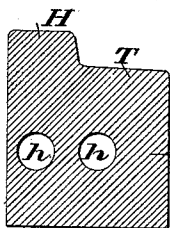
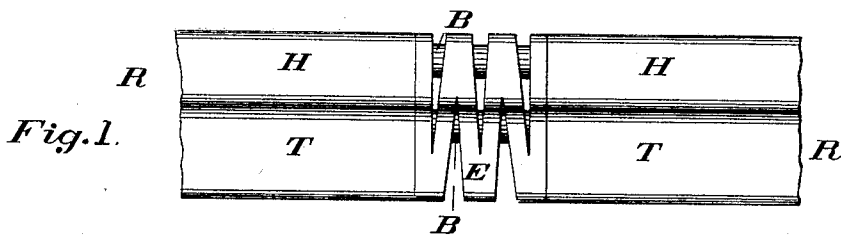


(No Model.)

A. J. MOXHAM.
RAIL FOR RAILROADS.

No. 477,674.

Patented June 28, 1892.



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ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

RAIL FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 477,674, dated June 28, 1892.

Application filed September 22, 1891. Serial No. 406,495. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Rails for Railroads, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide rails which when laid shall form continuous track-rails, having suitable provision at the same time for expanding and contracting under changes of atmospheric temperature.

I will now describe one method of carrying out my invention.

In the accompanying drawings, Figure 1 is a view in plan of an expansible rail embodying my invention. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a vertical cross-section taken through Fig. 2 at the line X X. Fig. 4 is a horizontal section taken through Fig. 3 at the line Z Z. Fig. 5 shows in cross-section, and Figs. 6 and 7 in perspective, certain details hereinafter described.

In said figures the several parts are respectively indicated by reference-letters, as follows:

The letters R indicate two contiguous rails; H, their heads; T, their side trams; w, their webs, and F their lower flanges.

The letter E indicates an expansion piece or block of metal serrated or partially cut through from opposite sides or otherwise formed of the desired shape. The upper surface of said piece conforms to the shape of the adjoining rails, as shown in Fig. 5, and said piece is inserted between the ends of the rails R and is preferably welded to said rail ends, though any other suitable means of securing it in place may be employed. The piece E is provided with holes h, Fig. 5, passing longitudinally therethrough, through which holes are passed, the rods or pieces B having on their ends bearing-plates c, provided with holes, or, preferably, slots o. Said bearing-plates may be shaped as shown to bear against the under sides of the heads and tram of the rails and over the lower flanges F. Two such rods are shown and deemed preferable, though only one may be used, if desired.

The several parts shown in the drawings are united in the following-described manner: The expansion-piece E is formed of the desired

shape with the holes h therein. Each rod B is preferably formed in two parts a d, as shown in Fig. 6, each part having a bearing-plate c, attached thereto. The longer portions d of the rods are then passed through the holes h in the expansion-piece and the shorter portions a then welded to the portions d, making an integral rod. The point of welding would be at the points a d, Fig. 6, and the appearance of the rod B after welding is shown in perspective in Fig. 7. The rod or rods having been thus inserted in the expansion-piece the device is slipped over the ends of the rails, leaving the expansion-piece between said ends, to which it is then preferably secured by welding. The bearing-plates C are then bolted to the webs of the rails by means of the bolts b, provided with nuts n, said plates making, preferably, a splice-bar fit with the rails. The plates C may be, however, merely used as adjuncts for holding the bolts b. Said bolts may be omitted, if preferred, as they are not essential to the invention.

By means of the expansion and contraction portion E a continuous rail may be formed which is free to elongate and shorten when expanding or contracting, the serrations in said piece approaching each other as the rail expands and receding from each other as the rail contracts, under changes of atmospheric temperature.

In order to provide against the possibility of the expansion portion E becoming loosened from the rails and to prevent danger of the track spreading or the rail bending or being bowed in permanent set at the point at which the expansion-piece is inserted, the rod or rods B are passed through said expansion-piece and bolted to the web of the rail, as above described, the slots o through which the bolts b pass permitting said bolts to slide therein under the contraction and expansion of the rails. Thus while the rails are free to elongate and shorten transverse stiffness is secured and the expansion portion strengthened, and in case the welding between the rails and expansion-piece should give way or break said piece would still be held in place until the defective weld could be renewed.

The openings in the expansion-piece E at the junction of the head and tram are so small that no jar will be felt by the passage of the

car-wheels across them. With an expansion-piece inserted between the ends of rails in track the spaces or openings in such expansion-piece will cause much less jar than the forms of joints at present in use—that is, each cut in the expansion-piece will be but a fraction of the space or single opening heretofore left between two contiguous rails for a similar purpose. In practice, however, it may be sufficient to directly weld the ends of several rails together, and at, say, every two hundred or three hundred feet, or at whatever distance is found best, insert one of the expansion-pieces above described.

I do not confine myself to the form of rail shown, as it is obvious that my invention is applicable to any form of girder-rail, nor to the exact shape of the pieces B, nor to the precise form of expansion-pieces shown.

Having thus fully described my said invention, I claim—

1. The combination of railway-rails, an expansion and contraction portion secured between the ends of said rails, and a longitudinal stiffening piece or pieces passing through said portion on the side of said rails.

2. The combination of railway-rails, an expansion and contraction piece welded to the ends of said rails, and a longitudinal stiffening piece or pieces passing through said piece on the side of said rails.

3. The combination of railway-rails, an expansion and contraction portion secured between the ends of said rails, and a longitudinal

stiffening piece or pieces passing through said portion and secured to said rails.

4. The combination of railway-rails, an expansion and contraction piece between said rails, and a longitudinal stiffening piece or pieces passing through said piece and provided with plates at their ends.

5. The combination of railway-rails, an expansion and contraction piece between said rails, and a longitudinal stiffening piece or pieces passing through said piece and provided with plates at their ends secured to said rails.

6. The combination of railway-rails, an expansion and contraction piece between said rails, and a longitudinal stiffening piece or pieces passing through said piece and provided with bearing-plates at their ends.

7. The combination of railway-rails, a serrated expansion and contraction piece welded to the ends of said rails, and a longitudinal stiffening piece or pieces passing through said piece and provided with bearing-plates at their ends.

ARTHUR J. MOXHAM.

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