

(No Model.)

A. J. MOXHAM.  
RAIL FOR RAILROADS.

No. 477,673.

Patented June 28, 1892.

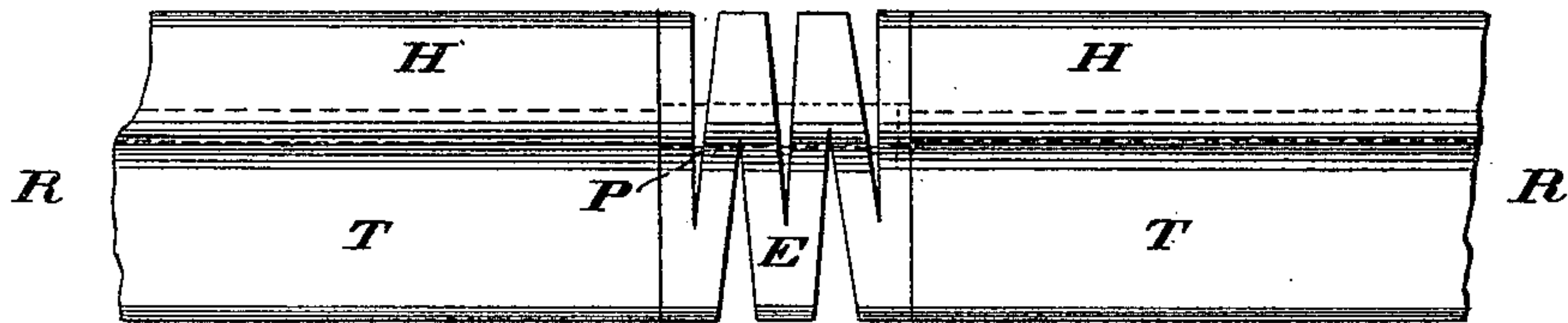


Fig. 1

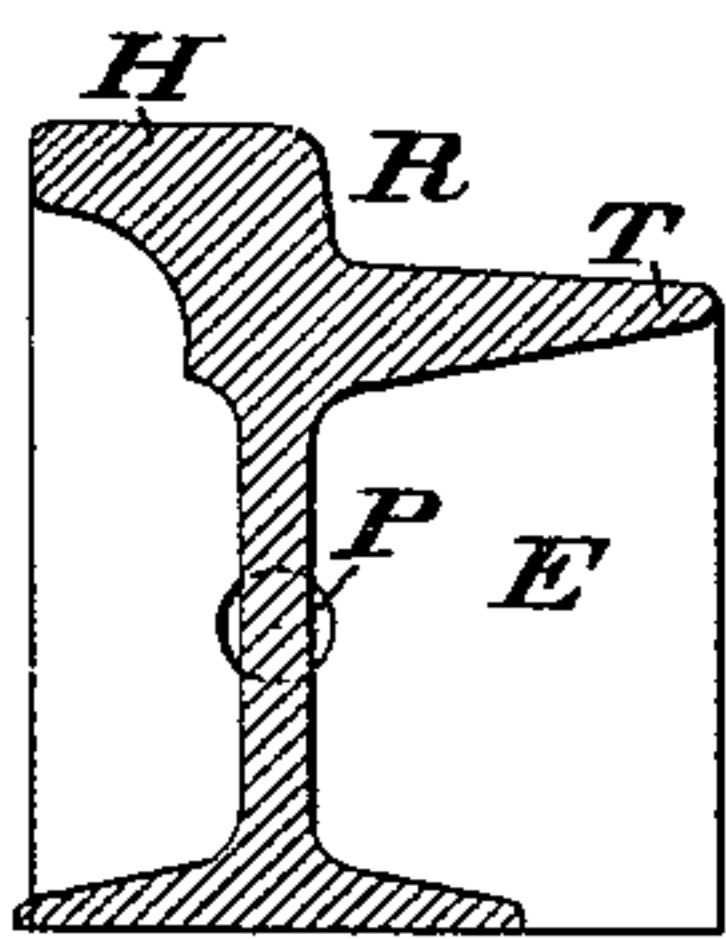


Fig. 2.

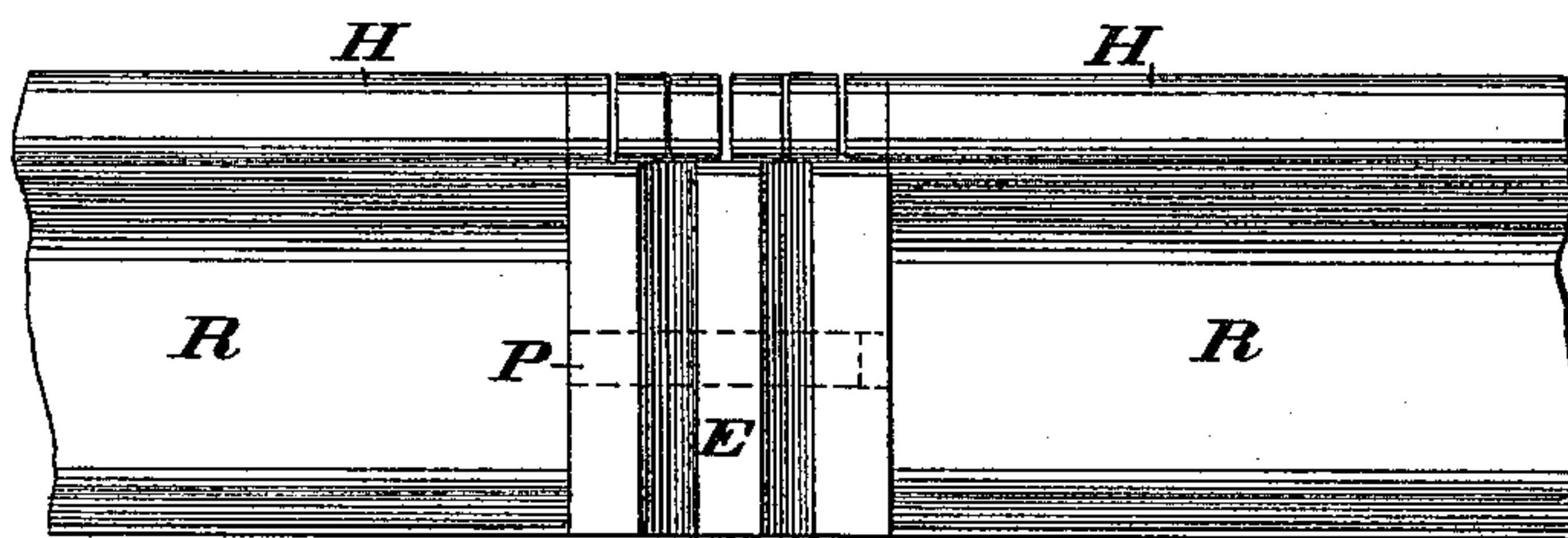


Fig. 3.

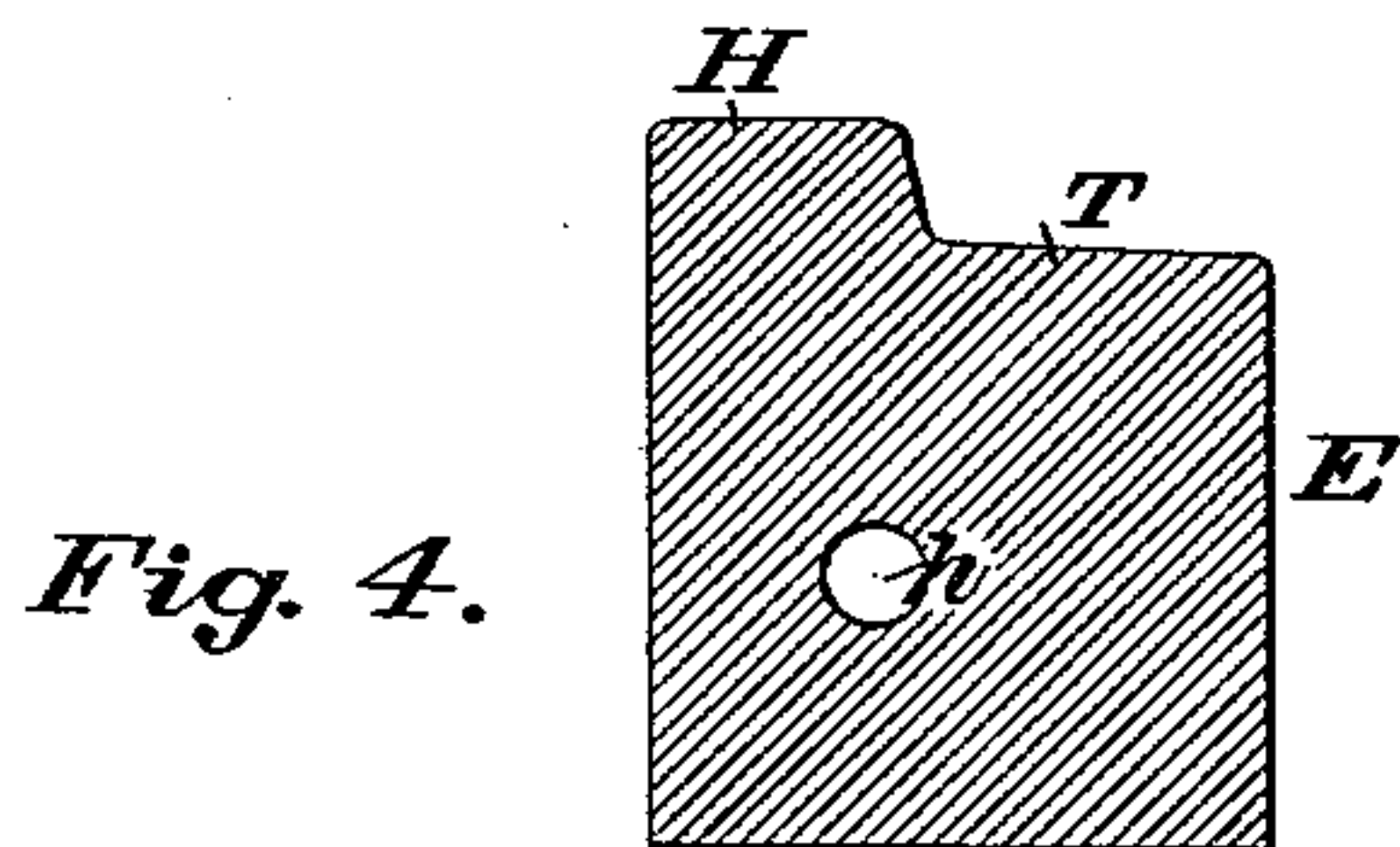


Fig. 4.

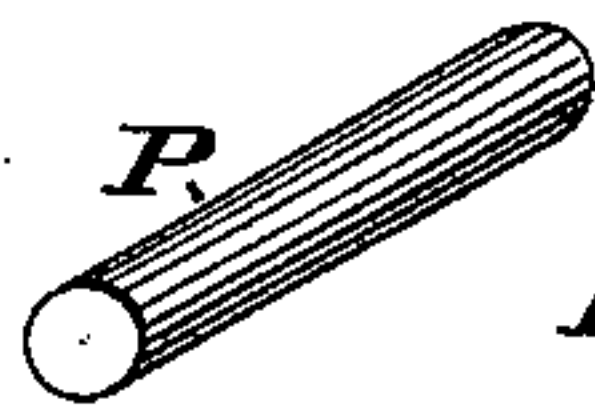


Fig. 5.

WITNESSES:  
Francis P. Riley,  
W. H. Brückel,

INVENTOR  
A. J. Moxham  
BY R. M. Toorke  
ATTORNEY

# UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

## RAIL FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 477,673, dated June 28, 1892.

Application filed September 22, 1891. Serial No. 406,494. (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 Rail-roads, 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 in place shall form a continuous track, having suitable provision at the same time for expanding and contracting under changes of atmospheric temperature, and relates more particularly to stiffening the expansion and contraction portion, as hereinafter fully set out.

I will now describe in detail an embodiment of my invention.

In the accompanying drawings, Figure 1 is a view in plan of an expansion-piece inserted between the ends of two rails or of a severed rail embodying my invention. Fig. 2 is an end view of Fig. 1. Fig. 3 is a side elevation of Fig. 1. Figs. 4 and 5 show in cross-section and perspective, respectively, 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, and T their side trams.

The letter E indicates a piece or block of metal serrated or partially cut through from opposite sides, or otherwise formed to the desired shape. The upper surface of said piece conforms to the shape of the adjoining rails, as shown in Fig. 4, and said piece is inserted between the contiguous 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 a hole *h*, Fig. 4, in which hole is inserted a neatly-fitting rod, piece, or portion P. (Shown detached in Fig. 5.) This rod is of less length than the expansion-piece E, as will be seen by referring to Figs. 1 and 3, and should be preferably inserted so as to come in line with the vertical webs of the rails, which webs will prevent the rod from working out when secured in place.

By means of the expansion and contraction piece 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 prevent danger of the track spreading or the rails bending or being bowed at the point at which the expansion-piece E is inserted, due to the absence of the metal cut out at said point, the rod or portion P is inserted in said expansion-piece, as above described. Thus while the rail is free to elongate and shorten, (the rod P being of less length than the expansion-piece E,) transverse stiffness is secured and the expansion portion strengthened.

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 E 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 an ordinary T or railroad rail, or to any form of rail, whether a girder-rail or not; nor do I confine myself to the shape of the stiffening piece or rod P, as any shape of the same will do if neatly fitted in the piece E; nor do I confine myself to the form of the expansion-piece or its method of connection with the rails, provided such piece is of such construction as to be flexible and compensate for changes of temperature.

Having thus fully described my said invention, I claim—

1. A railway-rail provided with an expansion and contraction piece secured at the end of said rail, said piece having a stiffening rod or portion inserted therein.



2. A railway-rail provided with an expansion and contraction piece welded at the end of said rail, said piece having a stiffening rod or portion inserted therein.

5 3. In combination with railway-rails, an expansion and contraction piece secured between the ends of said rails and provided with a stiffening rod or portion.

10 4. In combination with railway-rails, a serrated expansion and contraction piece welded to the ends of said rails and provided with a stiffening rod or portion.

5. A serrated expansion and contraction piece for railway-rails provided with a stiffening portion inserted in a hole in said piece.

ARTHUR J. MOXHAM.

Witnesses:

OLIVER IMRAY,  
*Patent Agent, 28 Southampton Buildings,*  
*London, W. C.*

JNO. P. M. MILLARD,  
*Clerk to Messrs. Abel & Imray, Consulting*  
*Engineers and Patent Agents, 28 South-*  
*ampton Buildings, London, W. C.*