

(No Model.)

A. J. MOXHAM.
COMBINED RAIL AND CROSS TIE.

No. 477,679.

Patented June 28, 1892.

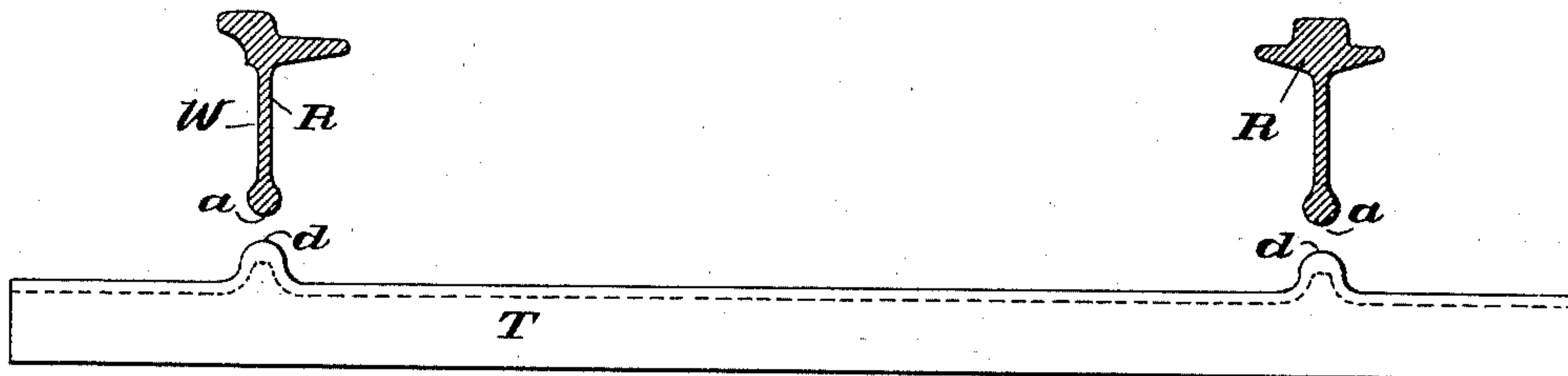


Fig. 1

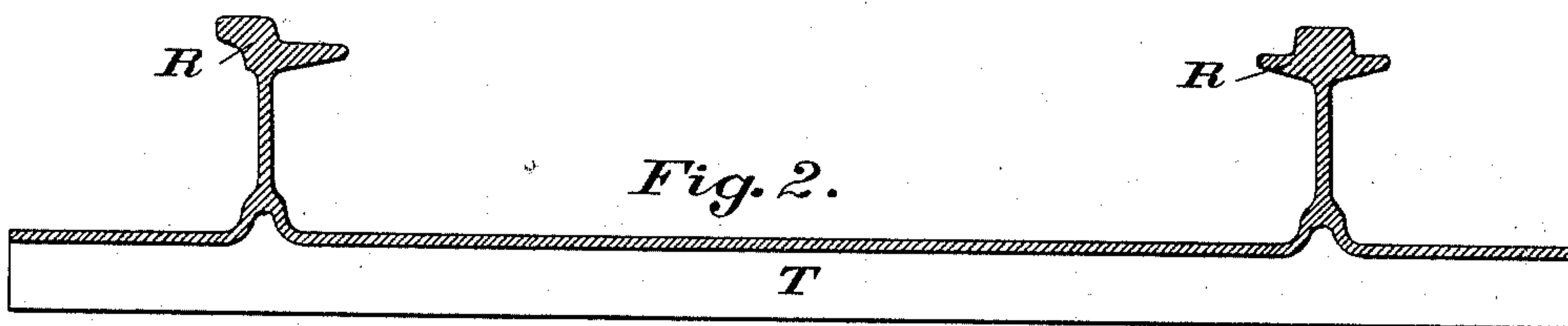


Fig. 2.

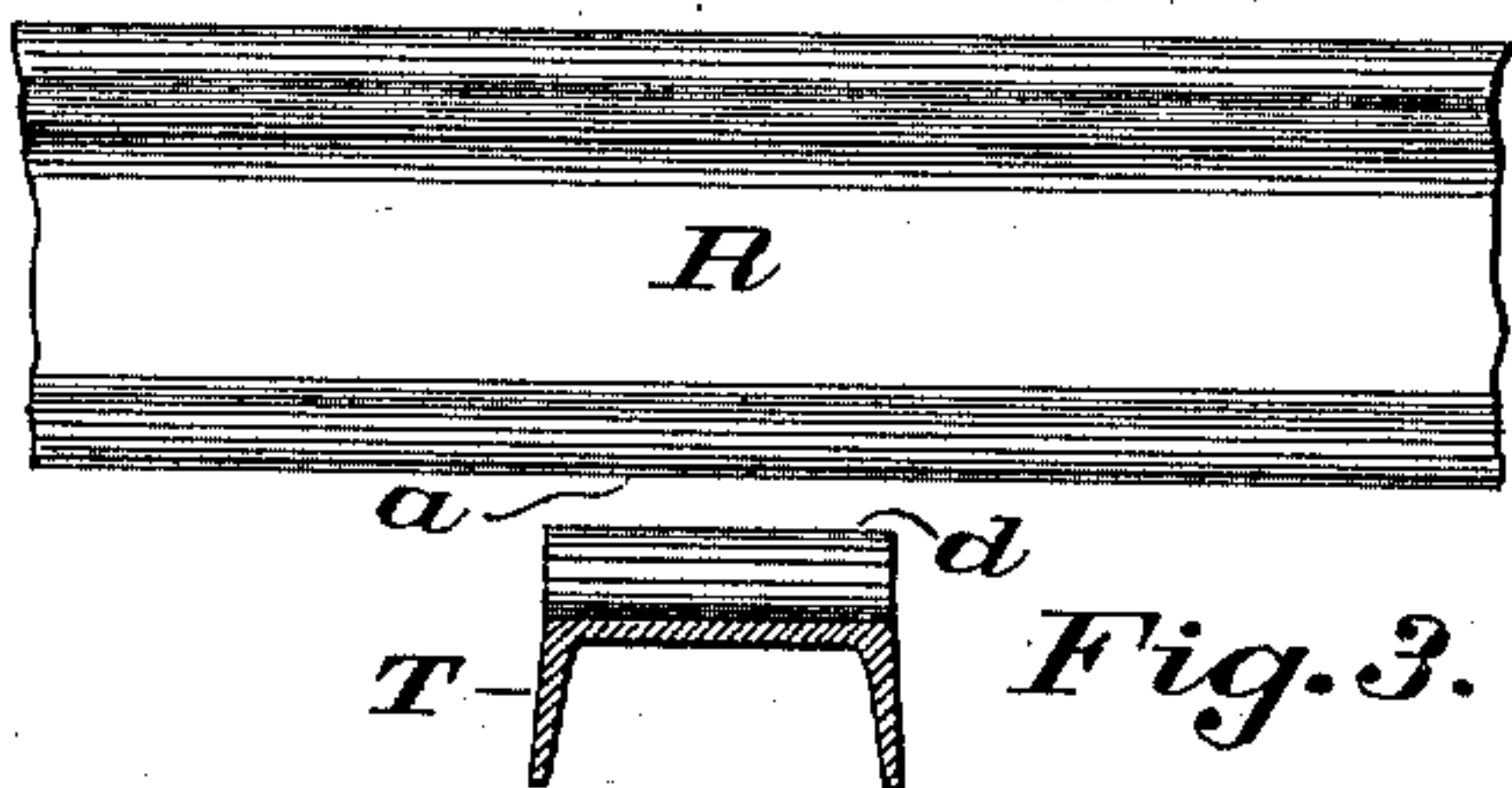


Fig. 3.

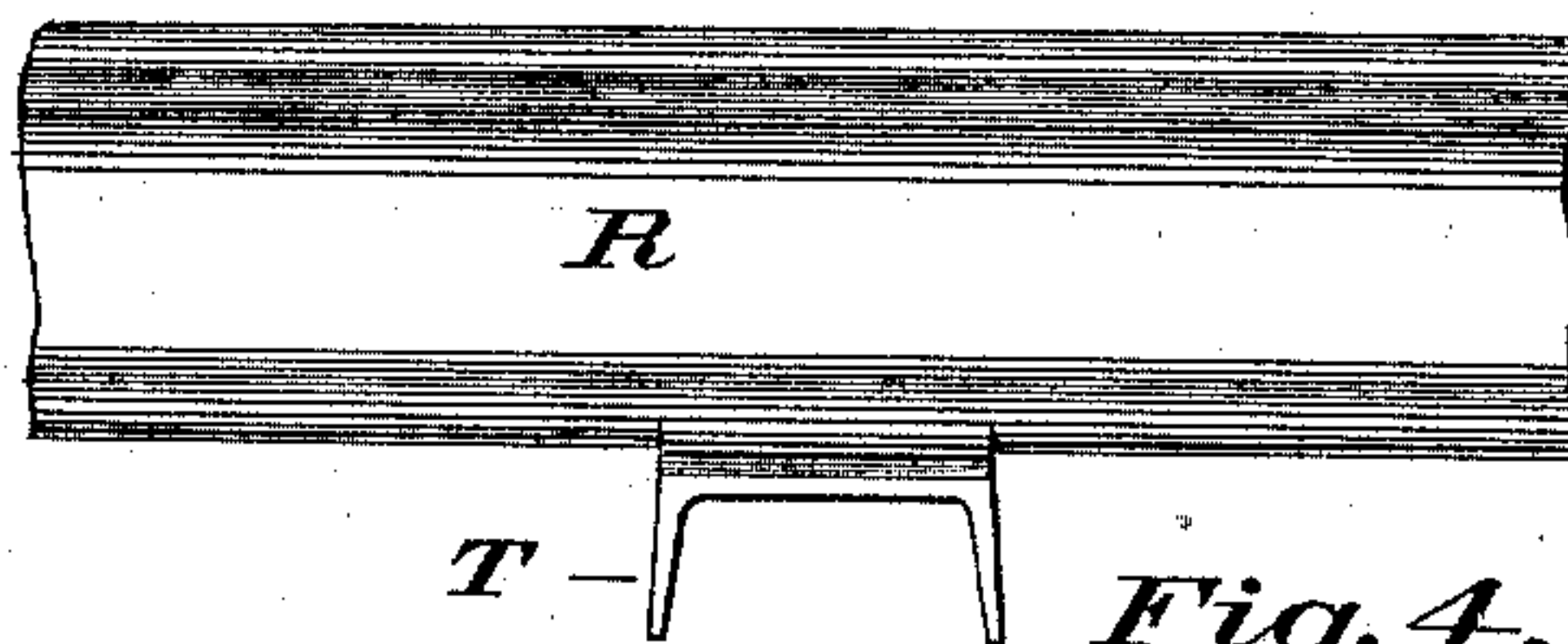


Fig. 4.

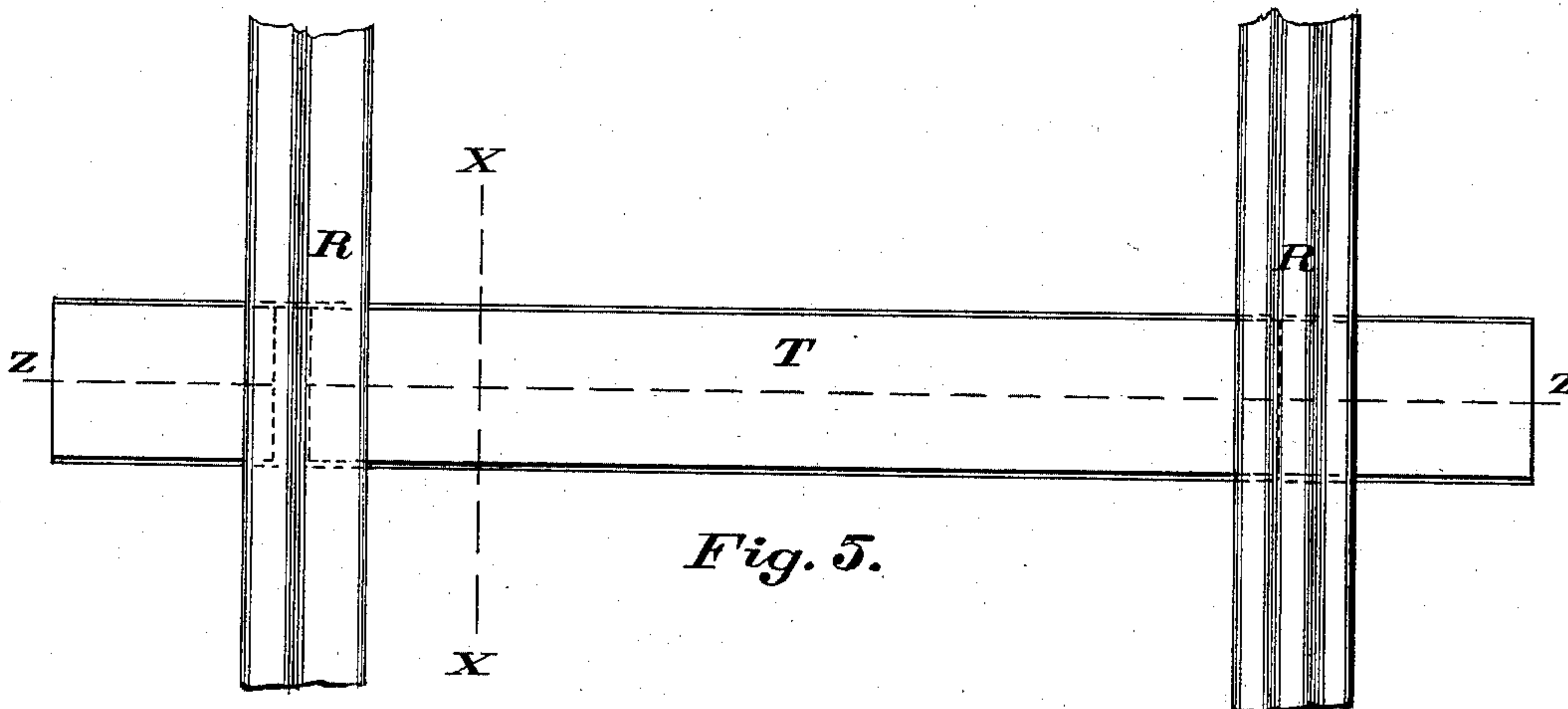


Fig. 5.

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Fig. 6.



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ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

COMBINED RAIL AND CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 477,679, dated June 28, 1892.

Application filed September 21, 1891. Serial No. 406,486. (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
5 useful Combined Rail and Cross-Tie, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide
10 for a railway-track rails and cross-ties formed in one piece.

The invention will first be described in detail, and then particularly set forth in the claims.

15 In the accompanying drawings, Figure 1 shows in cross-section the rails of a railway-track, with a cross-tie in side elevation, the rails and cross-tie being separate from each other. Fig. 2 shows a cross-section taken
20 through the line *z z* of Fig. 5, showing the rails and cross-tie welded together to form a homogeneous structure, as hereinafter described. Fig. 3 shows a side elevation of one rail, with the cross-tie, shown partly in section, separate therefrom. Fig. 4 shows an end elevation of the cross-tie, with a rail shown in side elevation, welded thereto. Fig. 5 is a view in
25 plan of the rails and cross-tie forming an integral structure.

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

The letters *R* indicate the rails of the track, which may be of any desired form, two forms being shown in the drawings, and *T* indicates
35 a metal cross-tie, preferably of the channel form shown, though any other suitable form may be used.

The structure is constructed as follows: Rails and cross-ties having been rolled or otherwise formed into the desired shapes, the
40 bulbs or protrusions *a* on the lower portions of the webs of the rails are abutted to the protrusions *d* on the cross-ties, and the rails and cross-ties are then welded together at

these points by any suitable method, process, 45 means, or act of welding to form a homogeneous whole. The presence of the beads or bulbs shown at the points *a d* is preferable as contributing to an easier and more perfect weld; but said beads or bulbs may be omitted, if desired. 50

The advantages obtained by this invention will be apparent. The rails and cross-ties may be secured together in the shop and shipped ready to be laid in track, and all bolts, rivets, 55 or other fastenings are dispensed with.

It is of importance that the portion of metal between the heads of the rails and the cross-tie should be of such height as to permit of easy and good paving over the tie. In case it
60 is desired to sink the cross-tie to an unusual depth, it is evident that a false web, such as shown at *L*, Fig. 6, can be interposed between the web proper of the rail and the tie instead of increasing the depth of the web of the rail 65 beyond that required for strength only. One end of said false web would then be welded to the web proper of the rail and the other end to the cross-tie, or the whole upward projection could be stamped out of or otherwise 70 formed as part of the tie.

Having thus fully described my said invention, I claim—

1. A railroad-rail having a cross-tie welded thereto, so as to form an integral structure. 75

2. A railroad-rail having a bead or bulb at the bottom of its web united by welding to a cross-tie having a corresponding bead or bulb.

3. A railroad-rail having interposed between rail and cross-tie an intermediate piece, 80 said piece being welded to both the rail and cross-tie.

4. A railroad-rail having welded thereto a cross-tie of channel form.

ARTHUR J. MOXHAM.

Witnesses:

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PATRICK FITZPATRICK.